

## Welcome Message



Dear colleagues and friends,

The Fifth Eastern Asia Dermatology Congress (EADC) will be held in Kunming Dianchi International Convention & Exhibition Center, Kunming, Yunnan Province, China from Wednesday, June 20th to Saturday, June 23rd, 2018. On behalf of the host society, Chinese Society of Dermatology, I cordially invite all of you to this meeting.

EADC is the official congress of Chinese Society of Dermatology (CSD), Japanese Dermatological Association (JDA) and Korean Dermatological Association (KDA). The similar traditional culture and rapid development in eastern Asia characterize this congress both regional and international. We all know that the 1st EADC successfully started in Fukuoka Japan in 2010, then followed by the 2nd EADC in Beijing, 2012, the 3rd EADC in Jeju Island, 2014 and 4th EADC Tokyo, 2016. We will follow the footsteps of previous successful EADCs, focusing on the international frontiers and developments in dermatology, covering both clinical and basic research area. I hope that this congress in Kunming would be both productive and fruitful.

The EADC is not only a meeting of primarily aforementioned dermatology associations and their members, but also welcome participants from other Asian countries as well as all over the world. In regards to the Fifth EADC, we have received 1120 academic paper submissions, and expect more than thousands of attendees. The current scientific committee have programmed and provided attendees with the opportunities to learn recent important fundamental and clinical research results, and at the same time offer the educational programs, such as symposiums, keynote speeches, lectures as well as CPCs.

Finally, this meeting will provide a great opportunity for all participants to communicate with one another and will strengthen the friendship among all participants as well as dermatologists from eastern Asian countries.

Kunming, the capital city of Yunnan province in China, enjoys a reputation of Spring City because of its mild climate all year around. It is an old city with a long history. Also it is an advanced, active and friendly city. I hope that all of you will be able to enjoy the local scenery, the history and the culture of Kunming area during your stay. I sincerely hope that the 5th EADC will be an exciting and memorable experience to you all and contribute to the rapid development of Dermatology in Asian.

Looking forward to welcoming you in Kunming!

**Min Zheng**

*President of the Fifth Eastern Asia Dermatology Congress*

*Vice President of Host Society, Chinese Society of Dermatology*

*Professor & Chairman, Department of Dermatology, Second Affiliated Hospital, Zhejiang University, School of Medicine*

## Welcome Message



Dear Friends and Colleagues,

As the JDA-appointed President of the 5th Eastern Asia Dermatology Congress (EADC), it is my great pleasure and honor to welcome you to the EADC, which will be held in Kunming, China. Kunming is called, “Spring city”, and is geographically located in the south. Due to its altitude, Kunming is warm in the winter and cool in the summer. It is a very pleasant place. Moreover, I think that Kunming is a special place where it is possible to enjoy both nature and the Chinese culture. There are many scenic spots and historic sights. Please join us at the 5th EADC in Kunming, not only for the scientific aspects, but also to enjoy memorable experiences and collegiality.

I would like to tell you about the EADC history. After a few years of intensive discussion among the Chinese Society of Dermatology (CSD), the Korean Dermatology Association (KDA), and the Japanese Dermatology Association (JDA), the EADC was formally founded by inter-society agreements in 2009. Establishment of the EADC was made possible by close friendships cultivated through the 30-year history of the Korea-Japan Joint Meeting of Dermatology, and the 20-year history of the China-Japan Joint Meeting of Dermatology. Under the leadership of three presidents, Professors Masutaka Furue (host society, JDA), Xuejun Zhang (CSD), and Ki Hong Kim (KDA), the 1st EADC was successfully held in Fukuoka from September 30 to October 3, 2010, attracting more than 800 participants. The EADC is a unique organization founded on the concept of a ‘society-based’ alliance rather than a ‘nation-based’ alliance. EADC meetings have been held under the auspices of the JDA (host society), CSA, and KDA, irrespective of the country and nationality of the participants. Therefore, the EADC is an international meeting that many dermatologists can attend from Asian countries. The scientific program includes plenary talks, and concurrent oral and poster presentations after peer-review of all abstracts by the program committee members.

The 5th EADC will be held in Kunming June 20-23, 2018, with deep inter-society friendships and commitments of the CSD (host society), KDA, and JDA. As described in the bylaws, the main purposes of the EADC are to increase knowledge regarding the biophysiology and pathophysiology of the skin, cutaneous disorders, and their treatments; to foster collaboration among dermatologists and scientists in Eastern Asia; and to promote education and dissemination of scientific information by organizing meetings and sponsoring/supporting cooperative studies. To achieve these purposes, the EADC is charged with sharing our knowledge with all dermatologists in Eastern Asia. I believe that this year’s EADC can meet this challenge.

*Akimichi Morita, MD, PhD*  
*JDA-appointed President of the 5th EADC*

*Professor and Chairman*  
*Department of Geriatric and Environmental Dermatology*  
*Nagoya City University Graduate School of Medical Sciences*  
*Vice Director of Nagoya City University Hospital*

## Welcome Message



Dear colleagues and friends,

It is my great pleasure to welcome all of you to the 5th Eastern Asia Dermatology Congress (EADC), which will be held from June 20th to June 23rd, 2018 in Kunming, China.

East Asia has emerged as one of the most important areas pertaining to academic, economic and cultural fields in the recent. Through the EADC, the three societies, CSD, JDA and KDA have kept contact each other and built a close inter-society relationship based on the similar culture, ethnics and mutual friendship.

In this sense, the EADC which has been hosted by the three national dermatological societies of China, Japan and Korea, has great importance and significance for the dermatologists in this area and will bring a lot of insights in dermatological science.

The 5th EADC will be a great opportunity to get the recent advances in the field of dermatology and I sincerely hope that everyone in this meeting will be inspired and receive up-to-date knowledge.

On behalf of The Korean Dermatological Association (KDA), I would like to express my sincere gratitude to CSD and Chinese colleagues. Thank you for your great efforts and contribution to this congress.

Finally, please join the 5th EADC in Kunming. I hope that the 5th EADC will be an exciting and memorable experience to all of you.

*Seong Jun Seo, MD, PhD.*

*President of the Korean Dermatological Association*

*Professor, Department of Dermatology, Chung-ang University, Seoul, Korea*

# The 5th Eastern Asia Dermatology Congress (EADC2018)

**Dates** June 20–23, 2018

**Venue** Dianchi International Convention & Exhibition Center, Kunming, China

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Chinese Society of Dermatology (CSD)

Japanese Dermatological Association (JDA)

Korean Dermatological Association (KDA)

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# **Chinese Medical Journal**

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## **Special Lecture**

SL-1	1
<b>IL-17 family cytokines in skin inflammation</b>	
Chen Dong	
SL-2	1
<b>Scaffolds for brain development, maintenance and repair</b>	
Kazunobu Sawamoto	
SL-3	1
<b>Can artificial intelligence provoke the revolutionary change in the medical field?</b>	
Uhn Lee	
SL-4	2
<b>Potential of adipose-derived stem cells for the treatment of recessive dystrophic epidermolysis bullosa</b>	
Shigaku Ikeda	
SL-5	2
<b>Skin-brain connection</b>	
Jin Ho Chung	
SL-6	3
<b>Prokineticin 2 plays a pivotal role in psoriasis</b>	
Lai Ren	

## **Concurrent Session**

### *CS01 Appendages' Diseases*

CS01-1	4
<b>Update on the pathophysiology and clinical aspects of rosacea with a focus on Korean patients</b>	
Soyun Cho	
CS01-2	4
<b>Expression and pathogenesis of DDB2 and SELL in severe acne</b>	
Mai Endo, Wen-Juan Wu	
CS01-3	5
<b>Clinical analysis of trichilemmal cyst in our department over the past 10 years</b>	
Mai Endo, Toshiyuki Yamamoto	
CS01-4	5
<b>Allogeneic hair transplantation: the current experiments in animal models and future clinical implication</b>	
Ohsang Kwon	
CS01-5	5
<b>What new in nail and nail disorders?</b>	
Dong-Youn Lee	
CS01-6	6
<b>Gut microbiota alterations in moderate to severe acne vulgaris patients</b>	
Hui-Min Yan, Hui-Juan Zhao, Du-Yi Guo, Pei-Qiu Zhu, Chun-Lei Zhang, Wei Jiang	

CS01-7	6
<b>Frequent intake of soft drinks is associated with moderate to severe acne in adolescents: the College Student Skin Health Survey</b>	
Xiao-Yan Huang, Jiang-Lin Zhang, Jie Li, Shuang Zhao, Yi Xiao, Yu-Zhou Huang, Dan-Rong Jing, Li-Ping Chen, Xing-Yu Zhang, Xiang Chen, Min-Xue Shen	
CS01-8	7
<b>Identity-by-descent analysis reveals F13A1 as a novel susceptibility gene for severe acne in Chinese Han cohort</b>	
Wen-Juan Wu, Xing-Yan Yang, Li He	
CS01-9	7
<b>Sequential cyclic change of hair roots in the mechanism of diffuse alopecia areata revealed by dermoscopy</b>	
Xing-Qi Zhang, Yan-Ting Ye, Yu-Qing Yang, Hui Cao, Zhao-Hui Zhu, Kevin McElwee, Yun-Xia Lin	
CS01-10	8
<b>Follicular occlusion tetrad: a rare case report</b>	
Rui-Xue Xu, Jiu-Hong Li, Tian-Hua Xu, Qian An	
<i>CS02 Bacterial and Viral Infection</i>	
CS02-1	8
<b>Novel strategies for the prevention of HIV transmission</b>	
Tatsuyoshi Kawamura	
CS02-2	8
<b>Clinical analysis for 401 cases of herpes zoster patients in hospital</b>	
Hui-Lan Yang	
CS02-3	9
<b>Induction of plasmablasts by follicular helper T cell-CXCL13 axis upon occurrence of herpes zoster</b>	
Kensuke Fukuchi, Takatoshi Shimauchi, Kazuki Tatsuno, Yoshiki Tokura	
CS02-4	9
<b>A clinical observation of 32 cases of leg erysipelas treated with Chinese medicine wet-dressing and ozone spa</b>	
Mei-Rong Bai	
CS02-5	9
<b>Epidemiology and clinical profile of cutaneous warts in Chinese college students: a cross-sectional and follow-up study</b>	
Jian-Jun Liu	
CS02-6	10
<b>Vacuum sealing drainage as an auxiliary therapy for complicated giant skin abscesses: a series of case studies</b>	
Qin Qin	
CS02-7	10
<b>Ecthyma gangrenosum caused by Burkholderia cepacia in immunocompetent man: the first case report in Chinese and English literature</b>	
Lan Zhang	
CS02-8	11
<b>Multiple misdiagnosis of diffuse multibacillary leprosy patient with Lucio's phenomenon and positive anticardiolipin antibodies</b>	
Wei Gao	
CS02-9	11
<b>Skin rash in a child with infectious mononucleosis</b>	
Xian-Hua Jin	

CS02-10		12
<b>A case of abdominal subcutaneous abscess caused by Eikenellacorrodens</b>		
Xiao Zhang		
<i>CS03 Basic Research</i>		
<i>Basic Research 1</i>		
CS03-1-1		12
<b>Immune mechanism of allergen-specific immunotherapy in atopic dermatitis</b>		
Kwang-Hoon Lee		
CS03-1-2		13
<b>Role of keratin 24 in human epidermal keratinocytes</b>		
Min Zheng, Min Min, Xi-Bei Chen, Ping Wang, Jia-Qi Chen, Wei Li, Sui-Qing Cai, Xiao-Yong Man		
CS03-1-3		13
<b>A novel antimicrobial (host defense) peptide AMP-IBP5 activates human keratinocytes</b>		
Francois Niyonsaba, Panjit Chieosilapatham, Ko Okumura, Shigaku Ikeda, Hideoki Ogawa		
CS03-1-4		13
<b>A virulence factor of <i>Candida albicans</i>, Candidalysin, modulates human keratinocyte functions</b>		
Pu Song, Francois Niyonsaba, Ko Okumura, Shigaku Ikeda, Hideoki Ogawa		
CS03-1-5		14
<b>Effects of platelet-rich plasma on proliferation and migration in human dermal fibroblasts</b>		
Ye-Ji Jang, Kwang-Joong Kim		
CS03-1-6		14
<b>Local hyperthermia promotes the healing of sporotrichosis by activating CRAC channel of immunocytes in lesions</b>		
Zheng-Xiu Li, Xing-Hua Gao		
CS03-1-7		15
<b>Over-expressed TNFAIP3 promotes melanoma growth, invasion, migration and immune escape function by activating STAT3/PD-L1 pathway</b>		
Jin-Yuan Ma, Wei-Nan Guo, Sen Guo, Shi-Yu Wang, Tian-Wen Gao, Chun-Ying Li		
CS03-1-8		15
<b>CX3CR1-deficiency alleviates skin inflammation by blocking Ly6Chi monocytes migration and Langerhans cell local repopulation</b>		
Ying-Ping Xu		
CS03-1-9		16
<b>1, 25-(OH)<sub>2</sub> Vitamin D3 inhibits autologous DNA immune complex induced dendritic cells activation and modulates Treg/Th17 immune balance in systemic lupus erythematosus</b>		
Li Luo, Chuan-Chuan Lin, Zhi-Qiang Song, Fei Hao, Na Luo		
CS03-1-10		16
<b>Genome-wide screening and function analysis of long noncoding RNA expression in CD4+ T cells of systemic lupus erythematosus</b>		
Hai-Hong Qin, Jin-Ran Lin, Xiao Liu, Jin-Hua Xu		
<i>Basic Research 2</i>		
CS03-2-1		17
<b>Research on susceptible genes and immunopathogenesis of cutaneous adverse drug reaction in Chinese Hans</b>		
Xiao-Qun Luo		
CS03-2-2		17
<b>Susceptibility of epithelial derived stationary tumor cells to hyperthermia</b>		
Xing-Hua Gao		

CS03-2-3	18
<b>Photodynamic therapy against both methicillin-resistant Staphylococcus aureus and Pseudomonas aeruginosa</b>	
Tomoko Hasuike, Toshiyuki Ozawa, Bumpei Katayama, Sakiko Kuzuya, Nobuko Ito, Kunio Awazu, Daisuke Tsuruta	
CS03-2-4	18
<b>17<math>\beta</math>-estradiol affects hair follicle growth via cannabinoid receptor type 1</b>	
Sayaka Togo, Koji Sugawara, Daisuke Tsuruta	
CS03-2-5	19
<b>Adiponectin promotes caspase-14 expression in normal human epidermal keratinocytes</b>	
Ga-Ram Ahn, Sun-Young Choi, Min-Jeong Kim, Ji-Yeon Hong, Kui-Young Park, Seong-Jun Seo	
CS03-2-6	19
<b>Targeting phosphorylation of p21 activated kinase 1 at Thr423 induces cell cycle arrest and apoptosis in cutaneous T-cell lymphoma cells</b>	
Yi-Meng Wang, Wei-Wei Li, Qian Zhang, Chun-Lei Zhang	
CS03-2-7	20
<b>Roles of the TGF-<math>\beta</math>1/Smad signalling pathway in the development of UV-induced cutaneous squamous cell carcinoma</b>	
Juan Zhang, Hui Jiang, Dan Xu, Wen-Juan Wu, Hong-Duo Chen, Li He	
CS03-2-8	20
<b>Role of thrombospondin 1 (TSP1) mediated by mouse skin-derived precursors (mSKPs) in the anti-UVB radiation damage via TGF-<math>\beta</math>/Smad pathway</b>	
Yi-Ming Li, Li-Dan Xiong, Jie Tang, Li Li	
CS03-2-9	21
<b>Hydrogen gas inhalation protects against cutaneous ischemia/reperfusion injury in a mouse model of pressure ulcer</b>	
Wei Fang, Gui Wang, Tang-LuYan, Hui-Lin Su, Hu-Yan Chen, Wan-Qing Liao, Jin-Hua Xu	
CS03-2-10	21
<b>Genome-wide analysis of protein-coding variants in leprosy</b>	
Hong Liu, Zhen-Zhen Wang, Xi-An Fu, Fang-Fang Bao, Yong-Hu Sun, Chuan Wang, Gong-Qi Yu, Fu-Ren Zhang	
 <i>CS04 Benign and Malignant Tumors</i>	
 <i>Benign and Malignant Tumors 1</i>	
CS04-1-1	22
<b>Role of fusion genes in the pathogenesis of cutaneous tumors</b>	
Masatoshi Jinnin	
CS04-1-2	22
<b>pH-triggered synergistic chemo-photothermal therapy to inhibit progression of melanoma by eliciting antitumor immunity</b>	
Ya-Min Zhang	
CS04-1-3	23
<b>Clinical analysis of calcifying epithelioma: a retrospective study during 11 years period</b>	
Shohei Igari	
CS04-1-4	23
<b>Integration of periostin, M2 macrophages and integrin in human and murine melanoma progression</b>	
Fumitaka Ohno, Takeshi Nakahara, Makiko Nakahara, Satoshi Nunomura, Kenji Izuhara, Masutaka Furue	
CS04-1-5	24
<b>Clinical analysis of 70 cases of eccrine poroma</b>	
Takashi Ito, Tatuhiko Mori, Mikio Otuka, Toshiyuki Yamamoto	
CS04-1-6	24
<b>Light responsive biodegradable transformer for theranostics of melanoma</b>	
Zhi-Ming Li	

CS04-1-7	24
<b>Wolf's isotopic response of cutaneous leukemic infiltration following herpes zoster: a case report</b>	
Hui Ke, Xiao-Pan Gong, Hui-Chun Su, Wei Su, Bo Cheng	
CS04-1-8	25
<b>Effect and underlying mechanisms of monocyte-derived tolerigenic langerhans cells on the development and metastasis of melanoma</b>	
Jun Li, Qiu-Ying Ma, Ming Yang, Juan Tao	
CS04-1-9	25
<b>Expression of activity-induced cytidine deaminase in melanoma and its correlation with the BRAF mutation and clinicopathological features</b>	
Xiao-Jing Kang, Yan-Jun Wang, Ying Wang, Jiao-Peng Lyu	
CS04-1-10	26
<b>Gardener fibroma with localized hypertrichosis: report of a Chinese case without the APC gene mutation</b>	
Xue-Yan Yao, Dan-Hua Shen, Dong-Dong Che, Guang-Dong Wen, Jian-Zhong Zhang, Cheng Zhou	
<i>Benign and Malignant Tumors 2</i>	
CS04-2-1	26
<b>Clinical and histopathologic features of nail unit melanoma</b>	
Dong-Youn Lee	
CS04-2-2	27
<b>Study of novel targeting molecules for melanoma treatment</b>	
Cong Peng	
CS04-2-3	27
<b>Efficacy of low dose 5-fluorouracil/cisplatin therapy for invasive extramammary Pagets disease</b>	
Hiroshi Kato, Motoki Nakamura, Ai Horio, Akimichi Morita	
CS04-2-4	28
<b>Two cases of malignant melanoma treated with BRAF/MEK inhibitors followed by premeditated switch to anti-programmed death-1 antibody</b>	
Asuka Amano, Satoshi Tsuboi, Takanobu Kan, Maiko Tanaka, Mikio Kawai, Michihiro Hide	
CS04-2-5	28
<b>TET2-mediated DNA hydroxymethylation epigenetically sensitizes melanoma to all-trans retinoic acid via BMI-1 pathway</b>	
Song-Mei Geng, Yan-Ting Liu, Zhao-Wei Chu, Su-Yun Xu, Xin-Yue Zhang, George Murphy, Christine Lian	
CS04-2-6	29
<b>Research progress of traditional Chinese medicine in treating skin malignant melanoma</b>	
Sheng-Yuan Hua, Wei-Wei Mao, Xin Li, Bin Li, Xiao Miao, Jie Chen	
CS04-2-7	29
<b>Application of surgery combined with photodynamic therapy in intractable skin tumors</b>	
Shuang Zhao, Kai Huang, Jin-Mao Li, Jiang-Lin Zhang, Jun-Jie Luo, Ming-Liang Chen, Li-Xia Lu, Fang-Fang Li, Juan Su, Wei Shi, Xiang Chen	
CS04-2-8	30
<b>DNA damage-inducible transcript 4 is an innate guardian for human squamous cell carcinoma and an molecular vector for anti-carcinoma effect of 1, 25(OH)2D3</b>	
Heng-Guang Zhao, Xiao Zhang	
CS04-2-9	30
<b>Cutaneous T cell lymphomas from Shanghai: clinicopathological correlation</b>	
Ye-Qiang Liu	
CS04-2-10	31
<b>Clinical and pathological analysis of cutaneous Rosai-Dorfman disease</b>	
Ying zhang, Hao Chen, Wei Zhang, Xiu-Lian Xu, Yi-Qun Jiang, Xue-Si Zeng, Jian-Fang Sun	

## *CS05 Bullous Diseases & Metabolic and Endocrine Disorders*

CS05-1	31
<b>Interaction between subcutaneous fatty tissue and hair follicles: hair growth-promoting effects of adiponectin</b>	
Ohsang Kwon	
CS05-2	32
<b>Application of topical treatments in pemphigus patients and its underlying mechanisms</b>	
Hui-Jie Yuan, Meng Pan	
CS05-3	32
<b>Risk factors of relapse in patients with pemphigus herpetiformis: a retrospective cohort study</b>	
Li Li	
CS05-4	33
<b>Indirect immunofluorescence on salt-split skin as a first choice in bullous pemphigoid diagnosis</b>	
Sui-Ying Feng	
CS05-5	33
<b>Identification of immunodominant Th2 cell epitopes in Chinese bullous pemphigoid patients</b>	
Jie-Yu Zhang	
CS05-6	34
<b>Azathioprine induced myelosuppression in two pemphigus vulgaris patients with homozygous polymorphism of NUDT15</b>	
Yen-Chi shi, Ya-Ru Zou	
CS05-7	34
<b>Diabetic ulcer and Acquired perforating dermatosis associated with diabetes: a case report</b>	
Tong Xiao	
CS05-8	35
<b>Effort of thalidomide on OSMR-related pathway in keratinocyte</b>	
Qian An	
CS05-9	35
<b>A case of disseminated cutaneous tophus</b>	
Jian-Xin Xia	
CS05-10	36
<b>Acquired reactive perforating collagenosis: one case report and review of the literature</b>	
Jun-Feng Yu	

## *CS06 Collagen Diseases and Vasculitis & Photodermatoses*

CS06-1	36
<b>B lymphocyte abnormalities in scleroderma</b>	
Shinichi Sato	
CS06-2	36
<b>Clinical characteristics, genotype - phenotype correlations and founder effects of xeroderma pigmentosum in Japan</b>	
Shinichi Moriwaki	
CS06-3	37
<b>Solar urticaria: clinical characteristics, treatment and prognosis in a series of 28 Japanese patients</b>	
Shinya Imamura, Yoshiko Oda, Ken Washio, Kaori Nakata, Atsushi Fukunaga, Chikako Nishigori	
CS06-4	37
<b>Clinicopathological study of eosinophilic fasciitis</b>	
Mariko Seishima, Hirofumi Niwa	

CS06-5	38
<b>Lupus erythematosus tumidus: retrospective study of 29 cases</b> Xiao-Lei Liu	
CS06-6	38
<b>Retrospective case-control study on dermatomyositis with interstitial lung disease in KMC</b> Dan-Qi Deng	
CS06-7	39
<b>Clinical research of combined leukotrienes receptor antagonist and total glucosides of paeony for treating henoch-schönleinpuroura with kidney damage</b> Yi-Ming Wang	
CS06-8	39
<b>Osler's nodes in systemic lupus erythematosus: a case report</b> Qing-Rong Ni	
CS06-9	40
<b>Dermatomyositis with secondary probable Evans syndrome in a 15-year-old girl: a case report</b> Jian-Kang Yang	
CS06-10	40
<b>Effect of AGEs on cathepsin expression in UVA-irradiated dermal fibroblasts</b> Jian-Kang Yang	
<i>CS07 Cosmetic Dermatology</i>	
CS07-1	41
<b>Laser treatment in scar management</b> Sang Ju Lee	
CS07-2	41
<b>A new whitening agent for the treatment of chloasma</b> Li He	
CS07-3	42
<b>MicroRNA-224-5p induced claudin-5 deficiency contributed defective permeability barrier in sensitive skin</b> Li Yang, Wen-Juan Wu, Le-Chun Lyu, Ying Tu, Hua Gu, Mao-Qiang Man, Li He	
CS07-4	42
<b>Seasonal variation of skin photoreaction and biophysical properties</b> Chao Yuan, Yi-Yi Zhang, Li Ma	
CS07-5	43
<b>Efficacy and safety of intense pulsed light in the treatment of inflammatory acne vulgaris with a novel filter</b> Juan Du, Sun-Yi Chen, Zhong Lu	
CS07-6	43
<b>A novel fractional radio-frequency technology for the treatment of keratosis pilaris: a pilot study</b> Yu-Xi Dong	
CS07-7	44
<b>Mottled hypopigmentation induced by Q-switched 1064 nm Nd: YAG Laser in the treatment of melasma: a two year follow-up study</b> Hua-Xu Liu	
CS07-8	44
<b>Cathepsin D contributes to the accumulation of advanced glycation end products during photoaging</b> Qing-Fang Xu, Xin-Ya Xu, Yue Zheng, Yun-Fen Huang, Yu-Ying Li, Chun Lu, Wei Lai	
CS07-9	45
<b>Epidermal barrier function and redox biochemistry are sensitive to exposure to air pollution</b> Nan Huang, Ting-Yan Mi, Si-Min Xu, Miao Miao, Guo-Qiang Chen, Tony Dadd, Ye Xu, Ya-Ping Du, Jane Matheson, Jian-Ming Lee, Uma Santhanam	

CS07-10		45
<b>Clinical application of hydroporation transdermal delivery system combined with new IPL technology</b>		
Dan Jian		
 <i>CS08 Dermatitis and Skin Allergy</i>		
CS08-1		46
<b>Recent Progress in atopic dermatitis</b>		
Norito Katoh		
CS08-2		46
<b>Skin microbiota and the metabolites in atopic dermatitis</b>		
Wei Li		
CS08-3		46
<b>Drug-induced hypersensitivity syndrome (DIHS) accompanied by rhabdomyolysis</b>		
Yasushi Ototake, Eri Morishita, Maki Sato, Masumi Kono, Kazuko Nakamura, Michiko Aihara, Takeshi Kambara		
CS08-4		47
<b>Heterozygote deficiency of the keratinocyte proline-rich protein enhances the skin barrier by increasing lysophosphatidic acid receptor expression</b>		
Ai Matsuno, Ayumi Yoshizaki, Hirofumi Nakanishi, Shumpei Ishikawa, Masashi Fukayama, Shinichi Sato		
CS08-5		47
<b>Clinical characteristics and genetic variations in atopic dermatitis patients with and without allergic contact dermatitis</b>		
Solam Lee, Hye-young Wang, Eunjung Kim, Hyun Jee Hwang, Eunhee Choi, Hyeyoung Lee, Eung Ho Choi		
CS08-6		48
<b>Hypereosinophilic syndrome associated with type I neurofibromatosis</b>		
Yu-Qing Hu		
CS08-7		48
<b>Characterization of the autoimmune subtypes and immunologic features of chronic spontaneous urticaria</b>		
Peng Geng		
CS08-8		49
<b>Patch test in Chinese patients with cosmetic allergy to cosmetic series and products</b>		
Ying Zou		
CS08-9		49
<b>Differentiation and polarization of T cells stimulated by TGM3</b>		
Hui-Chun Su		
CS08-10		50
<b>Study on images of common facial inflammatory skin diseases and AI-assisted diagnosis</b>		
Xiao-Ming Liu		
 <i>CS09 Fungal Infection</i>		
CS09-1		50
<b>Korean guideline for the diagnosis and treatment of onychomycosis</b>		
Jin Park		
CS09-2		51
<b>CARD9 deficiency and genetic susceptibility of dematiaceous fungal infection</b>		
Ruo-Yu Li		
CS09-3		51
<b>Evaluation of relationships between onychomycosis and vascular diseases using sequential pattern mining</b>		
Chul Hwan Bang, Ji Hyun Lee		

CS09-4	52
<b>Epidemiologic feature and clinical analysis of HIV/AIDS with Penicilliosis Marneffeii in Yunnan Province</b>	
Yu-Ye Li, Teng-Yan Li	
CS09-5	52
<b>Integration of quantitative proteomic and transcriptomic analysis in macrophage stimulated by mannoprotein of <i>Candida albicans</i></b>	
Hang-Hang Jiang, Rui-Qun Qi, Yu-Xiao Hong, Song Zheng, Xing-Hua Gao	
CS09-6	53
<b>Dermoscopy and fungal fluorescence staining detect infant kerion caused by <i>Arthroderma otae</i> with successful treatment of itraconazole</b>	
Bin Yin, Meng-Sha Ma, Li-Xin Fu, Qiao-Mei Sun, Wen-Ju Wang, Xue-Ying Liu	
CS09-7	53
<b>Silencing SOCS1 in dendritic cells protects from systemic <i>Candida albicans</i> by enhancing Th1-cell differentiation</b>	
Dong-Mei Shi, Wei-Da Liu	
CS09-8	54
<b>Comparative genomics and transcriptomics analyses of the fungal pathogen <i>Prototheca zopfii</i></b>	
Xuan-Hao Zeng	
CS09-9	54
<b>Establishment of a diagnostic system for cutaneous infectious granuloma</b>	
Ying-Gai Song, Xiao-Wen Wang, Ruo-Jun Wang, Wei Liu, Jin Yu, Ai-Ping Wang, Ruo-Yu Li	
CS09-10	55
<b>Ecological, phenotypic and phylogenetic analysis of <i>Cryptococcus gattii</i> in Southeastern China</b>	
Min Chen, Wan-Qing Liao	
 <i>CS10 Genetic Disorders</i>	
CS10-1	55
<b>Hereditary hypopigmentary disorders: a better understanding from a genetic view</b>	
Tamio Suzuki	
CS10-2	55
<b>HLA-B*13:01 screening to Prevent Dapsone Hypersensitivity Syndrome</b>	
Hong Liu	
CS10-3	56
<b>Neurofibromatosis type 1-associated serious hemorrhagic events successfully treated with steroid pulse therapy</b>	
Tatsuya Ogawa, Yosuke Ishitsuka, Sae Inoue, Yasuhiro Fujisawa, Manabu Fujiomoto	
CS10-4	56
<b>Permanent alteration of Abcc6 in vivo CRISPR-Cas9 genome editing</b>	
Da-Long Zhi	
CS10-5	57
<b>Novel MBTPS2 mutation in a Chinese pedigree with ichthyosis follicularis, alopecia, and photophobia syndrome</b>	
Zhou Yang	
CS10-6	57
<b>Non-invasive prenatal diagnosis for Neurofibromatosis type 1 of paternal mutation by next-generation sequencing</b>	
Jian-Ying Liang	
CS10-7	58
<b>Exome Sequencing in a Chinese Family Identifies TTC9 Mutation associated with Keratitis-Ichthyosis-Deafness (KID) syndrome</b>	
Xiao-Hua Wang	
CS10-8	58
<b>GWAS follow-up study discovers a novel genetic signal on 10q21.2 for atopic dermatitis in Chinese Han population</b>	
Xin-Ying Cai	

CS10-9	59
<b>Clinical and histopathological analysis of Blau Syndrome and Early-onset Sarcoidosis</b>	
Yi Zheng	
CS10-10	59
<b>Establishment of a sample database and clinical management system of hereditary epidermolysis bullosa in the West China Hospital</b>	
Guo-Qin Liu	
 <i>CS13 Pigmentary Disorders</i>	
CS13-1	60
<b>Melasma: updates and perspectives</b>	
Kyoung-Chan Park	
CS13-2	60
<b>Blocking the oxidative stress-induced CXCL16-CXCR6 chemotaxis to develop new targeted treatments for vitiligo</b>	
Chun-Ying Li	
CS13-3	60
<b>Natural course of nevus depigmentosus: long-term follow-up of 92 cases</b>	
Jae Min Sung, Ji Young Yang, Soo Hyun Kwon, So Min Kim, Jung Min Bae, Hee Sun Chang, Hyub Kim, Hee Young Kang, Eun-So Lee, You Chan Kim	
CS13-4	61
<b>Combination of 308-nm excimer laser with topical pimecrolimus for the treatment of childhood vitiligo</b>	
Hui-Lan Yang	
CS13-5	61
<b>Necroptosis is a novel way of melanocyte death in oxidative stress-related vitiligo pathogenesis</b>	
Bo-Wei Li	
CS13-6	62
<b>Mussel adhesive protein inhibits post-inflammatory hyperpigmentation through wound healing and attenuation of inflammation</b>	
Zi-Qi Liu	
CS13-7	62
<b>Plasma miRNAs profiles in Uygur patients with nonsegmental vitiligo</b>	
Xiao-Jing Kang	
CS13-8	63
<b>Analysis of the effect of different doses of oral tranexamic acid in treating melasma: a multicenter prospective study</b>	
Chen-Yu Zhu	
CS13-9	63
<b>Novel heterozygous missense mutation in the exon 6 of the POFUT1 gene in Dowling-Degos disease</b>	
Ying-Da Wu	
CS13-10	64
<b>Impaired ACtivation of SIRT3 contributes to oxidative-stress induced mitochondrial dysfunction: a possible mechanism underlying the degeneration of melanocytes in vitiligo</b>	
Xiu-Li Yi	
 <i>CS14 Psoriasis</i>	
CS14-1	64
<b>Role of Il-17-producing cells in the pathogenesis of psoriasis</b>	
Tomotaka Mabuchi	
CS14-2	65
<b>Study on the efficacy and mechanism of matrine and its combination of acitretin for psoriasis</b>	
Wei-Wei Jiang	

CS14-3	65
<b>Fn14 deficiency ameliorates psoriasis-like skin disease in a murine model</b>	
Ling-Ling Peng	
CS14-4	66
<b>Immunological memory exists in the recurrent lesion and nonrecurrent skin after remission in psoriatic patients</b>	
Zhu Shen	
CS14-5	66
<b>Decrease of Galectin-3 in keratinocytes: a potential diagnostic marker and a critical contributor to the pathogenesis of psoriasis</b>	
Zhen-Rui Shi	
CS14-6	67
<b>Up-regulated E3 Ligase Trim21 contributes to keratinocytes proliferation and inflammation in psoriasis</b>	
Lu-Ting Yang	
CS14-7	67
<b>MiRNA-17-92 promotes proliferation and chemokine production of keratinocytes: implication for the pathogenesis of psoriasis</b>	
Sen Guo	
CS14-8	68
<b>CD8<math>\alpha</math>+T cells contribute to psoriasis by producing pro-inflammatory cytokin</b>	
Yang-Yang Zhang	
CS14-9	68
<b>Acitretin Down-regulates the Number of MDSCs in the Treatment of Psoriasis Vulgaris</b>	
Pan-Pan Liu	
CS14-10	69
<b>Study on the interferential and regulative role of chemokine-like factor 1-C-terminal peptides in psoriasis</b>	
Yi Zheng	
CS14-11	69
<b>HMGB1 inhibitor effectively alleviates psoriasis-like lesions and inflammatory cytokines in K14-VEGF transgenic mouse</b>	
Li-Xin Fu	
 <i>CS15 Sexually Transmitted Diseases</i>	
CS15-1	70
<b>Sexually transmitted viral diseases (genital herpes and human papilloma virus infection)</b>	
Eun-So Lee	
CS15-2	70
<b>Neurosyphilis: A neglect and persistent challenging complicated disease</b>	
Ping-Yu Zhou	
CS15-3	71
<b>Early congenital syphilis</b>	
Hong-Shuai Wang, Jun Li	
CS15-4	71
<b>Characteristics and geographical distribution of HIV/AIDS among adults over 50 years old in Ruili City from 1989 to 2016</b>	
Si-Le Li, Zhou-Lin Li, Er-Da Zheng, Chen-Bo Wang, Bang Liu, Xia Peng, Hong Li	
CS15-5	72
<b>Effects of 5-aminolevulinic acid photodynamic therapy for condylomata acuminata on local immunity</b>	
Fang Xie, Hai-Sheng Yu, Dong Wang, Yan-Ming Li, Hai-Ying Wen, Jiang-Bo Du, Wei Ba, Xian Meng, Jie Yang, Heng-Jin Li, Cheng-Xin Li, Li-Guo Zhang, Hua Zhao, Xiang-Dong Fang	

CS15-6	72
<b>Blinding ocular syphilis in China: A retrospective cohort study</b>	
Xin Gu, Ping-Yu Zhou	
CS15-7	73
<b>Levels of NF-L and pNF-H in cerebrospinal fluid and blood of patients with neurosyphilis</b>	
Wen-Hui lun, Dong-Mei Xu, Sheng-Nan Cai	
CS15-8	74
<b>Strong immunogenicity of Neisseria gonorrhoeae MtrE surface expressed Loop 2 fusion protein in vitro</b>	
Rui Han, Si-Yuan Sun, Hao Cheng, Stijn van der Veen	
CS15-9	74
<b>Regulatory role of estradiol to IL-36-JAK-STAT through REA/HDACs in pathogenesis mechanism of asymptomatic gonorrhea</b>	
Rong-Yi Chen, Shuang Liu, Fang Zhang, Hui-Zhi Yang, Zhi-Hua Wu	
CS15-10	75
<b>Tea polyphenols inhibits cell growth and induces apoptosis on HPV16 subgenes immortalized human cervical epithelial cells</b>	
Quan Chen, Zi-Yin Mo, Hua-Ping Li, Ri-Dong Yang, Hui-Lan Zhu	
 <i>CS16 Therapies</i>	
CS16-1	75
<b>Treatment of focal infection in several inflammatory skin diseases</b>	
Toshiyuki Yamamoto	
CS16-2	76
<b>TWEAK/Fn14 signals mediate burn wound repair</b>	
Yue-Min Xia	
CS16-3	76
<b>Low-dose thalidomide treatment for a generalized cutaneous Rosai-Dorfman disease</b>	
Jia-Yi Ying	
CS16-4	76
<b>Lichen aureus with hands and feet involvement responding well to tripterygium glycosides</b>	
Jing Sun	
CS16-5	77
<b>Successful treatment of infliximab in a patient with Reiter's syndrome: a case report</b>	
Xing-Xiao Lin	
CS16-6	77
<b>Febrile ulceronecrotic Mucha-Habermann disease in an 11-year-old boy responding to lymphoplasmapheresis and methotrexate</b>	
Ben Wang	
CS16-7	77
<b>Clinical efficacy and safety of using Minocycline in the treatment of unstable vitiligo</b>	
Jin Wang	
CS16-8	78
<b>Successful treatment of SAPHO syndrome with thalidomide: a case report</b>	
Qian-Nan Xu	
CS16-9	78
<b>Livedoid vaculopathy: clinical features and treatment as experienced in 24 Chinese patients</b>	
Sui-Ying Feng	
CS16-10	79
<b>Propranolol as an antiangiogenic agent for the treatment of Parkes-Weber syndrome</b>	
Jian-Yun Lu	

## *CS17 Miscellaneous*

CS17-1	79
<b>Cutaneous extranodal NK cell lymphomas in Korea</b> Mi Woo Lee	
CS17-2	80
<b>Transcription factor and aberrant epigenetic modifications in lupus T cells</b> Ming Zhao	
CS17-3	80
<b>Clinical experience of the treatment using negative pressure wound therapy (NPWT): a study of 34 cases</b> Akihito Maki, Hiroshi Kato, Ai Horio, Motoki Nakamura, Akimiti Morita	
CS17-4	81
<b>Dermatologic disorders in patients with multiple myeloma: a retrospective cohort study from Korean experience</b> Yu Ri Woo, Seung Hwan Baek, Yu Jin Jung, Jong Sic Kim, Ji Hong Ihm, Miri Kim, Hyun Jeong Park	
CS17-5	81
<b>First diagnosed nodal marginal zone lymphoma in excessive insect bite reaction: a case report</b> Si Jiang	
CS17-6	82
<b>RNA-seq analysis reveals unique transcriptome signatures in dermatomyositis</b> Ke Xue	
CS17-7	82
<b>A rare case of eosinophilic granuloma associated with adult xanthogranuloma</b> Li-Yun Zheng	
CS17-8	82
<b>Application of photodynamic therapy in some refractory skin diseases</b> Shuang Zhao	
CS17-9	83
<b>Demographic factors and prevalence of rosacea in dermatology outpatients in Shanghai</b> Qian-Li Yang	
CS17-10	84
<b>Cutaneous Rosai-Dorfman with acne-like appearance: a case report</b> Hong-Mei Zhou	

## **Poster**

### *PO01 Appendages' Diseases*

PO01-003	85
<b>Skin-colored to yellowish subungual flat plaque in a 16-year-old girl</b> Hyung Jin Park, Ye-Jin Lee, Chan-Yang Lee, Hye-Jin Ahn, Ki-Heon Jeong, Mu-Hyoung Lee, Min Kyung Shin	
PO01-007	85
<b>Efficacy and safety of tofacitinib in patients with recalcitrant alopecia totalis</b> Yong-Yon Won, Joong-Woon Choi, Ye-Jin Lee, Bark-Lynn Lew, Woo-Young Sim	
PO01-008	86
<b>Dermoscopic findings in acute and diffuse total alopecia</b> Yong-Yon Won, Joong-Woon Choi, Ye-Jin Lee, Bark-Lynn Lew, Woo-Young Sim	
PO01-013	86
<b>Clinical findings of onychophagia in Korean patients: A single centre experience</b> Dong young Roh, Woo-Il Kim, Min-Young Yang, Won-Ku Lee, Tae-Wook Kim, Sung-Min Park, Hyun-Joo Lee, Gun-Wook Kim, Hoon-Soo Kim, Hyun-Chang Ko, Byung-Soo Kim, Moon-Bum Kim	

PO01-017	87
<b>Clinical and histopathological characteristics of linear alopecia of the scalp in Korea: A single centre experience</b>	
Hak-Jun Kim, Hyang-Suk Ryu, Gun-Wook Kim, Hyun-Chang Ko, Hoon-Soo Kim, Byung-Soo Kim, Moon-Bum Kim	
PO01-022	87
<b>Disseminated keratosis follicularis squamosa</b>	
Wenrui Li, Xiulian Xu, Yiqun Jiang, Guoyi Zhang, Chengrang Li	
PO01-031	87
<b>A case of Trichorrhexis Nodosa and scanning electron microscopy study</b>	
Guanzhao Liang, Weida Liu	
PO01-033	88
<b>Epidemiologic and clinical features of hidradenitis suppurativa in Korea: A nationwide multicenter study</b>	
Dae Hun Suh, Jungyoon Moon, Ji Hoon Yang, Young Chul Kye, Kwang Joong Kim, Myeung Nam Kim, Young Suck Ro, Mi Youn Park, Hyo Hyun Ahn, Mi Woo Lee, Weon Ju Lee, Ju Hee Lee, Jee Bum Lee, Min Soo Jang, Yu Sung Choi, You Won Choi	
PO01-001	88
<b>Prostanoids and hair follicles</b>	
Xuegang Xu, Hong-Duo Chen	
PO01-002	89
<b>Child with early phase of extrinsic atopic dermatitis: A case report</b>	
Yang Han	
PO01-004	90
<b>Longitudinal melanonychia to treatment with hydroxychloroquine in systemic lupus erythematosus</b>	
Si Zhang, Cheng Zhou, Lin Cai, Jian-Zhong Zhang	
PO01-005	90
<b>Baicalin facilitates anagenic hair growth through regulating immune privilege of hair follicle in C57/BL6 mice</b>	
Fei Xing, Tie-Chi Lei	
PO01-006	91
<b>Efficacy of compound betamethasone combined with compound glycyrrhizin in the treatment of severe active alopecia areata: a randomized controlled study</b>	
Jun Zhao, You-Yu Sheng, Qin-Ping Yang	
PO01-009	91
<b>A collision tumor: Nevus lipomatosus cutaneous superficialis and steatocystoma simplex</b>	
Tong Xiao, Yan-Fei Zhang, Biao Yu, Yi-Guo Feng	
PO01-010	92
<b>Eccrine chromhidrosis</b>	
Lina Xu, Jian-Jun Qiao, Hong Fang	
PO01-011	92
<b>Analysis of clinical and pathological features of follicular sebaceous cystic hamartoma</b>	
Qiang Zhao, Song-Mei Geng, Hong-Mei Zhou, Qian Shang	
PO01-012	93
<b>A case report of Olmsted syndrome</b>	
Li-Wen Zhang	
PO01-014	93
<b>A case of inverted follicular keratosis and literature review</b>	
Yan Cheng, Yi-Ming Wang	
PO01-015	94
<b>An evaluation of the efficacy of potent corticosteroids occlusion in children with severe type of alopecia areata</b>	
Yanting Ye, Hui Cao, Yun-Xia Ling, Zi- Zeng, Jian Yang, Yu-Qing Yang, Xing Zhang	

PO01-016	94
<b>Multiple application of intramuscular compound betamethasone in the treatment of alopecia areata</b>	
Yan-Ting Ye, Fang Wang, Hui Cao, Yun-Xia Ling, Jian Yang, Yu-Qing Yang, Shi-Ling Qi, Shui-Feng Li, Xing-Qi Zhang	
PO01-018	95
<b>Analysis of drug resistance genes of <i>Corynebacterium acnes</i> in acne patients in Dongguan area</b>	
Huijing Tang, Jian-Bo Ruan	
PO01-019	95
<b>Primary cutaneous mucinous carcinoma: A case report</b>	
Min Lin, Jin-wen Huang, Fang Fang, Chao Ji, Bo Cheng	
PO01-020	95
<b>A case of Rombo syndrome with trichoepithelioma and differential diagnosis of atrophoderma vermiculatum</b>	
Jian-Ying Liang, Yi-Feng Guo, Hui Zhang, Cheng Ni, Yan Gu, Dan Deng, Xue Zhang, Hong Yu, Zhi-Rong Yao	
PO01-021	96
<b>A case of mixed tumor</b>	
Ru-Xin Zhao, Min Lin, Xiu-Cheng Wang, Chao Ji, Bo Cheng	
PO01-023	96
<b>Relationship between rosacea and dietary factors: A multi-center retrospective case-control survey</b>	
Ji Li, Xin Yuan, Ben Wang, Dan Jian, Wei Shi, Ying-Xue Huang, Hong-Fu Xie	
PO01-024	97
<b>Acne vulgaris patients have significantly altered gut microbiota and microbial metabolites in adolescents but not in adults</b>	
Yongqiong Deng, Xia Xiong	
PO01-025	97
<b>Effect of rbFGF on repair of rosacea</b>	
Yang Luo, Xiu-Li Luan, Yu-Jiao Sun, Li Zhang, Jian-Hong Zhang, Lan-Xi Wu	
PO01-027	98
<b>Trichofolliculoma: A case report</b>	
Meng-Ying Duan, qian Zhang	
PO01-028	98
<b>Acne flare following treatment: investigating the difference of gene expression in peripheral blood</b>	
Yuchen Jiang, Wei Lai	
PO01-029	99
<b>Efficacy of supernatant of hAMSCs in a mouse model of <i>Propionibacterium acnes</i>-induced inflammation.</b>	
Ni Zeng, De-Yu Li, Bi-Lan Cao	
PO01-030	99
<b>Pretreatment to cyst by fire needle improves effect of photodynamic therapy for cystic acne</b>	
Jianwen Ren, Wei-Hui Zeng, Liang Wang, Jing Zhang	
PO01-032	99
<b>Treatment of acne with new supramolecular salicylic acid and literature review</b>	
Li-Ying Tang, Jing Xue, Xi-yuan Zhou	
<i>PO02 Bacterial and Viral Infection</i>	
PO02-004	100
<b>Cutaneous <i>Mycobacterium massiliense</i> infection caused by skin coining “Gua Sha”</b>	
Jin Park, Eui-Sung Jung, Sang-Woo Park, Hyun-Bin Kwak, Su-Kyung Park, Seok-Kweon Yun, Han-Uk Kim	

PO02-005	100
<b>A case of cutaneous infection caused by <i>Mycobacterium gordonae</i></b>	
Chan-Yang Lee, Ye-Jin Lee, Hyung-Jin Park, Hye-Jin Ahn, Min Kyung Shin, Ki-Heon Jeong	
PO02-017	100
<b>Cutaneous <i>Mycobacterium massiliense</i> infection associated with bee venom acupuncture</b>	
Kyung muk Jeong, Seung Hwi Kwon, Yoo Sang Baek <sup>1</sup> , Jiehyun Jeon, Chil Hwan Oh, Hae Jun Song	
PO02-001	101
<b>A case of Kaposi varicelliform eruption in adults and literature review</b>	
Zhang-Yu Bu, Ren-Ping Xie	
PO02-006	101
<b>Case series of <i>Mycobacterium abscessus</i> complex cosmetic surgical site infections in China</b>	
Wei Gao, Hongsheng Wang	
PO02-009	102
<b>A case of ulcerative scrofuloderma misdiagnosed as necrobiotic xanthogranuloma for 9 years cured in 3 months</b>	
Yi-Guo Feng	
PO02-016	102
<b>Evaluation of serum-based exosomal miRNAs as potential diagnostic biomarkers for leprosy</b>	
Wei Gao, Hongsheng Wang	
PO02-018	102
<b>Cutaneous infections due to nontuberculous mycobacteria: a retrospective study of 95 cases</b>	
Wei gao, Hongsheng Wang	
PO02-025	103
<b>Progress of treatment of cutaneous nontuberculous mycobacterial infections</b>	
Wei Gao, Hongsheng Wang	
PO02-003	103
<b><i>Listeria monocytogenes</i> meningitis in a young girl with systemic lupus erythematosus</b>	
Xianqiong Huang	
PO02-006	104
<b>Skin ulcer on the penis: a case report</b>	
Abdulrahman Amer, Li-Jiu Hong	
PO02-008	104
<b>Effect of facial microflora of pregnant women on several common skin diseases and skin barrier function</b>	
Yu Huang, Xing-Hua Gao	
PO02-011	104
<b>A giant verruca plantaris treated with acitretin</b>	
Xiang Luo	
PO02-012	105
<b>Herpes zoster infection with sepsis</b>	
Na Cao	
PO02-013	105
<b>A report of two cases of misdiagnosis of leprosy</b>	
Han Li	
PO02-014	105
<b>A case of Kaposi varicelliform eruption in adults</b>	
Lisha He	
PO02-015	105
<b>A case report of erysipeloid</b>	
Qiao-Mei Sun, Tao Chen, Li-Xin Fu, Hao Yang, Jin Wang	
PO02-019	106
<b>A case of misdiagnosis of adult infectious mononucleosis</b>	
Xia Chen	

PO02-020	106
<b>Infant infected chickenpox after being in more frequently contact with the member of the same family who is diagnosed as herpes zoster: A case report</b>	
Jiang-Mei Xu	
PO02-021	106
<b>A case of mycobacterial infection after facial cosmetic injection</b>	
Zhen Zhang, Chao-Ying Gu	
PO02-022	107
<b>Tuberculous chancre on the left knee in a 3-year-old child</b>	
Xin Tian, Li-Dan Zhang	
PO02-023	107
<b>Report a case of ecthyma by the infection of <i>Staphylococcus Aureus</i> and <i>Candida Albicans</i></b>	
Pei-Qiu Zhu	
PO02-024	108
<b>A case report of faical infection caused by <i>Serratia marcescens</i></b>	
Yong-Xuan Hu, Zu-Hao Mao, Kang-Xing Liu, Yan-Qing Hu, Xian-Yi Zhou	
 <i>PO03 Basic Research</i>	
PO03-004	108
<b>Using the patent instrument to measure hypersensitivity ear swelling reactions in mice</b>	
Huiwen Deng, Yi Ren, Yuzhe Sun, Yali Gao, Ruiqun Qi, Xinghua Gao	
PO03-006	109
<b>DJ-1 protects against oxidative stress in melanocytes by regulating mitochondrial function</b>	
Man Li, Fang Wang, Juan Du, Lijuan Wang, Xiaolan Ding	
PO03-013	109
<b>Significance and main methods of hair morphological research</b>	
Jialong Chen, Hongwei Yan, Zhendong Wei, Ruiqun Qi, Xinghua Gao, Hongduo Chen	
PO03-015	110
<b>Protective roles of transcription factor NFIL3/E4BP4 in systemic lupus erythematosus</b>	
Zijun Wang, Jinghua Yin, Ming Zhao, Qianjin Lu	
PO03-027	110
<b>Mouse model supports gene “X” as a new susceptibility gene for alopecia areata</b>	
Qiao-Feng Zhao, Atsushi Takagi, Etsuko Komiyama, Nagisa Yoshihara, Mai Fujisawa, Shigaku Ikeda	
PO03-035	110
<b>Ionizing radiation, but not ultraviolet radiation, induces mitotic catastrophe in mouse epidermal keratinocytes</b>	
Zhi-Cao Yue	
PO03-039	111
<b>Citron essential oils alleviate mediators related to rosacea pathophysiology in epidermal keratinocytes</b>	
Jeon Hyeon Woo, Seung-Chul Lee, Jee-Bum Lee	
PO03-040	111
<b>Air-borne pollutants and other urban-rural differences in life-style and environment are associated with skin appearance and health</b>	
Nan Huang, Renjie Chen, Tingyan Mi, Robert Velthuisen, Ye Xu, Haidong Kan	
PO03-041	112
<b>Air pollution (ozone &amp; particulates) and impact on skin</b>	
Mei Yu, Kelly Dong, James McCarthy, Edward Pelle, Jiabin Sun, Lieve Declercq, Thomas Mammone, Nadine Pernodet	
PO03-042	112
<b>Defect of BDH2 promotes DNA hypomethylation in CD4+ T cells of systemic lupus erythematosus</b>	
Ming Zhao, Mengying Li, Xiaofei Gao, Jing Wang, Huihui Zhang, Haijing Wu, Qianjin Lu	

PO03-063	113
<b>AQP3 involves in skin wound healing maybe through interacting with Coronin 1c</b> Fangfen Liu, Yingzi Liu, Hongfu Xie	
PO03-064	113
<b>Involvement of AQP3 in TGF-<math>\beta</math> induced migration of epidermal cell migration via downstream Smad3 phosphorylation during skin wound healing</b> Fangfen Liu, Yingzi Liu, Hongfu Xie	
PO03-067	114
<b>MiRNAs involved in ultraviolet radiation induced bystander effects</b> Bingrong Zhou, Dan Luo	
PO03-071	114
<b>Suitable endogenous control for the quantification of serum exosome microRNAs</b> Wei Gao, Hongsheng Wang	
PO03-077	114
<b>Silver nanoparticles induce Egr-1 dependent psoriasin expression via the ERK and p 38 pathways</b> Chang Min Kim, Sang Hoon Jeong, Hana Lee, Sang Wook Son	
PO03-088	115
<b>GATA6 overexpression promotes tumor progression in cutaneous T-cell lymphoma</b> Hiroaki Kamijo, Tomomitsu Miyagaki, Naomi Shishido-Takahashi 1, Rina Nakajima, Tomonori Oka, Hiraku Suga, Makoto Sugaya, Shinichi Sato	
PO03-089	115
<b>Frequency of 6p25.3 translocation in primary cutaneous anaplastic large cell lymphoma; comparison with other CD30-positive cutaneous T-cell lymphomas</b> Hiroaki Kamijo, Makoto Sugaya, Tomomitsu Miyagaki, Naomi Shishido-Takahashi, Tomonori Oka, Hiraku Suga, Shinichi Sato, Seiji Sakata, Kengo Takeuchi	
PO03-093	116
<b>Four cases of advanced melanoma treated by sequential administration of nivolumab and dabrafenib/ trametinib therapy</b> Taku Fujimura, Yumi Kambayashi, Lyu Chunbing, Kayo Tanita, Yota Sato, Akira Hashimoto, Setsuya Aiba	
PO03-094	116
<b>RALDH1-producing dermal dendritic cells regulate skin fibrosis via retinoic acid-mediated regulatory T cell induction</b> Shunsuke Miura, Yoshihide Asano, Ryosuke Saigusa, Takashi Yamashita, Takashi Taniguchi, Takehiro Takahashi, Yohei Ichimura, Tetsuo Toyama, Ayumi Yoshizaki, Takafumi Kadono, Shinichi Sato	
PO03-105	117
<b>Sociodemographic characteristics of childhood Hand Foot Mouth Disease: First report on age and sex differentiation from Bangladesh</b> Md Azraf Hossain Khan, Anwar Kazi Selim, Md. Ahasan Ali	
PO03-110	117
<b>Phenotype of dermal dendritic cells is regulated by Fli1 and its deficiency promotes dermal fibrosis in bleomycin-treated mice</b> Shunsuke Miura, Yoshihide Asano, Ryosuke Saigusa, Takashi Yamashita, Kouki Nakamura, Megumi Hirabayashi, Takuya Miyagawa, Ayumi Yoshizaki, Maria Trojanowska, Shinichi Sato	
PO03-001	118
<b>MHY1485 ameliorates UV-induced skin cell damages via activating mTOR-Nrf2 signaling</b> Chao Ji, JinWen Huang, Bo Cheng	
PO03-002	118
<b>Regulatory role of lncRNA CD27-AS1 on CD27 contributes to melanomagenesis</b> Jingjing Ma, Peng Xu, Sen Guo, Qiong Shi, Tian-Wen Gao, Chun-Ying Li	
PO03-003	119
<b>Expression and significance of RASSF1A in psoriasis</b> Jinjing Jia, Yan Zheng	

PO03-005	119
<b>TRPM2 links oxidative stress to mitochondria-dependent apoptosis of melanocytes</b> Pan Kang, Wei-Gang Zhang, Shu-Li Li, Xu-Guang Chen, Gang Wang, Tian-Wen Gao, Chun-Ying Li	
PO03-007	120
<b>ALA-PDT suppressing the cell growth by Akt-/Erk-mTOR-p70 s6k pathway in human SZ95 sebocytes in vitro</b> Jiang Tuo, Wen-Jie Liu	
PO03-008	120
<b>Downregulation of miR-633 activated AKT/mTOR pathway by targeting AKT1 in lupus CD4+ T cells</b> Shuang Chen, Jin-Hua Xu	
PO03-009	121
<b>Role of Nrf2 in modulating H2O2-induced oxidative stress and Nrf2 target antioxidant gene expression in human melanocytes</b> Qing-Rong Ni, Shu-Li Li, Ting-Ting Cui, Xiu-Li Yi, Pan Kang, Chun-Ying Li, Zhe Jian	
PO03-010	121
<b>Susceptibility of epithelial derived stationary tumor cells to hyperthermia</b> Zheng-Xiu Li, He-Xiao Wang, Xing-Hua Gao	
PO03-012	122
<b>Anti-Gal3 antibody induces skin vasculitis by promoting IL-1<math>\beta</math> production through NLRP3 pathway on endothelial cells in systemic lupus erythematosus</b> Zhen-Rui Shi, Liang-Chun Wang, Guo-Zhen Tan, Yu-Ping Zhang, Lin Zheng, Liu-Yu Chen	
PO03-016	122
<b>Cthrc1 plays bidirectional roles in the process of keloid by reversing the TGF-<math>\beta</math> signaling as a negative feedback factor and modulating YAP subcellular location</b> Mengjie Zhao, Si-Yuan Chen, Xiao- Qu, Bilal Abdul-fattah, Ting Lai, Meng Xie, Shi-Di Wu, You-Wen Zhou, Chang-Zheng Huang	
PO03-017	123
<b>IgE recognition of bullous pemphigoid (BP)180 and BP230 in senile atopic dermatitis patients with intense pruritus</b> Jing Sun	
PO03-018	124
<b>TNF-<math>\alpha</math> and TRAIL are potential inducers of necroptosis in HaCaT cells through activation of ROS</b> Yong-Sheng Yang, Yan-Hong Shou, Zhen Zhang, Xiao-Qun Luo, Sheng-An Chen, Feng Li, Xiao-Hua Zhu, Jin-Ran Lin, Hai-Hong Qin, Juan Du, Sun-Yi Chen, Jin-Hua Xu	
PO03-019	124
<b><math>\beta</math>-catenin activation in hair follicle dermal stem cells induces skin fibrosis and ectopic hair follicle</b> Gang Ma, Yi-xin Tao, Lin He	
PO03-020	124
<b>Study of cell phenotype and molecular mechanisms under different culture conditions</b> Yiming Li, Li-Dan Xiong, Jie Tang, Li Li	
PO03-022	125
<b>Influence of <i>Malassezia furfur</i> culture supernatant on <i>Staphylococcus epidermidis</i>: From the point of view of proteome, acetylome and succinylome</b> Yang Han, Rui-Qun Qi, Xing-Hua Gao	
PO03-023	125
<b>Expression and function of circRNAs in the senescence of human fibroblasts induced by UVB irradiation</b> Chen-Chen Si, Bing-Rong Zhou, Dan Luo	
PO03-024	126
<b>Serum exosomal shuttled miRNAs mediate intercellular communication and exosomes induce pro-inflammatory immune response in systemic lupus erythematosus</b> Li-Na Tan, Hai-Jing Wu, Ming Zhao, Qian-Jin Lu	

PO03-025	127
<b>Anti-inflammatory effect of quercetin in IFN-<math>\gamma</math>/TNF-<math>\alpha</math>-treated HaCaT cells</b>	
Dian-Dong Hou, Rui-Qun Qi, He-Xiao Wang, Yu-Zhe Sun, Hong-Duo Chen, Xing-Hua Gao	
PO03-026	127
<b>Paeoniflorin depresses human T lymphocytes activation via inhibition of I<math>\kappa</math>B<math>\alpha</math>-NF-<math>\kappa</math>B signaling pathways, p38 kinase phosphorylation and interferon-<math>\gamma</math> production</b>	
Ao-Xue Wang, Yun-Ying Zhang, Xiao-Yi Qi, Jing Wang, Yan-Nan Ma	
PO03-028	128
<b>Candida cell wall mannoprotein synergizes with LPS to induce RAW264.7 inflammation through the jak2 / stat3 signaling pathway</b>	
Xing-Xing Bie, Rui-Qun Qi, Xing-Hua Gao, Hong-Duo Chen	
PO03-029	128
<b>Carbamazepine-10, 11-epoxide activates AhR-MLKL to induce NLRP3 inflammasome upregulation in keratinocytes and regulate CD8+ T-cell skin trafficking in SJS and TEN</b>	
Chen Zhang, Gang Wang, Meng Fu	
PO03-030	129
<b>Changes of cathepsins in hair follicle cycle</b>	
Yue Zheng, Jing-Zhu Bai, Wei Lai	
PO03-031	129
<b>Autophagic effect of UVB on SLE and the role of miR-125b-5p in this process</b>	
Wenting Cao, Dan-Qi Deng	
PO03-032	130
<b>DNAJA4 deficiency enhances NF-kappa B-related growth arrest induced by hyperthermia in human keratinocytes</b>	
Yu-Zhe Sun	
PO03-033	131
<b>Oxidative stress induced melanocytes release of HMGB1 is critical for keratinocyte production of IL8 and CXCL16 in vitiligo</b>	
Tingting Cui	
PO03-034	131
<b>Study on blood levels and clinical significance of IL-36 subfamily cytokines in patients with systemic lupus erythematosus</b>	
Shaozhen Mai, Qing Guo	
PO03-036	132
<b>Concomitant NOTCH1 and TP53 (p53) expression in HPV positive/negative epithelial cells during hyperthermia</b>	
Rui-Qun Qi	
PO03-037	132
<b>Sirt3-induced macrophage polarization through autophagy in promoting <i>Mycobacterium leprae</i> latent infection</b>	
De-Gang Yang, Yue-Long Ma, Qin Pei	
PO03-038	133
<b>Interaction of Cathepsins and non-coding RNA in human skin photoaging mechanisms</b>	
Yue Zheng, Wei Lai, Ya- Peng	
PO03-043	133
<b>Research progress on the effect of light on stem cell differentiation</b>	
Mingzhu Jin	
PO03-044	134
<b>Mechanism of SO<sub>2</sub>-induced oxidative and inflammatory injury in human skin keratinocytes</b>	
Junqin Liang	
PO03-045	134
<b>Expression of thermoTRPs in melanoma cells and the influence of menthol and 2-APB on cell proliferation and cell cycle of A2058 cells</b>	
Xue-Jing Tan, Wei Cheng, Fang Liu	

PO03-046	135
<b>Inhibition of the hedgehog pathway leads to antifibrotic effects in dermal fibrosis</b> Huali Cao, Jiong Zhou, Xi-Bei Chen, Jian-Qiang Yang, Jia-Qi Chen, Wei Li, Sui-Qing Cai, Min Zheng, Xiao-Yong Man	
PO03-047	135
<b>Effects of active ingredients of Chinese safflower on melanogenesis in human melanoma cells</b> Caixia Tu, Ting Wang, Rongxin Zhang, Yahui Chen	
PO03-048	136
<b>Rottlerin as a therapeutic approach in psoriasis: Evidence from in vitro and in vivo studies</b> Min Min, Bing-Xi Yan, Ping Wang, Jia-Qi Chen, Wei Li, Sui-Qing Cai, Min Zheng, Xiao-Yong Man	
PO03-049	136
<b>Comparative expression of PEDF and VEGF in human epidermal keratinocytes and dermal fibroblasts: from normal skin to psoriasis.</b> Bing-Xi Yan, Yu-Xin Zheng, Wei Li, Jia-Qi Chen, Jiong Zhou, Sui-Qing Cai, Min Zheng, Xiao-Yong Man	
PO03-050	137
<b>Molecular mechanisms of BCL6 regulating miR-142-3p/5p expression in CD4+ T cells and its role in the pathogenesis of systemic lupus erythematosus</b> Shu Ding, Qing Zhang, Shuang-Yan Luo, Qing-Hai Zeng, Li-Na Tan, Jin-Rong Zeng, Ming Zhao, Qian-Jin Lu	
PO03-051	137
<b>Suppressor of fused inhibits skin wound healing</b> Bei-bei Yang, Bing-Xi Yan, Hua-Li Cao, Jia-Qi Chen, Wei Li, Min Min, Ping Wang, Sui-Qing Cai, Min Zheng, Xiao-Yong Man	
PO03-052	138
<b>Study on the role of ACTL6a in psoriasis and wound</b> Bing-Xi Yan, Min Min, Bei-Bei Yang, Ping Wang, Jia-Qi Chen, Wei Li, Sui-Qing Cai, Min Zheng, Xiao-Yong Man	
PO03-053	139
<b>Mechanical tension enhances cell proliferation and collagen synthesis and promotes expressions of integrin <math>\alpha\beta3</math> in Human keloid-derived mesenchymal stem cells</b> Hai-feng Song, Tao Liu, Wen-ting Wang, Ya-Jie Lv, Tian-Yu Cao, Yan-Guo Zhang	
PO03-054	139
<b>6-Hydroxydopamine promotes keratinocyte damage and depigmentation in mouse.</b> Cuiping Guan , Wen Xu, Liu-Yu Li, Ai-E Xu	
PO03-056	140
<b>An improved method for detecting varicella-zoster virus and the preliminary application</b> Tingting Zhong, Yang Xu	
PO03-057	140
<b>Effects and mechanism of SPRY1 on the innate immunity system in psoriasis</b> Ping Wang, Yuan Zhou, Min Zheng, Xiao-Yong Man	
PO03-058	141
<b>Expression of death receptor 3 (DR3) on peripheral blood mononuclear cells in patients with psoriasis vulgaris</b> Lin Li	
PO03-059	141
<b>Total glucosides of paeony restores CD4+CD25+Treg cells through demethylation of the foxp3 promoter region in patients with Henoch-Schonlein purpura</b> Ye Shu, Rong Xiao	
PO03-060	142
<b>Investigation of 5-Fluorouracil and Ultraviolet B co-inducing lupus-like mouse model and its molecular mechanisms</b> Ya-Xiong Den, Di Long, Hai-Jing Wu, Qian-Jin Lu	

PO03-061	142
<b>Pathogenic role of 5-hydroxymethylcytosine in skin lesions of lupus</b>	
Qianwen Li	
PO03-062	143
<b>Identification and validation of differential expressed proteins in serum of chronic spontaneous urticaria patients with different duration of wheals</b>	
Yan-Yun Cao, Shun-Ming Xu	
PO03-065	143
<b>Ganoderma lucidum polysaccharides reduce melanocytes melanogenesis by inhibiting paracrine effect of keratinocytes and fibroblasts via IL6/ STAT3/FGF2 signaling pathway</b>	
Ling Jiang, Jin-Hua Huang, Jian-Yun Lu, Shuang-Hai Hu, Shi-Yao Pei, Yu-Jie Ou Yang, Yu-Fang Ding, Chu-Han Fu, Qing-Hai Zeng, Jing Chen	
PO03-066	144
<b>Salvianolic acid B attenuates experimental SSc inflammation and fibrosis by protecting endothelial cells against oxidative stress injury</b>	
Qing-Mei Liu, Xiang-Guang Shi, Lu-Yan Tang, Jia-Ying Lu, Jin-Hua Xu, Jiu-Cun Wang, Wen-Yu Wu	
PO03-068	144
<b>Study on anti-fibrotic mechanism of salvianolic acid B</b>	
Jiaying Lu	
PO03-069	145
<b>NLRP3 inflammasome mediated interleukin-1beta production in cancer-associated fibroblast contributes to ALA-PDT for Cutaneous squamous cell carcinoma</b>	
Shu Nie, Shan-shan Li, Guo-Long Zhang, Jie Ji, Lu-De Zhu, Pei-Ru Wang, Xiu-Li Wang, Hong-Wei Wang	
PO03-070	145
<b>Effect of 4-hydroxyphenyl-retinamide on type I pro-collagen and MMP-1 mRNA expression of keloid fibroblasts</b>	
Mei-lan Nan, Zhe-Hu Jin, Cheng-Long Jin	
PO03-072	146
<b>Photothermal-photodynamic therapy induced by Au<sub>25</sub>(Capt)<sub>18</sub>-nanocluster under single NIR irradiation for the treatment of cutaneous squamous cell carcinoma</b>	
Pei Liu, Lei Shi, Hai-Yan Zhang, Fu-He Zhang, Long Wen, Wei-Tao Yang, Jia-Ni Yu, Bing-Bo Zhang, Xiu-Li Wang	
PO03-073	146
<b>Tranexamic acid suppresses the activity of epidermal melanocytes of mice after ultraviolet B ear irradiation</b>	
Zhuren Ruan, Shan Jiang	
PO03-074	147
<b>Short-term ozone exposure stimulates insulin growth factor receptor (IGF1R) and epidermal growth factor receptor (EGFR) crosstalk to promote diabetic wound healing</b>	
Jian-Yun Lu, Xiao-Qi Wang, Li-Hua Gao, Jin-Hua Huang, Amy Paller	
PO03-075	147
<b>Ozonated oil suppresses and ameliorates allergic contact dermatitis induced by 2, 4-dinitrochlorobenzene in guinea pig</b>	
Jian-Yun Lu, Zhi-Bing Fu, Jie Zhang, Ya-Ping Xiang, Li-Hua Gao, Xiao-Qi Wang	
PO03-076	148
<b>Up regulation of <math>\beta</math>-catenin delay UVB-induced senescence in human skin fibroblasts by antioxidant stress and suppressing p16INK4a</b>	
Li-Ming Tian	
PO03-078	148
<b>Treatment and mechanism of alpha 1 antitrypsin on guinea pig skin photoaging model</b>	
Chunli Yao, Xue Li, Shuang Wang	
PO03-079	149
<b>Expression of IL-17 in different organs of MRL/lpr mice</b>	
Lihua Zeng, Xue-Biao Peng	

PO03-080	149
<b>Expression of IL-17-producing T lymphocytes in peripheral blood of patients with systemic lupus erythematosus and their correlations with disease activity</b>	
Lihua Zeng, Xue-Biao Peng	
PO03-082	150
<b>Long noncoding RNA associated-competing endogenous RNAs in UVB-induced premature senescence of human dermal fibroblasts</b>	
Na Ni, Dan Luo	
PO03-083	150
<b>Langerhans cells, dermal Langerin(+) dendritic cells and monocyte-derived dendritic cells contribute differentially to atopic dermatitis in mice via modulating TSLP production in early stage</b>	
Zhen-Lai Zhu, Chun-Ying Xiao, Chen Zhang, Er-Le Dang, Yu-Feng Liu, Gang Wang, Wei Li	
PO03-084	151
<b>Study of correlation between HLA allele and leprosy in Guizhou province</b>	
Jie Fang	
PO03-085	151
<b>Study on mechanism of atenolol in treatment of infantile hemangioma</b>	
Keyao Li, Jian-Ping Tang	
PO03-086	151
<b>Effect and mechanism of IL-33 on skin wound healing in diabetic mice</b>	
Rong-Guo He, Kang Zeng	
PO03-087	152
<b>Comparison of the effect of propranolol and itraconazole on biological behavior of HUVEC</b>	
Yi Zhao, Hong Liang	
PO03-090	152
<b>Pruritus: progress toward pathogenesis and treatment</b>	
Jing Song, Jian-Qiao Zhong, Xia Xiong, De-Hai Xian, Rui Lai, Ling-Yu Yang	
PO03-091	153
<b>Mechanism about treatment of nourishing the liver and kidney to regulate melanocyte apoptosis induced by oxidative damage</b>	
Hui-Na Zhang, Chang-Liang Mao, Ping Li, Ju-Sheng Wang	
PO03-092	154
<b>miRs-103/107 regulate autophagy in the epidermis</b>	
Sijia Wang	
PO03-095	154
<b>Serum levels of brain-derived neurotrophic factor are associated with depressive symptoms in patients with acne vulgaris</b>	
Hong-yi He, Yong-qiong Deng, Yong-mei Liao, Deng-mei Xia, Ai-guo Xu, Jing Fang, Jin-lan Tian, Yang Xu, Chang-qiang Li	
PO03-096	155
<b>Regulation of hair follicle development by exosomes derived from dermal papilla cells</b>	
Lijuan Zhou, Zhong-Fa Lyu	
PO03-097	155
<b>IL-17R adaptor Act1 D10N missense variant impairs CD40 signaling in human B-cells</b>	
Ning Yu, James	
PO03-098	156
<b>Long Noncoding RNA RP11-670E13.6 Activate DAG/PKC Signaling pathway by inhibiting Diacylglycerol kinase epsilon expression in UVB Damaged Human Dermal Fibroblasts</b>	
Mengna Li	
PO03-099	156
<b>Toll-like receptor 4 attenuates a murine model of atopic dermatitis through inhibition of langerin-positive DCs migration</b>	
Lin Lin, Le-Dong Sun	

PO03-100	157
<b>Diclofenac potentiates vemurafenib-induced apoptosis in human melanoma cells</b> Zheng Li	
PO03-101	157
<b>LncRNA UCA1 inhibits the melanogenesis by inhibiting cAMP/CREB signaling pathway.</b> Shi-Yao Pei, Jing Chen, Jian-Yun Lu, Shuang-Hai Hu, Ling Jiang, Yu-Jie Ouyang, Chu-Han Fu, Yu-Fang Ding, Qing-Hai Zeng, Jin-Hua Huang	
PO03-102	158
<b>Dendrobium candidum polysaccharide stimulates melanocytes melanogenesis by paracrine effect of keratinocytes and activate cAMP/PKA and MAPK signaling pathway</b> Shuanghai Hu, Jin-Hua Huang, Jian-Yun Lu, Ling Jiang, Shi-Yao Pei, Yu-Jie Ouyang, Yu-Fang Ding, Qing-Hai Zeng, Jing Chen	
PO03-103	158
<b>Establishment of SPINK6 knockout mouse model</b> Rong-Bing Zheng, Yuan-Yuan Wu, Jia-Yi Shen, Dan Li, Xiao-Xiao Chen, Fang-Yuan Bao, Wei-Jun Xia, Zhi-Hong Wu	
PO03-104	159
<b>Establishing filaggrin-2 gene knockout mice</b> Yuan-Yuan Wu, Rong-Bing Zheng, Jia-Yi Shen, Dan Li, Xiao-Xiao Chen, Fang-Yuan Bao, Wei-Jun Xia, Zhi-Hong Wu	
PO03-106	159
<b>TUG1 negatively regulates melanogenesis</b> Chu-Han Fu, Qing-Hai Zeng, Jin-Hua Huang, Shi-Yao Pei, Yu-Jie Ouyang, Shuang-Hai Hu, Ling Jiang, Yu-Fang Ding	
PO03-107	160
<b>Traditional Chinese medicine SK promotes wound healing by up regulation of TGF-<math>\beta</math>1 expression</b> Yufang Ding, Jinhua Huang, Shuanghai Hu, Ling Jiang, Aiyuan Guo, Chuhan Fu, Shiyao Pei, Yujie Ouyang, Xiaojiao Zhao, Li Lei, Jing Chen, Qinghai Zeng	
PO03-108	160
<b>Therapeutic role of Sphingosine Kinase 1 (sphk1) inhibitor in the passive cutaneous anaphylaxis (PCA) model</b> Si Yan, Wang-Qing Chen, Ni Tang, Man-Yun Mao, Jie Li, Xiang Chen	
PO03-109	161
<b>Network integration of parallel metabolic and transcriptional data reveals metabolic modules in azithromycin induced macrophage M2 polarization</b> Jiu Yi	
<i>PO04 Benign and Malignant Tumors</i>	
PO04-006	161
<b>A case of HMB-45 and Melan-A negative melanoma</b> Won Choi, Kyoung Geun Lee, Joon Soo Lim, Ki Bum Myung, Hyung Jin Hahn, Seung Hyun Cheong	
PO04-007	162
<b>A case of trichoblastoma with plasma cell infiltration</b> Won Choi, Kyoung Geun Lee, Joon Soo Lim, Ki Bum Myung, Hyung Jin Hahn, Seung Hyun Cheong	
PO04-008	162
<b>A case of adenoid type basal cell carcinoma on philtrum</b> Won Choi, Kyoung Geun Lee, Joon Soo Lim, Ki Bum Myung, Seung Hyun Cheong, Hyung Jin Hahn	
PO04-009	162
<b>A case of extramammary Paget's disease restored with modified keystone flap</b> Minsung Kim, Hoon Choi, Bongseok Shin, Chanho Na	

PO04-021	163
<b>Epidermodysplasia verruciformis associated multiple sweat gland tumors and squamous cell carcinomas</b>	
Young Wook Ko	
PO04-022	163
<b>Primitive non-neural granular cell tumor: S-100-negative granular cell tumor</b>	
Dong Seok Shin	
PO04-023	164
<b>Acantholytic mammary Paget's disease with ductal carcinoma <i>in situ</i></b>	
Joung Soo Kim, Ju Wang Jang, Dong Uk Cheon, Sung Soo Han, Hyun-Min Seo, Hee Joon Yu	
PO04-024	164
<b>Clinical study of basal cell carcinoma developed in young adults</b>	
Min-Jeong Kang, Joong-Woon Choi, Ye-Jin Lee, Bark-Lynn Lew, Woo-Young Sim	
PO04-025	165
<b>Molluscum contagiosum occurring in an epidermal cyst developed on frontal hairline</b>	
Sang-Myung Park, Joong-Yoon Choi, Ye-Jin Lee, Bark-Lynn Lew, Woo-Young Sim	
PO04-029	165
<b>CD34 stromal expression is inversely proportional to smooth muscle actin expression and extent of morphea</b>	
Ji Su Lee, Hyun-sun Park, Hyun-Sun Yoon, Jin Ho Chung, Soyun Cho	
PO04-030	166
<b>Angioimmunoblastic T cell lymphoma presenting as Henoch-Schonlein purpura</b>	
Jun Young Lee, Yeong Ho Kim, Seung Ah Yoo, Hyo Jung Kim, Hyun Ji Lee, Yu Mee Song, Ju Hee Han, Chul Hwan Bang, Ji Hyun Lee, Young Min Park	
PO04-032	166
<b>Two cases of lymphomatoid papulosis type D</b>	
Yeong Ho Kim, Yu Mee Song, Hyo Jung Kim, Hyun Ji Lee, Ju Hee Han, Chul Hwan Bang, Ji Hyun Lee, Young Min Park, Jun Young Lee	
PO04-036	167
<b>Two cases of HPV-positive Bowen's disease of nail unit</b>	
Young Min Park, Yeong Ho Kim, Jae Yeon Ryu, Hyun Ji Lee, Yu Mee Song, Ju Hee Han, Chul Hwan Bang, Ji Hyun Lee, Jun Young Lee	
PO04-037	167
<b>A case of extraskeletal chondroma developed on the neck, an unusual location</b>	
Young Min Park, Yeong Ho Kim, Jae Yeon Ryu, Ju Hee Han, Chul Hwan Bang, Ji Hyun Lee, Jun Young Lee	
PO04-060	168
<b>A case of cutaneous interdigitating dendritic cell sarcoma</b>	
Jin Young Song, Kyung Muk Jeong, Yoo Sang Baek, Jiehyun Jeon, Chil Hwan Oh, Hae Jun Song	
PO04-062	168
<b>Solitary juvenile xanthogranuloma: Clinical and dermoscopic findings</b>	
Dae-Lyong Ha, Tae-wook Kim, Sung-min Park, Hyun-joo Lee, Gun-Wook Kim, Hoon-Soo Kim, Hyun-Chang Ko, Byung-Soo Kim, Moon-Bum Kim	
PO04-063	169
<b>Large infantile hemangioma on subfacial location: It may have features of the malignancy on clinical &amp; radiologic findings?</b>	
Hoon-Soo Kim, Dae-Lyong Ha, Woo-Il Kim, Won-Ku Lee, Tae-Wook Kim, Sung-min Park, Hyun-Joo Lee, Gun-Wook Kim, Byung-Soo Kim, Moon-Bum Kim	
PO04-075	169
<b>Pedunculation in squamous cell carcinoma: Is this a predictive factor of less invasiveness?</b>	
Hoon-Soo Kim, Kyung-Nam Bae, Woo-Il Kim, Min-Young Yang, Won-Ku Lee, Tae-Wook Kim, Sung-Min Park, Hyun-Joo Lee, Gun-Wook Kim, Hyun-Chang Ko, Byung-Soo Kim, Moon-Bum Kim	

PO04-076	170
<b>Three zone of purple, red and white patch, a characteristic dermoscopic sign for glomus tumor</b> Geun-Hwi Park, Woo-Haing Sim, Woo-Il Kim, Min-Young Yang, Won-Ku Lee, Tae-Wook Kim, Sung-Min Park, Hyun-Joo Lee, Gun-Wook Kim, Hoon-Soo Kim, Hyung-Chang Ko, Byung-Soo Kim, Moon-Bum Kim	
PO04-077	170
<b>A case of lymphangioma like kaposi sarcoma</b> Chan-Yang Lee, Ye-Jin Lee, Hyung-Jin Park, Hye-Jin Ahn, Min Kyung Shin, Ki-Heon Jeong	
PO04-079	171
<b>Solitary folliculotropic mycosis fungoides presenting as a nodule on the forehead in a young female patient</b> Jiyun Seo, Seung Hwi Kwon, Jiehyun Jeon, Hae Jun Song, Chil Hwan Oh, Yoo Sang Baek	
PO04-108	171
<b>Two cases of congenital Becker's nevus presenting only linear hypertrichosis in children</b> Hyun-Bin Kwak, Eui-Sung Jung, Seok-Kweon Yun, Han-Uk Kim, Jin Park	
PO04-110	172
<b>Three prognostic factors in human melanoma: PD-L1 expression is associated with M2 macrophage infiltration but not with stromal periostin.</b> Fumitaka Ohno, Takeshi Nakahara, Masutaka Furue	
PO04-112	172
<b>Long-term observation of dermoscopic findings in patients with infantile hemangioma</b> Jinnin Masatoshi, Satoshi Fukushima, Hironobu Ihn2	
PO04-114	173
<b>A case of metastatic angiosarcoma on the abdominal wall following pelvic lymph node dissection</b> Hwee Chyen Lee	
PO04-119	173
<b>Cytotoxic mycosis fungoides with clinical features of hypopigmentation and poikiloderma at the same time</b> Shinwon Hwang, Jaemin Kim, Sun Och Yoon, Sang Ho Oh	
PO04-120	174
<b>A case of virginal malignant melanoma treated with Mohs paste therapy</b> Ryo Saito, Mikio Kawai, Kayoko Hirakawa, Michihiro Hide	
PO04-122	174
<b>Successful treatment of mycosis fungoides with mogamulizumab: Report of two cases.</b> Chunbing Lyu, Taku Fujimura, Yumi Kambayashi, Kayo Tanita, Yota Sato, Akira Hashimoto, Setsuya Aiba	
PO04-125	174
<b>Langerhans cell sarcoma on the shoulder</b> Hirofumi Niwa	
PO04-127	175
<b>An extradigital glomus tumor on the back mimicking keloid scar</b> Ha Neul Oh, Sook In Ryu, Bo Young Kim, Ji Hyun Park, Sang Wook Son, Il-Hwan Kim, Hye Rim Moon	
PO04-130	175
<b>A case of cutaneous dermoid cysts on the eyebrow and the neck</b> Koji Nakajima, Mika Takahashi, Ayumi Korekawa, Eijiro Akasaka, Daiki Rokunohe, Takahide Kaneko, Hajime Nakano, Daisuke Sawamura	
PO04-142	176
<b>A case of the rapidly growing fibro-osseous pseudotumor of the digit after trauma</b> In Soon Jung, Sook Jung Yun	
PO04-143	176
<b>Basal cell carcinoma in the genital areas: a report of 11 cases</b> Takashi Ito, Mikio Otuka, Toshiyuki Yamamoto	

PO04-144	176
<b>Thirteen cases of nodular cystic fat necrosis</b> Shohei Igari, Toshiyuki Yamamoto	
PO04-145	177
<b>An unusual case of lymphomatoid papulosis showing histological features of both type D and type E</b> Mikio Ohtsuka, Toshiyuki Yamamoto	
PO04-048	177
<b>Aneurysmal fibrous histiocytoma: clinicopathology analysis of 30 cases of a rare variant of cutaneous fibrohistiocytoma</b> Amelia Nabatanzi	
PO04-109	178
<b>Fifteen cases of pilomatricoma with bullous appearance in children: analysis of the clinical and pathological features</b> Juan Sun, Xiao-Feng Han, Jiao-Sheng Xu, Lin Ma	
PO04-115	178
<b>A case of classical kaposi sarcoma in young men</b> Mei-Ni Deng, Ming-Kai Ji, Bo Cheng	
PO04-135	178
<b>Diagnostic value of immunohistochemical E2-2 expression in blastic plasmacytoid dendritic cell neoplasm (BPDCN)</b> Jing-Shu Xiong, Hai-Sheng Yu, Hao Chen, Xiu-Lian Xu, Wei Zhang, Yi-Qun Jiang, Li-Guo Zhang, Jian-Fang Sun	
PO04-049	179
<b>Extramammary Paget disease: female is more affected than is male?</b> Yi-Guo Feng, Yan Zheng, Song-Mei Geng	
PO04-146	179
<b>Cutaneous and hepatic hemangioma associated with Kasabach-Merritt syndrome in an adult patient with discoid lupus erythematosus</b> Wei Gao, Hong-Sheng Wang	
PO04-002	180
<b>A rare case of sebaceous adenoma on the face and its dermoscopic features</b> Yi-Xin Luo, Jie Liu, Hua Feng	
PO04-001	180
<b>Retrospective reviews of 34 cases of microscopic excision of digital glomus tumor</b> Jian-Bo Zhong, Ping Yang, Li-Ming Wu	
PO04-003	180
<b>Efficacy and safety of interferon-alpha-2a intralesional injection for the treatment of focally recalcitrant mycosis fungoides</b> Shi-Yu Zhang, Da-Wei Han, Tao Wang, Yue-Hua Liu, Hong-Zhong Jin, Kai Fang	
PO04-004	181
<b>TWEAK/Fn14 interaction confers aggressive properties to cutaneous squamous cell carcinoma</b> Guang-Lei Hu, Yu-Min Xia, Wei-Hui Zeng, Li-Li Liang, Ya-Le Liu	
PO04-005	181
<b>Granular cell tumor of skin: presenting as a task</b> Min Wang	
PO04-010	182
<b>Expression and significance of TIPE1 in skin squamous-cell carcinoma</b> Yan Zheng, Pei-Wen Yang, Chang-Ji Li	
PO04-011	182
<b>Skin metastases of lung cancer as the first sign: a case report and review</b> Si Zhang, Xiao-Yang Liu, Heng Zhang, Jun Jia, Lin Cai	

PO04-012	183
<b>Synergistic targeted chemo-photothermal therapy mediated by pH-triggered controlled drug release from ZnO-functionalized Gold@Mesoporous silica to elicit antitumor immunity and inhibit progression of melanoma</b>	
Ya-Min Zhang, Jin-Tao Zhu, Juan Tao	
PO04-013	183
<b>Leclercia adecarboxylata in a patient with malignant solitary fibrous tumor</b>	
Wei-Tao Zhang, Peng-Jun Zhou, Yan-Fei Zhang	
PO04-014	184
<b>Vulvar edema: a sign of metastatic carcinoma</b>	
Yan-Fei Zhang, Tong Xiao, Yi-Guo Feng	
PO04-015	184
<b>Mycosis fungoides palmaris et plantaris: Clinicopathological study and comparison between the Asian and Western patients</b>	
Meng-Jie Zhao, Bilal Abdul-fattah, Yun Zhao, Ling-Yun Zhang, Si-Yuan Chen, Li Zhu, Chang-Zheng Huang	
PO04-016	185
<b>A case of cutaneous plasmacytosis</b>	
Si Zhang, Wen-Hai Li, Yan Zhao, Lin Cai	
PO04-017	185
<b>A case reported of hypopigmented mycosis fungoides in a middle-aged woman misdiagnosed as tinea versicolor</b>	
Guan-Nan Zhu, Meng Fu, Gang Wang	
PO04-018	186
<b>Diagnosis of subclinical extramammary Paget's disease with a combination of non-invasive photodynamic diagnosis and reflectance confocal microscopy: A case report</b>	
Li-Ming Huang, Min-Zhi Wu, Liang Zhao	
PO04-019	186
<b>A case of clear cell acanthoma</b>	
Liang Sun	
PO04-020	186
<b>Study of Mohs microsurgery modified by photodynamic diagnosis combined with ultrasonography to treat extramammary Paget's Disease</b>	
Jia-Ning Yang, Geng-Wu Dai, Dong-Mei Wu, Chuan-Peng Ying	
PO04-027	187
<b>Superficial angiofibroma of the scrotum in a child: A case report and literature review</b>	
Qi Wang, Kuan Lai, Yan Gao, Xin-Yao Zheng, Hai-Mei Lan, Kang Zeng	
PO04-028	187
<b>ATP-citrate lyase contributes to melanoma growth and MAPK inhibition resistance by regulating P300-MITF-PGC1<math>\alpha</math> signaling and mitochondrial function</b>	
Wei-Nan Guo, Jin-Yuan Ma, Sen Guo, Hui-Na Wang, Shi-Yu Wang, Tian-Wen Gao, Chun-Ying Li	
PO04-031	188
<b>Clinicopathological and immunohistochemical analysis of the outpatients diagnosed with tufted angioma at Xijing Hospital</b>	
Xin Su, Qi-Wen Lai, Lei Wang, Cui-Ling Ma	
PO04-033	188
<b>Role of cathepsin D in human skin melanocytes and skin melanoma cells</b>	
Yue Zheng, Qing-Fang Xu, Yun-Fen Huang, Wei Lai	
PO04-034	189
<b>Oncogenomic analysis identifies novel biomarkers for tumor stage mycosis fungoides</b>	
Zheng-Bang Dong, lu Gan, Jian-Fang Sun	
PO04-035	189
<b>Hydroa vacciniforme-like lymphoma: a case report</b>	
Rong-Yi Chen, Hui-Zhi Yang, Wei Wu	

PO04-038	190
<b>Clinical and pathological analysis of 10 patients with microcystic adnexal carcinoma</b> Ying Zhang, Hao Chen, Wei Zhang, Xiu-Lian Xu, Yi-Qun Jiang, Xue-Si Zeng, Jian-Fang Sun	
PO04-039	190
<b>Two cases of metastatic breast cancer with special skin manifestations</b> Yan-Yan Feng	
PO04-040	190
<b>Rosai-Dorfman disease presenting with auricular enlargement as the first manifestation</b> Lu Gan, Wan-Ting Yu, Jian-Fang Sun, Yi-Qun Jiang, Wei-Da Liu	
PO04-041	191
<b>Lymphomatoid papulosis type D: Case reports and literature review</b> Hao-Ze Shi, Hai-Lun Wang, Jing-Shu Xiong, Hao Chen, Jian-Fang Sun	
PO04-042	191
<b>Cutaneous schwannoma on the back with a targetoid clinical feature</b> Li-Qiang Zheng, Wei Ba, Cui-Hao Song, Cheng-Xin Li	
PO04-043	192
<b>One case of primary cutaneous follicle center lymphoma</b> Min Hang, Feng-Mei Zhao, Song Zheng, Bo Li, Long Geng	
PO04-044	192
<b>A case of generalized eruptive histiocytoma</b> Jian-Xin Xia	
PO04-045	192
<b>A case of hepatocellular carcinoma diagnosed as facial cutaneous metastasis survives for 18 months</b> Jing-Xin Zeng, Xi-Bao Zhang, Quan Luo, Hui-Lan Zhu	
PO04-046	193
<b>A case of multiple clear cell acanthoma</b> Sha Zhou, Jian-Jun Qiao, Juan Bai, Yin-Hua Wu, Yun-Lei Pan, Si-Ting Zheng, Hong Fang	
PO04-047	193
<b>Skin metastasis of breast carcinoma a case report</b> Jun-Qin Liang, Wen-Jing Chen	
PO04-050	193
<b>A case of mycosis fungoides in late adolescent</b> Cai-Xia TU, Xiu-Hua Sun, Chao Yu, Xin-Di Mu	
PO04-051	194
<b>A subungual squamous cell carcinoma of the thumb clinically mimicking a glomus tumour</b> Xiu-Fen zheng, Ren-Liang He	
PO04-052	194
<b>Eccrine angiomatous hamartoma with plexiform vascular hyperplasia</b> Qian Shang, Hong-Mei Zhou, Qiang Zhao, Song-Mei Geng	
PO04-053	195
<b>Rosai-Dorfman disease with systemic multiple involvement: A case report.</b> Jiang-Fan Yu, Bing-Si Tang, Ya-Qian Shi, Pu-Yu Zou, Gui-Ying Zhang, Rong Xiao	
PO04-054	195
<b>Influence of acitretin on the growth and apoptosis of fibroblasts of keloid</b> Da-Wei Zhang	
PO04-055	196
<b>Lymphomatoid papulosis with folliculotropism, eccrinotropism and neurotropism</b> Wei Ba, Cheng-Xin Li	
PO04-056	196
<b>A misdiagnosed case of cutaneous Rosai-Dorfman disease</b> Yi-Ming Wang	
PO04-057	196
<b>Clinical and pathological analysis of 19 mycosis fungoides</b> Ling-Yi Zhao, Hui Tang	

PO04-058	197
<b>Squamous cell carcinoma combined with basal cell carcinoma: A case report</b> Yi Zhou	
PO04-059	197
<b>A case report of blastic plasmacytoid dendritic cell neoplasm</b> Yi-Ming Wang	
PO04-061	197
<b>Clinical and pathological analysis of arteriovenous hemangiomas in 13 cases</b> Tian Wang, Ying Guo, Zhuang-Li Tang, Song-Mei Geng	
PO04-064	198
<b>Clinical and pathological study on mixed tumors of the skin</b> Hui-Ying Wan, Chao-Qun Wang	
PO04-065	198
<b>Effects of RNA interference targeting <i>hTERT</i> gene on the proliferation of the human malignant melanoma cell line A375</b> Xiao-Jing Kang, Zulihumaer Mosha, Li Chai, Juan Zhao, Ting-Ting Li, Hong-Juan Wang	
PO04-066	199
<b>Two cases of primary osteoma cutis occurring in children</b> Cui-hao Song, Li-Qiang Zheng, Zi-Gang Zhao, Cheng-Xin Li	
PO04-067	199
<b>Paget's disease of scrotum: Three cases report</b> Xue Chen, Xiao-Yong Man	
PO04-068	200
<b>Natural killer/T-cell lymphoma with hemophagocytic syndrome: A case report</b> Shuo-Shuo Liu, Jian-Zhong Zhang	
PO04-069	200
<b>Solitary Eccrine Syringofibroadenoma of dorsum manus</b> Pei-Mei Zhou	
PO04-070	200
<b>Trichofolliculoma: A clinicopathological analysis of nine cases</b> Qing-Yan Li, Li-Hong Zhao, Song-Mei Geng	
PO04-071	201
<b>SFRP5 inhibits the invasion and migration potential of melanoma cells through Wnt signal pathway</b> Jin Chen, Yang-Mei Chen, Yu Liu, Dao-Pei Zou	
PO04-072	201
<b>Treatment of the ear giant keratoacanthoma with topical imiquimod</b> Shi-Jun Shan	
PO04-073	202
<b>A case of perineal polypoid basal cell carcinoma and review of the literature</b> Xue-Yan Yao, Yan Zhao, Guang-Dong Wen, Jian-Zhong Zhang, Cheng Zhou	
PO04-074	202
<b>Implication of glutathione peroxidase 3 expression in pathogenesis of melanoma</b> Zhehu Jin, Zhen-Long Zheng, Cheng-Long Jin, Lian-Hua Zhu, Ying-Ji Jin, Peng Wang, Lian-Hua Li	
PO04-078	202
<b>Multiple keratoacanthoma centrifugum marginatum: A case report and systemic literature review</b> Yi-Man Wang, Li Li	
PO04-080	203
<b>Study of clinical features, treatment and miRNA expression characteristics of unilesional mycosis fungoides</b> Zai-Yue Shu, Xiao-Yan Shen, Jie Zheng	
PO04-081	203
<b>Three cases report of blastic plasmacytoid dendritic cell neoplasm</b> Xian-Hua Jin, Jian-Xin Xia, Li Chang, Xin-Yi Huang	

PO04-082	204
<b>Giant ulcer type basal cell carcinoma</b> Si-Jian Wen, Yan-Ping Chi, Ting Guo, Wen-Jun Zheng, You-Kun Lin	
PO04-083	204
<b>Photodynamic combined operation for the treatment of skin tumors</b> Wen-Bo Bu, Fang Fang	
PO04-084	204
<b>Eccrine angiokeratomatous hamartoma: A case report</b> Jin-Wen Huang, Chao Ji, Min Lin, Jing Zhang, Ming-Kai Ji, Bo Cheng	
PO04-085	205
<b>A case of simple lymphangioma</b> Min Lin, Jin-Wen Huang, Jing Zhang, Chao Ji, Bo Cheng	
PO04-086	205
<b>A case of cutaneous mastocytoma</b> Min Lin, Jin-wen Huang, Jing Zhang, Chao Ji, Bo Cheng	
PO04-087	205
<b>First reported S-100 negative myxoid neurothekeoma in China: A case report and review of the literatures</b> Jing Zhang, Ming-Kai Ji, Chun-Yan Guo, Chao Ji, Bo Cheng, Jin-Wen Huang	
PO04-088	206
<b>Eight cases of melanoma resection with the width of the cutting edge greater than 2 cm</b> Kai Huang, Shuang Zhao, Jin-Mao Li, Jiang-Lin Zhang, Jun-Jie Luo, Ming-Liang Chen, Li-Xia Lu, Fang-Fang Li, Juan Su, Xiang Chen	
PO04-089	206
<b>A case of diffuse of primary cutaneous diffuse large B-cell lymphoma, leg type</b> Yu Guan, Chao Ji	
PO04-090	206
<b>A case of morpheaform basal cell carcinoma</b> Meng-Ting Lin, Chao Ji, Zi-Ping Zhang, Bo Cheng	
PO04-091	207
<b>Inverted follicular keratosis with prominent clear cell changes: A rare case</b> Jing Zhang, Chao Ji, Bo Cheng, Jin-Wen Huang, Meng-Ting Lin	
PO04-092	207
<b>A case of urticaria pigmentosa limited to forehead</b> Suo Li, Sui-Ying Feng, Zhi-Liang Li, Ke Jing, Rui-Yu Xiang, Han-Mei Zhang	
PO04-093	207
<b>Rare type of Lymphomatic papulosis on the nose: A case report and literature review</b> Hong-Mei Zhou, Qiang Zhao, Qian Shang, Li-Hong Zhao, Tian Wang, Song-Mei Geng	
PO04-094	208
<b>A chinese patient with multiple primary melanomas</b> Xue-Feng Wan, Jun-Wei Fan, Abuliz Palida	
PO04-095	208
<b>Dermoscopic findings of pseudoxanthomatous mastocytosis localized on vulva</b> Qiao-Fei Li	
PO04-096	208
<b>A case of kissing nevus</b> Yan-Qing Wang, Ying Ji, Sen-Lin Dong	
PO04-097	209
<b>A case of Extranodal NK/T-cell lymphoma, nasal type</b> Dan Yan	
PO04-098	209
<b>Spitz nevus with characteristic histopathological and dermoscopic features</b> Zhao-Rui Liu, Jie Liu	

PO04-099	210
<b>Analysis of 622 cases of epithelial skin malignant and premalignant lesions from the southwest China plateau</b>	
Dan Xu, Rui-Xian Niu, Tong-Yun Liu, Juan Zhang, Ying Tu, Li-Lei Su, He Li	
PO04-100	210
<b>Table tennis bat shape flap pedicled with the orbicularis oculi muscle for reconstruction of periorbital skin defect</b>	
Chun-Li Yao, Wen-Juan Yang, Hong-Xia Li, Teng-Fei Liu	
PO04-101	211
<b>A case of Pediatric Rhabdomyosarcoma</b>	
Jian-Xin Xia, Xian-Hua Jin, Xin-Yi Huang, Yan Mou	
PO04-102	211
<b>Skin high-frequency ultrasonographic and dermoscopic features of seborrheic keratosis</b>	
Shi Wang, Jie Liu, Zhao Liu, Cheng Chi, Yue-Hua Liu, Hong-Zhong Jin	
PO04-103	212
<b>Multiple warty dyskeratomas of the scalp: A case report and literature review</b>	
Hong-Mei Zhou, Qiang Zhao, Qian Shang, Li-Hong Zhao, Tian Wang, Song-Mei Geng	
PO04-104	212
<b>Down-regulated TRPV1 expression contributes to melanoma growth via calcineurin-ATF3-p53 pathway</b>	
Yu-Qi Yang, Wei-Nan Guo, Jing-Jing Ma, Chun-Ying Li	
PO04-105	213
<b>Cold atmospheric plasma induces apoptosis of melanoma cells via Sestrin2-mediated iNOS Signaling</b>	
Jun Xia	
PO04-106	213
<b>Application of axial lip myocutaneous flap in reconstructing defect after tumour excision in lip</b>	
Xue Li, Chun-Li Yao, Hong-xia Li	
PO04-107	214
<b>Role of B7-H3 in skin cancer: clinical significance and related mechanism</b>	
Dan Li, Wei Min, Dan Luo1	
PO04-111	214
<b>ALA-PDT for cutaneous squamous cell carcinoma induces the production of CXCL13 chemokine in CAF to exerts antitumor effects</b>	
Lu-De Zhu, Guo-Long Zhang, Pei-Ru Wang, Ling-Lin Zhang, Xiao-Jing Liu, Qian Zhou, Zhe Zheng, Shu-Zhan Shen, Jing-Jun Zhao, Xiu-Li Wang	
PO04-113	215
<b>Reconstruction of full-thickness lower eyelid defects involving more than half of the lower eyelid margin by the transposition skin flap: Case report</b>	
Chun-Li Yao, Wen-Juan Yang, Hong-Xia Li	
PO04-116	215
<b>A case of blastic plasmacytoid dendritic cell neoplasm (BPDCN)</b>	
Ru-Shan Xia, Chang-Rui Jing, Jia Tan, Shi-Qin Tao, Zhi Wang, Li-Jia Yang	
PO04-117	216
<b>Melanoma on previous vitiligo</b>	
Zhong-Shuai Wang, Jun Li	
PO04-118	216
<b>Analysis on clinical and dermoscopic characteristics of 164 acral melanocytic lesions.</b>	
De-Hua Liu, Hang Li1	
PO04-121	216
<b>A case of multiple cutaneous metastases of face from primary hepatocellular carcinoma</b>	
Xiao-Yang Liu, Jiang Jin, Si Zhang, Heng Zhang, Lin Cai, Jian-Zhong Zhang	
PO04-123	217
<b>Report of one case of repairing whole lower lip defect</b>	
Chun-Li Yao, Jaeyeong Oh, Lei Yang, Nan-Nan Hu	

PO04-124	217
<b>A case report: Basal cell carcinoma of the nipple-areola complex in a 65-year-old woman</b> Sheng-Jiang Liang <sup>1</sup> , Ting-Lu Ye, Bo Yu, Ban-Cheng Chen <sup>1</sup>	
PO04-126	218
<b>Apocrine sweat gland adenocarcinoma in the left retroauricular area: A rare case report</b> Xing Liu, Zhang-Hui Yue, Chun Pan, Yan Wang, Xiu-Lian Xu, Fang Fang	
PO04-128	219
<b>Amelanotic acral melanoma in China</b> Hui-Zi Gong	
PO04-129	219
<b>SHARPIN overexpression promotes TAK1 expression and activates JNKs pathway in mycosis fungoide</b> Yan-Hua Liang, Biao Chen	
PO04-131	220
<b>One case of ovarian cancer skin metastasis</b> Hai-Bo Wang, Bo Cheng, Chao Ji, Meng-Ting Lin, Jing Zhang, Jin-Wen Huang	
PO04-132	220
<b>Natural killer/T-cell lymphoma with hemophagocytic syndrome</b> Shuo-Shuo Liu	
PO04-133	220
<b>Photosensitizer-loaded liposomes-gold nanocages for enhanced phototherapy eliciting anti-melanoma immune responses</b> Jun Xie <sup>1, 2, 3</sup>	
PO04-134	221
<b>Squamous cell carcinoma case report</b> Rong-Rong Guo, Bo Cheng, Chao Ji	
PO04-136	221
<b>Carcinoma of the penis: A case report</b> Chun-Shui Yu, Qian Liao, Han-Wen Wang, Lin-Li Liu	
PO04-137	222
<b>A case of hair matrix tumors.</b> Li Zhao	
PO04-138	222
<b>A case of a cutaneous squamous cell carcinoma at the site of previous sporotrichosis: a novel pathogenetic association</b> Yong-Zhi Ji, Shi-Rui Liu, Fu-Qiu Li	
PO04-139	222
<b>Benserazide suppresses growth of melanoma by targeting PKM2</b> You-You Zhou, Xiang Chen, Cong Peng	
PO04-140	223
<b>Hepatic fibrosis, Squamous Cell Carcinoma and Multiple Bowen's Disease in a Patient with a History of Consumption of Traditional Chinese Herbal Balls: A six -year follow-up</b> Bin Chen	
PO04-141	223
<b>Sporotrichosis: A case report</b> Xiao-Pan Gong, Chao Ji, Bo Cheng, Qi-Le Zheng	
<i>PO05 Bullous Diseases</i>	
PO05-005	223
<b>Recessive dystrophic epidermolysis bullosa patient with COL7A1 gene mutation</b> Jeunghoon Lee, ChangDeok Kim, SooJung Kim, Mi-Ra Choi	
PO05-010	224
<b>Coexistence of bullous pemphigoid and pemphigus vulgaris</b> Jae seong Joo, Sook Jung Yun, Seung Chul Lee, Jee Bum Lee	

PO05-013	224
<b>A case of pemphigus vulgaris accompanied by acquired hemophilia A</b> Ozumi Tomita, Takashi Inozume, Shinji Shimada, Tatsuyoshi Kawamura	
PO05-014	225
<b>Recessive dystrophic epidermolysis bullosa patient (RDEB) with COL7A1 gene mutation</b> Jeunghoon Lee, Mi-ra Choi, Soo-jung Kim, Chang-Deok Kim	
PO05-018	225
<b>A paraneoplastic pemphigus with Unicentric mediastinum Castleman's disease: a case report</b> Yun-Zhu MU	
PO05-001	225
<b>Focal pemphigoid vegetans on the lower limbs of a boy with bullous pemphigoid</b> Hui-Chun su, Ling Yu, Zhi-Liang Li, Xu Yao, Su-Ying Feng, Bao-Wang	
PO05-002	226
<b>Application of indirect immunofluorescence on the diagnosis of autoimmune subepidermal bullous disease</b> Ling Yu, Su-Ying Feng, Zhi-Liang Li	
PO05-003	226
<b>A case report of drug-induced toxic epidermal necrolysis with secondary aspergillus fumigatus infection</b> Si Zhang, Cheng Zhou, Guang-Dong Wen, Lin Cai, Jian-Zhong Zhang	
PO05-004	227
<b>A case report of pemphigus foliaceus converting into bullous pemphigoid with clinical and immunopathological features</b> Feng Hu, Xiang-Dong Wang, Xiao-Yong Zhou, Liu-Qing Chen	
PO05-006	227
<b>Correlation of autoantibodies and cytokines related to eosinophilia with disease severity in patients with bullous pemphigoid</b> Zhi-Qi Song, Wei Wu	
PO05-007	228
<b>Analysis of prevalence of internal medicine diseases in patients with bullous pemphigoid</b> Fang Su, Qing-Yan Chen, Tie-Nan Li	
PO05-008	228
<b>Pemphigoid nodularis mimicking nodular prurigo in an immunocompetent patient</b> Chi-Peng Guo, Pei-Ying Feng, Xiao-Yuan Xie, Xin Zhou, Jia-Qi Fang, Wei Lai, Chun Lu	
PO05-009	229
<b>A case of pediatric pemphigus vulgaris with nail dystrophy</b> Lu Zheng	
PO05-011	229
<b>MiR-338-3p: a potential biological diagnostic marker of pemphigus</b> Nai-Yu Lin, Qing-Xiu Liu, Meng-Lei Wang, Kang Zeng	
PO05-012	229
<b>A case of infantile bullous pemphigoid</b> Huan-Huan Qu, Zhe Jian, Cui-Ling Ma, Gang Wang	
PO05-015	230
<b>Bullous pemphigoid combined with anti-Caspr2 encephalitis</b> Ya-Nan Wang, Yue-Ping Zeng, Li Li	
PO05-016	230
<b>A case of bullous pemphigoid complicated by Turner syndrome</b> Yan Mou, Jian-Xin Xia, Ying-Zhou, Fu-Qiu Li	
PO05-017	230
<b>Clinical and pathological analysis of four cases of nodular pemphigoid</b> Zhen-Feng Liu, Li-Dan Liu, Jin-Yi Li, Yong-Feng Chen	

## *PO06 Collagen Diseases and Vasculitis*

- PO06-002 231  
**Occlusive dressing and epidermal growth factor cream as a successful treatment for multiple, large, systemic lupus erythematosus-associated vasculitic ulcers**  
Young Wook Ko
- PO06-003 231  
**A case of generalized acquired cutis laxa**  
Hoo Min Choi, Sung Min Kim, Jong Baik Kim, Byung In Ro, Eun Jeong Ko, Han Kyoung Cho
- PO06-007 232  
**Immunoabsorption: a potent treatment option for severe systemic lupus erythematosus**  
Xin Wang, Hai Long
- PO06-010 232  
**Thalidomide in the treatment of pyoderma gangrenosum: a case series of 8 patients**  
Li-Hong Chen, Xiao-Qing Zhao, Ruo-Fei Shi, Jie Zheng
- PO06-015 233  
**Analysis of possible structures of inducible skin-associated lymphoid tissue (iSALT) in lupus erythematosus profundus**  
Takashi Nomura, Toshiaki Kogame, Kenji Kabashima
- PO06-016 233  
**Unbalanced Th17/Treg axis intensifies the bleomycin-induced systemic sclerosis-like phenotypes of Treg-specific Fli1 conditional knock out mice.**  
Kouki Nakamura, Yoshihide Asano, Takuya Miyagawa, Megumi Hirabayashi, Takashi Yamashita, Ryosuke Saigusa, Shunsuke Miura, Tetsuo Toyama I, Takehiro Takahashi, Takehiro Takahashi, Yohei Ichimura, Takashi Taniguchi, Ayumi Yoshizaki, Maria Trojanowska, Shinichi Sato
- PO06-017 234  
**Serum levels of Soluble PD-1 and PD-L2 associate with abnormal immune activation and disease severity in patients with systemic sclerosis**  
Ayumi Yoshizaki, Takemichi Fukasawa, Satoshi Ebata, Asako Yoshizaki, Yoshihide Asano, Yutaka Kazoe, Kazuma Mawatari, Takehiko Kitamori, Shinichi Sato
- PO06-018 234  
**A case of Schnitzler syndrome**  
Mayuko Yamamoto, Ema Kusume, Ai Fujioka, Kimiko Nakajima, Ryuta Nishikomori, Kazushi Izawa, Shigetoshi Sano
- PO06-019 235  
**A case of subcutaneous-type sarcoid with granulomatous vasculitis**  
Ai Fujioka, Yukiko Tsuji, Hideki Nakajima, Masasi Nomoto, Keiko Miura, Ko-Ron Chen, Shigetoshi Sano
- PO06-020 235  
**Systemic sclerosis-like vasculopathy underlies the delayed wound healing in Fli1/Klf5 double-heterozygote knockout mice: Abnormal angiogenesis activation with vasculogenesis impairment**  
Kouki Nakamura, Yoshihide Asano, Takuya Miyagawa, Megumi Hirabayashi, Takashi Yamashita, Ryosuke Saigusa, Shunsuke Miura, Tetsuo Toyama I, Takehiro Takahashi, Yohei Ichimura, Takashi Taniguchi, Ayumi Yoshizaki, Maria Trojanowska, Shinichi Sato
- PO06-001 236  
**Lichen sclerosus et atrophicus-a disease that can not be neglect**  
Yan-Fei Zhang, Yi-Guo Feng, Zheng-Xiao Li
- PO06-004 236  
**Research of Cthrc1 and TGF- $\beta$ 1 effect on fibroblast collagen synthesis in fibroblast**  
Yi Liu
- PO06-005 237  
**A case of reactive perforating collagenosis**  
Hui-Min Meng

PO06-006	237
<b>Pancreatic panniculitis in a patient with chronic pancreatitis: A rare condition in misdiagnosed</b>	
Mao Luo, Zhuo-Fu Luo, Ji-Xiang Xu, Jian-Qiao Zhong, Xia Xiong, Yang Xu	
PO06-008	237
<b>Correlation between the expression of lncRNAs in PBMC and their clinical manifestations in patients with SLE</b>	
Dan-Qi Deng, Xiao A, Li-Mei Yuan, Wen-Ti Cao	
PO06-009	238
<b>Recognition of stiff skin syndrome</b>	
Song-Mei Geng, Li-Hong Zhao, Jin-Gang An	
PO06-011	238
<b>Acute hemorrhagic edema of infancy: a case report</b>	
Liu-Qing Chen, Ling-Ling Zeng, Min Jiang	
PO06-012	239
<b>CTCF regulates CD70 expression in lupus CD4+ T cells</b>	
Ying Zhou, Liu Duan, Qian-Jin Lu	
PO06-013	239
<b>A case of acquired reactive perforating collagenosis associated with psoriasis</b>	
Bei Kan	
PO06-014	240
<b>Acquired reactive perforating collagenosis: A case report</b>	
Min Lin, Jin-Wen Huang, Chao Ji, Bo Cheng	
<i>PO07 Cosmetic Dermatology</i>	
PO07-003	240
<b>A face-split study to evaluate the effects of microneedle radiofrequency with Q-switched Nd: YAG laser for the treatment of melasma</b>	
JinWoong Jung, WonOh Kim, SangDon Yoon, SungAe Kim, YoungWook Ryoo	
PO07-004	240
<b>Treatment of ear keloids by surgical excision combined with intralesional corticosteroid injections and pulsed dye laser therapy</b>	
Sang-Myung Park, Joong-Yoon Choi, Ye-Jin Lee, Bark-Lynn Lew, Woo-Young Sim	
PO07-007	241
<b>Niacinamide and 12-hydroxystearic acid prevented benzo(a)pyrene and squalene monohydroperoxides induced hyperpigmentation in skin equivalent</b>	
Tingyan Mi, Nan Huang, Yiyong Dong, Guoqiang Chen	
PO07-028	241
<b>Successful treatment of scar using microneedle radiofrequency device with polydeoxyribonucleotide injection</b>	
Ji Hyun Park, Ko Eun Kim, Sook In Ryu , Bo Young Kim, Sang Wook Son , Hye Rim Moon	
PO07-030	242
<b>Skin aging and interfollicular epidermal stem cells</b>	
Kyoung-Chan Park	
PO07-001	242
<b>Applications and efficacy of platelet-rich plasma in dermatology: a systematic review of clinical trials</b>	
Mei-Jie zhang, Bing-Rong Zhou, Dan Luo	
PO07-002	243
<b>Inhibitory effect of topical calcineurin inhibitor on the laser-induced angiogenesis</b>	
Si-Yu Wang, Gang Liu, Lei Yan, Jun Xie, Zhu Shen	
PO07-005	243
<b>Clinical application of facial anatomy in the treatment of skin laxity by monopolar radiofrequency</b>	
Kai Li, Lin Gao, Lin-Han Qian, Ni Gao, Gang Wang	

PO07-006	244
<b>Research progress and standardized operation of hyaluronic acid intradermal injection</b> Kai Li, Lin Gao, Ni Gao, Lin-Han Qian, Gang Wang	
PO07-008	244
<b>Treatment of freckle with the large spot size, low fluence Q-switched 1064 nm Nd: YAG laser</b> Hua-Xu Liu, Yan Lin, Xiao-Jun Chi	
PO07-009	245
<b>Paradoxical hyperplasia in a Chinese man: A rare side effect associated with cryolipolysis</b> Ling-Ling Hu, Wei-Min Song	
PO07-010	245
<b>Combination of tretinoin and 1565 nm non-ablative fractional laser for the treatment of acne</b> Lin Gao, Li Wang	
PO07-011	245
<b>Update of laser and light therapies in melasma</b> Yao-Jia Luo	
PO07-012	246
<b>Acneform reactions induced by laser hair removal of long-pulse Nd: YAG</b> Hai-En Wu, Yong-Bin Liu	
PO07-013	246
<b>Comfort and result: Pain and energy management during monopolar radiofrequency treatment</b> Kai Li, Lin Gao, Li Wang, Ni Gao, Gang Wang	
PO07-014	247
<b>Dual-wavelength, Nd: YAG, Picosecond-domain laser safely and effectively of skin rejuvenation in Chinese</b> Kai Li, Ming-Shan Su	
PO07-015	247
<b>A study of combining nano-microneedle with 5% minoxidil in androgenetic alopecia treatment</b> Yuan-Hong Li	
PO07-016	247
<b>Clinical evaluation of the efficacy and safety of combined bipolar radiofrequency and Intense Pulsed Light vs. bipolar radiofrequency alone for facial/hand skin rejuvenation treatment.</b> Fei-Yan Lin, Xiao-Juan Yao	
PO07-017	248
<b>Enhancing hair growth in male androgenetic alopecia by a combination of 1550 nm fractional erbium-glass laser therapy and 5% minoxidil tincture</b> Qiong Wang, Wei-Hui Zeng, Jian-Wen Ren, Song-Mei Geng	
PO07-018	248
<b>Comparison of a pulsed dye laser and a narrow-spectrum intense pulsed light in the treatment of acne vulgaris</b> Jin Chen, Yu Liu, Yang-Mei Chen, Qing Zhao	
PO07-019	249
<b>Clinical efficacy of gold microneedles radiofrequency combined with AAPE in the treatment of atrophic acne scars</b> Cai-Xia Tu, Yan-Lin Liu, Yu-Ling Yang, Lu Wang	
PO07-020	249
<b>Dermoscopic features of alopecia areata and their clinical significance</b> Jia Liu	
PO07-021	250
<b>Er:YAG fractional laser combining BBL treatment for pediatric hypertrophic scars</b> Dan Deng, Xue Zhang, Zhi-Rong Yao	
PO07-022	250
<b>Repair methods and strategy for complication of cosmetic laser</b> Dong-Ni Li, Bing Cai, Yan-Hua Liu	

PO07-023	250
<b>Applications of skin imaging techniques in cosmetic dermatology</b> Zhao-Rui Liu, Jie Liu	
PO07-024	251
<b>Efficacy and safety of 532nm KTP laser in the treatment of port-wine stains: A case series.</b> Qian-Li Yang, Zhong Lu	
PO07-025	251
<b>Excision of apocrine glands and flaps with selective preservation of subcutaneous fat septal vessels for therapy of bromhidrosis</b> Chang-Gui Lan, Cheng-Qi Liao, Li-Ping Hu, Xiao-Feng Mei, Yi Wang, Xiao-Xi Zhou, Lin Gan, Can Li	
PO07-026	252
<b>Treatment of atrophic acne scarring with fractional micro-plasma radio-frequency in chinese patients: A prospective study</b> Rui Yin	
PO07-027	252
<b>Overview of chemical peels: Why, when and how?</b> Yan Wu, Shao-Min Zhong, Chen Yuan, Meng-Yen Hsieh, Li Yang	
PO07-029	253
<b>Combining application of topical 30% salicylic acid and oral minocycline on rosacea in Asian patients: A randomized split-face controlled study</b> Shu-Juan He	
PO07-031	253
<b>Classification of dark circles and treatment options</b> Yan Wu, Chen Yuan, Shao-Min Zhong, Meng-Yan Xie	
PO07-032	254
<b>Survey of injection habit of botulinum toxin in Chinese dermatologists and plastic surgeons for aesthetic treatments</b> Yan Wu, Chen Yuan, Shao-Min Zhong, Meng-Yan Xie	
PO07-033	255
<b>Effects of varying dermal delivery methods of different hyaluronic acid-based products on skin rejuvenation</b> Yan Wu, Meng-Yan Xie, Chen Yuan, Shao-Min Zhong	
PO07-035	255
<b>Activation of aryl hydrocarbon receptors in human sebocytes by Propionibacterium acnes and peptidoglycan in vitro and its significance in the pathogenesis of acne</b> Ke Cao, Qiang Ju	
PO07-036	256
<b>Aryl hydrocarbon receptor modulates the expression of TNF-<math>\alpha</math> and IL-8 in human sebocytes via myd88- p65NF-<math>\kappa</math>B /p38MAPK signaling pathways</b> Xiao- Hou, Guang-Jie Chen, Ting-Ting Hu, Lan-Qi Wang, Zhan-Yan Pan, Ling-Yi Lu, Ke Cao, Ying Ma, Amir Hossini, Christos.C Zouboulis, Long-Qing Xia, Qiang Ju	
PO07-037	257
<b>Non-invasive skin evaluation for the diagnosis, differential diagnosis and treatment of port-wine stains</b> Xian Jiang, Lian Liu	
PO07-038	257
<b>Aesthetic application of local flap in repair of periorbital skin defects</b> Dong-mei Wu	
PO07-039	257
<b>Combination therapy of acne scars by using versatility erbium: YAG laser platform</b> Kai Li, Lin Gao, Lin-Han Qian, Gang Wang	

PO07-041		258
<b>New method for facial aging evaluation of Chinese population</b>		
Qian-Qian Wang		
<i>PO08 Dermatitis and Skin Allergy</i>		
PO08-003		258
<b>Associations between urine iodine and allergic diseases in the Korean National Health and Nutrition Examination Survey 2013–2015</b>		
Young Bok Lee, Soo Young Lee, Jin Young Kim, Min Ji Kang, Jin Wou Lee, Dong Soo Yu		
PO08-007		259
<b>A case of DRESS syndrome initially misdiagnosed as <i>Salmonella</i> infection</b>		
Jisook Yoo, Taehan Koo, Eun-Jung Park, Mingyul Jo, Min-Soo Kim, Mihn-Sook Jue		
PO08-013		259
<b>Effectiveness of high-dose ultraviolet A-1 phototherapy on acute exacerbated atopic dermatitis</b>		
Min Soo Jang		
PO08-014		260
<b>A case of fulminant type 1 diabetes in the course of drug-induced hypersensitivity syndrome (DIHS)</b>		
Yue-Qi Jiang, Jin-Ran Lin		
PO08-015		260
<b>Lichen simplex chronicus secondary to scald injury and skin flap transplantation.</b>		
Zhi-Qiang Yin		
PO08-017		260
<b>A case of hyperimmunoglobulinemia E syndrome and Kimura’s disease</b>		
Tae Jun Park, Ha Neul Oh, Bo Young Kim, Chang Min Kim, Sang Wook Son		
PO08-023		261
<b>Acetaminophen-induced generalized bullous fixed drug eruption (GBFDE) coincided with influenza</b>		
Jin Young Song, Kyung Muk Jeong, Seung Hwi Kwon, Yoo Sang Baek, Hae Jun Song, Chil Hwan Oh, Jiehyun Jeon		
PO08-026		261
<b>Alitretinoin can be a good treatment option for idiopathic recalcitrant trachyonychia in adults: An open-label study</b>		
Kihyuk Shin, Tae-Wook Kim, Sung-Min Park, Hyun-Joo Lee, Hyunju Jin, Hyang-Suk You, Woo-Haing Shim, Gun-Wook Kim, Hoon-Soo Kim, Hyun-Chang Ko, Byung-Soo Kim, Moon-Bum Kim		
PO08-027		262
<b>Histopathologic study of morbilliform drug eruption: Differences between chemotherapeutic agents and antibiotics</b>		
Soo Yeon Cho, Soohyun Kwon, Ji Eun Kwon, Jae-Ho Han, You Chan Kim		
PO08-028		262
<b>Comorbidity of vitamin A and vitamin D deficiency exacerbates the severity of atopic dermatitis in children</b>		
Juan Xiang, Hua Wang, Ting-Yu Li		
PO08-034		263
<b>Significance and correlation of thyroid associated autoantibodies in patients with chronic urticaria</b>		
Jing Qi, Zi-Gang Zhao, Cheng-Xin Li		
PO08-036		263
<b>Generalized lichen nitidus following anti-programmed cell death 1 antibody treatment</b>		
Takashi Nomura, Maria Cho, Atsushi Otsuka, Saeko Nakajima, Kenji Kabashima		
PO08-037		264
<b>Efficacy of Oregedokuto in a murine model of atopic dermatitis</b>		
Naoya Mori, Yoko Yoshihisa, Tsugunobu Andoh, Mati Ur Rehman, Tadamichi Shimizu		

PO08-039		264
<b>Toxic epidermal necrolysis with several immune-related adverse events followed by nivolumab in a patient with malignant melanoma</b>		
Yuko Watanabe, Yukie Yamaguchi, Junko Mukaijo, Naoko Takamura, Hiroko Takeyama, Nobuaki Ikeda, Hidefumi Wada, Michiko Aihara		
PO08-040		265
<b>Ragweed pollen allergen is a danger signal for the skin via activation of NLRP3 inflammasome in keratinocytes</b>		
Xiu-Ju Dai, Mikiko Tohyama, Masamoto Murakami, Ken Shiraishi, Koji Sayama		
PO08-041		265
<b>Granulomatous periorificial dermatitis in a fiberglass industry worker</b>		
Ko Eun Kim, Tae Jun Park, Bo Young Kim, Ji Hyun Park, Sang Wook Son, Il-Hwan Kim, Hye Rim Moon		
PO08-043		266
<b>Inducible urticaria in children: Its clinical and laboratory features.</b>		
Koji Masuda, Junko Hattori, Risa Tamagawa-Mineoka, Norito Katoh		
PO08-048		266
<b>Erythema multiforme-like contact dermatitis caused by Lysimachia clethroides</b>		
Xu-Hua Tang, Zi-Xun Zeng, Hui Zhou		
PO08-001		266
<b>Itching and its related factors in subtypes of eczema: a cross-sectional and multicenter study in tertiary hospitals of China</b>		
Xin Wang, Lin-Feng Li, Xiao-Dong Shi		
PO08-002		267
<b>A case of allergic dermatitis resembling infectious granuloma</b>		
Xiao-Yang Liu, Yan Zhao, Lin Cai, Jian-Zhong Zhang		
PO08-004		267
<b>Patch testing in facial dermatitis using Chinese baseline series (60 allergens) and cosmetic series (58 allergens)</b>		
Fen Peng, Zhang-Lei Mu, Chen-Hong Xue, Zhou Chen, Jian-Zhong Zhang		
PO08-005		268
<b>Evaluation of the reduction of risk in patients with moderate-to-severe atopic dermatitis receiving Dupilumab</b>		
Yue Han, Xu Yao		
PO08-006		268
<b>Efficacy of vitamin D supplementation in the reduction of risk of children with atopic dermatitis: A meta-analysis of randomized controlled trials</b>		
Yue Han		
PO08-008		269
<b>Procalcitonin as a diagnostic indicator for systemic bacterial infections in patients with Stevens-Johnson syndrome/toxic epidermal necrolysis</b>		
Qian Wang, Wei Liu, Li-Xia Zhang		
PO08-009		270
<b>Prevalence of chronic spontaneous urticaria, eczema and tinea among chinese young adults are significantly correlated with ethnicity and original family socioeconomic status</b>		
Yi Xiao, Jie Li, Si-Yu Yan, Ni Tang, Xiao-Yan Huang, Yu-Zhou Huang, Min-Xue Shen, Xiang Chen		
PO08-010		270
<b>Mediators in the association of chronic spontaneous urticaria with anxiety and depression in adolescents</b>		
Yu-Zhou Huang, Min-Xue Shen, Jie Li, Xiang Chen		
PO08-011		271
<b>Correlation analysis of serum 25-OH vitamin D level and atopic dermatitis in children</b>		
Peng-Yue Liu, Ge Peng, Li-Xia Cui, Fan Yang, Zhen-Zhen Mu, Xiu-Ping Han		
PO08-012		271
<b>Sublingual immunotherapy in mite-sensitized patients with atopic dermatitis: A multi-centre, randomized, double-blind, placebo-controlled study</b>		
Lun-Fei Liu, Ji-Su Chen, Min Zheng		

PO08-016	272
<b>Serum miR-125a-5p and CCL17 as potential biomarkers for chronic spontaneous urticaria</b> Li-Ming Zhang, Rui-Qun Qi, Yang Yang, Hong-Duo Chen, Ting Xiao	
PO08-018	272
<b>A case report of skin ulcer</b> Yao Qin, Jin-Zhu Guo, Qing-Hua Song, Chun-Lei Zhang	
PO08-019	273
<b>Epidemiology of Stevens-Johnson syndrome and toxic epidermal necrolysis in China</b> Jing Zhang, Jin-Wen Huang, Chao Ji, Bo Cheng, Min Lin	
PO08-020	273
<b>Associations between vitamin D receptor gene polymorphisms and chronic spontaneous urticaria in Chinese Han population</b> Yi-Ping Ma	
PO08-021	274
<b>Combination of traditional Chinese and Western medicine treatment of childhood eczema</b> Tao-Ying Cheng	
PO08-022	274
<b>Decreased interleukin-35 serum levels in patients with chronic spontaneous urticarial</b> Li-Xin Fu, Tao Chen, Qiao-Mei Sun	
PO08-024	275
<b>A case of trichloroethylene induced medicamentosa-like dermatitis (DMLT) complicated with Hemophagocytic Syndrome (HPS)</b> Jia-Qi fang, Xiao-Yuan Xie, Wei Lai, Jun-Ye Yang, Xiang-Zhong Zhang, Ruo-Zhi Xiao	
PO08-025	275
<b>Clinical efficacy and safety of biologic agents in moderate to severe atopic dermatitis: a meta-analysis</b> Ge Peng, Li-Xia Cui, Peng-Yue Liu, Xi-Meng Zhang, Yue Zhang, Xiu-Ping Han	
PO08-029	276
<b>TSLP promote MoDCs uptake OVA and induce allergic TH2 immunity by Dectin-2</b> Yun-Sheng Liang, Bi-Hui Yu	
PO08-030	276
<b>Suppression of Osthole on PMA-induced degranulation of rat basophilic leukemia RBL-2H3 cells</b> Qiu-Qiu Zhang, Tie-Chi Lei	
PO08-031	277
<b>Lichen planus: an immunohistochemical study of LC3B, mTOR, Rab11a and a unifying hypothesis of pathogenesis</b> Ya-Li Gao, Xiu-Zu Song	
PO08-032	277
<b>Curative effect of high-dose Levocetirizine in treating recalcitrant chronic spontaneous urticaria and the serum IP3 concentration detection</b> Xian-Qiong Huang, Ren-Shan Sun	
PO08-033	278
<b>Baboon syndrome: A rare cutaneous reaction induced by inhalation of mercury vapour</b> Jin-Gang An	
PO08-035	278
<b>An analysis of the prevalence of AD prevalence in a primary school in sha district, urumqi</b> Wen-Hui Zuo, Man-Yu Zhou, Fei Guo, Hong-Xia Liu	
PO08-038	279
<b>Paraphimosis due to butenafine hydrochloride ointment allergy</b> Jin-Lan Tian, Chang-Qiang Li, Jing Fang, Xin Ye, Xia Feng, Hong-Yi He	
PO08-042	279
<b>Research on the efficacy and safety of APCC-1502 moisturizer among dry skin and mild to moderate atopic dermatitis population in northern China</b> Li Zhang, Xing-Hua Gao	

PO08-044	280
<b>Effects of TGM3 on monocyte-derived dendritic cell (MDDC) activation</b> Hui-Chun Su, Xu Yao, Bao-Xi Wang	
PO08-045	280
<b>Study on the binding ability of CD209 and transglutaminase 3 (TGM3)</b> Hui-Chun Su, Xu Yao, Bao-xi Wang	
PO08-046	280
<b>Study on the interference efficiency of CD209 SiRNA to CD209</b> Hui-Chun Su, Xu Yao, Bao-Xi Wang	
PO08-047	281
<b>TGMs expression in the epidermal lesions of atopic dermatitis</b> Hui-Chun Su, Xu Yao, Bao-Xi Wang	
PO08-049	281
<b>Clinical observation of ebastine combined with topical recombinant human epidermal growth factor gel in treatment of eczema on face</b> Jin-Feng Wang, Lan-Xiang Jiang, Fu-Qiu Li	
 <i>PO09 Fungal Infection</i>	
PO09-005	282
<b>An unusual case of cutaneous penicilliosis Due to <i>Penicillium citrinum</i> in an immunocompetent individual</b> Xiao-Yan Wu, Jia-Min Huang, Jing Zhang, Huai-Qiu Huang	
PO09-008	282
<b>Factitial panniculitis with secondary <i>Candida parapsilosis</i> infection in a patient: A case report</b> Yan-Yang Guo, Jian-Kang Yang, Cui-Ling Ma, Gang Wang, Meng Fu	
PO09-021	282
<b>RNA-Seq of macrophages infected with <i>Fonsecaea monophora</i></b> Ming-Lan Shi, Jun-Min Zhang	
PO09-033	283
<b>Immunomodulatory effects of itraconazole on macrophage M1/M2 Polarization and improvement of phagocytic capacity to <i>Candida albicans</i></b> Xiao-Li Zheng, Guan-Zhao Liang, Wei-Da Liu, Guan-Zhi Chen	
PO09-034	283
<b>Cutaneous Mucormycosis caused by <i>Mucor irregularis</i> in a healthy patient</b> Xiang-Xi Wang, Jin Yu, Ai-Ping Wang	
PO09-035	284
<b>Identification of dermatophyte species by matrix-assisted laser desorption ionization-time-of-flight mass spectrometry</b> Jin Shao, Zhe Wan, Ruo-Yu Li, Jin Yu	
PO09-041	284
<b>Immune response of immunosuppressed mice to <i>Aspergillus fumigatus</i></b> Min Zhu	
PO09-001	285
<b>Newly characterization of a <i>Candida albicans</i> isolate from a cervical lymphadenitis patient and its clinic indication</b> Cheng-Zhen Zhang, Wen-Juan Wang, Qing-Tao Kong, Jiang-Ye Chen, Hong Sang	
PO09-002	285
<b>Kerion celsi caused by <i>Trichophyton violaceum</i>: A case report and literature review in China from 2011 to 2017</b> Jian-Qin Wang, Lei Shao, Jing-Yao Liang, Si-Ying Xiong, Xin Tian, Xiao-Dong Li, Li-Jie Chen, Dong-Mei Li, Yu-Mei Liu	
PO09-003	286
<b>Skin microbiome changes in patients with interdigital superficial fungal infection</b> Ruo-Jun Wang, Ying-Gai Song, Jin Yu, Ruo-Yu Li	

PO09-004	286
<b>Mycobacterium Chelonae/abscessus complex infection of the limbs: A challenging clinical case</b> Li-Dan Zhang, Xin Zhou, Ling Lin, Quan Luo	
PO09-006	286
<b>Sprothrix globosa causing sporotrichosis in Jilin Province (Northeast of China): Prevalence and molecular characterization</b> Yan Cui, Lei Yao, Li-Pei Zhao, Shan-Shan Li	
PO09-007	287
<b>Diagnostic and therapeutic study of kerion Caused by <i>Alternaria Alternata</i></b> Gong-Jie Zhang, Dong-Ming Li, Ting-ting Sun, Fang Zhou	
PO09-009	287
<b>Six cases of chronic mucocutaneous candidiasis</b> Ji-Xin Gao, Rong-Rong Liu, Yu Liu, Meng Fu	
PO09-010	288
<b>Clioquinol, an alternative antimicrobial agent against common pathogenic microbe</b> Zi-Meng You, Xin Ran, Ya-Ling Dai, Chao-Liang Zhang, Yu-Ping Ran	
PO09-011	288
<b>Efflux pump inhibitor tetrandrine exhibits synergism with fluconazole or voriconazole against <i>Candida parapsilosis</i></b> Ya Zhao, Ling Jiang, Hao-Tian Wu, Shui-Xiu Li, Yan-Jun Song, Hui Guo, Wei-Da Liu, Yong-Nian Shen, Dong-Mei Li, Kun-Ju Zhu, Hong Zhang	
PO09-012	289
<b>A case of sporotrichosis presented with multiple crusted nodules, papules and infiltrated plaques on the left cheek: an unusual clinical presentation</b> Ya-Bin Zhou, Ruo-Yu Li, Zhe Wan, Wei Chen, Xiao-Qing Liu, Wei Liu	
PO09-013	289
<b><math>\alpha</math>-(1, 6)(1, 2)-Mannoprotein of <i>Candida albicans</i> promotes proliferation and inhibits apoptosis of macrophages through akt activation</b> Hang-Hang Jiang, Rui-Qun Qi, Yang Han, Yu-Zhe Sun, Yu-Jing Zhang, Xing-Hua Gao	
PO09-014	290
<b>Nonprofessional phagocytic cells invasion by <i>Candida albicans</i>: induced endocytosis vs active penetration</b> Bo Pan, Jiang-Han Chen, Xiao-Gang Liu, Wei-Hua Pan <sup>1</sup> , Wan-Qing Liao, Yao-Ping Liu, Solis Norma, Scott Filler	
PO09-015	290
<b>Superficial fungal infections of the male penis and scrotum: 32 cases series report</b> Mei-Rong Li, Song-Chao Yin, Ling Wei, Han Ma, Chun Lu, Pei-Ying Feng	
PO09-016	290
<b>A case of fungal immunofluorescence in the diagnosis of Facial tinea</b> Wen-Ju Wang, Ming Chen, Xue-Ying Liu, Yong-Hong Lu	
PO09-017	291
<b>Anti-Interferon-<math>\gamma</math> autoantibodies are underlie the disseminated <i>Talaromyces marneffe</i> infection</b> Cun-Wei Cao, Xin-Qiang Ning	
PO09-018	292
<b>Synergistic activity of tacrolimus or triamcinolone acetonide with itraconazole, terbinafine, bifonazole, and amorolfine against clinical dermatophyte isolates</b> Jin-Qing Zhang, Jing-Wen Tan, Yan-Ling He	
PO09-019	292
<b>Evaluation of the effects of photodynamic therapy alone and combined with standard antifungal therapy on biofilms of <i>T. rubrum</i>, <i>T. mentagrophytes</i> and <i>Microsporum gypseum</i></b> Bo-Rui chen, Yi Sun, Jing-Jun Zhao, Xiao-Mo Wu, Jin-Yan Zhang	
PO09-020	293
<b>AcuD gene is involved in morphogenesis and virulence of the human pathogenic fungus <i>Talaromyces marneffe</i></b> Li-Ya He, Jiao Feng, Li-Yan Xi	

PO09-022	293
<b>Transcriptional profiling of macrophages infected with <i>Fonsecaea monophora</i></b> Ming-Lan Shi, Jun-Min Zhang	
PO09-023	294
<b>Topical use of 1% luliconazole cream cured with <i>Fusarium oxysporum</i> infected refractory ulcers on an elderly patients leg and ankle</b> Xin Ran, Xian Jiang, Sheng Wang, Yu-Ping Ran	
PO09-024	294
<b>An <i>in vitro</i> study of photodynamic inactivation on <i>Fonsecaea Monophora</i> by TMPyP4</b> Ya He, Li-Yan Xi	
PO09-025	295
<b>Zygomycosis patients with diabetes type 2 in the mainland of China: A hidden challenge</b> Jiu Yi, Min Chen, Jing-Yu Zhao, Wei-Hua Pan, Wei Fang, Ju-Lin Gu, Wan-Qing Liao	
PO09-026	295
<b>Study on drug susceptibility of <i>Candida albicans</i> in free state and biofilm state</b> Jing Yang	
PO09-027	296
<b>Correlation between mutation/overexpression of Mrr2 , CDR1 genes and fluconazole-resistant in <i>Candida albicans</i> isolates</b> Wen-Li Feng, Ying Ji, Jing Yang, Zhi-Qin Xi, Lu Yang, Xin Zhu, Yan Ma, Yuan Wu	
PO09-028	297
<b>Mutations and/or overexpressions of ERG3 and Efg1 genes in clinical azoles-resistant isolates of <i>Candida albicans</i></b> Wen-Li Feng, Zhi-Qin Xi, Jing Yang, Ying Ji, Xin Zhu, Lu Yang, Yan Ma, Xiao-Qiang Jia	
PO09-029	297
<b>Role of Bem46 gene in the polar growth of <i>Aspergillus fumigatus</i></b> Yan Ma, Wen Li, Jia-Juan Li, Rui-han Sun	
PO09-030	298
<b>Study on the expression of murine dendritic cells to stimulate the <i>Sporothrix schenckii</i> complex produce inflammatory factors</b> Xiao-Dong Wang	
PO09-031	298
<b>Isolation and identification of 359 strains of <i>Candida albicans</i> and its susceptibility to 5 kinds of antifungal agents</b> Yue-Bin Zeng, Ming-Hang Li, Di Wang, Bing Hou, Yuan-Chun Huang, Yuan-Shu Qian4	
PO09-032	299
<b>Genotype and virulence factors analysis in the human fungal pathogen <i>Cryptococcus neoformans</i></b> Yi-Wu Yu	
PO09-036	299
<b>Comparative transcriptome analysis of <i>Sporothrix Schenckii</i> during dimorphic switch</b> Zhen-Ying Zhang, Bin-Bin Hou, Wen-Wen Zheng, Fang-Liang Zheng	
PO09-037	300
<b>A case of tattoo complicating lymphocutaneous sporotrichosis</b> Yan Mou, Jian-Xin Xia, Fu-Qiu Li	
PO09-038	300
<b>In vitro activities of eight antifungal drugs and their combinations against dematiaceae strains</b> Ying Ji, Ruo-Yu Li, Wei Liu, Zhe Wan, Qian Wang, Hao Zhang	
PO09-039	300
<b>Melanin of <i>fonsecaea monophora</i> modulates murine macrophage polarization</b> Ying-hui Liu, Hong-Fang Liu, Yang-Xia Chen, Li-Yan Xi, Yun-Sheng Liang	
PO09-040	301
<b>Clinical aspects and pathogen identification of tinea incognito</b> Qin-Qin Tang	

PO09-042	301
<b>A case of Candida Balanitis with hyperplastic plaque mimicking vascular neoplasm</b> Xue-Yao Yao, Xiao-Bin Zhou, Wen-Ge Zhang, Guang-Dong Wen, Jian-Zhong Zhang, Cheng Zhou	
PO09-043	301
<b>Tenosynovitis infection of <i>Mycobacterium marinum</i>: A case report and literature review</b> Min-Min Jiang	
PO09-044	302
<b>A case of an invasive fungal infection which was misdiagnosed as an IgG4 related disease</b> Hong-Mei Lyu, Jin-Zhu Guo, Yi-Dan Sun, Xin-Yue Li, Dong-Ming Li	
<i>PO10 Genetic Disorders</i>	
PO10-002	302
<b>Juvenile xanthogranuloma occurred in a patient based on the juvenile myelomonocytic leukemia and neurofibromatosis type 1 after allogeneic hematopoietic stem cell transplantation</b> Yan Gao	
PO10-004	303
<b>First report of DDB2 mutations in a Chinese Han family with xeroderma pigmentosum</b> Rui Yang, Qing-Tao Kong, Yun Hui, Su-Yang Huang, Fang Liu, Cai-Yun Zhang, Hong Sang	
PO10-005	303
<b>A case of aquagenic wrinkling of the palms</b> INHO BAE, Hoon Choi, Chanho Na, Minsung Kim, Bongseok Shin	
PO10-007	304
<b>Olmsted syndrome with severe pruritus and mutation in TRPV3</b> Ru-zeng Xue	
PO10-008	304
<b>Two cases of xeroderma pigmentosum with ERCC2/ERCC5 gene mutation</b> Zhou Yang, Zhe Xu, Lei Jiao, Shan Wang, Lin Ma	
PO10-011	305
<b>Genetic analysis of autosomal dominant multiple syringomas</b> Toshihide Higashino, Chao-Kai Hsu, Christos Petridis, Christos Tziotzios, Alexandros Onoufriadis, Wei-Ming Wu, Michael Simpson, John McGrath	
PO10-017	305
<b>Five novel RECQL4 mutations in four patients with Rothmund-Thomson syndrome and analysis of RECQL4 mRNA expression in one typical patient</b> Qiu-yun She, Lu-zhu Chen, Ting-mei Wang, Ying-ying Dong, Yun-hua Deng	
PO10-018	306
<b>SASH1 related autosomal-dominant dyschromatosis</b> Ting-Mei Wang, Qiu-Yun She, Ying-Ying Dong, Yun-Hua Deng	
PO10-023	306
<b>A novel type of hereditary angioedema: HAE due to a plasminogen mutation</b> Georg Dewald	
PO10-028	307
<b>A novel mutation in keratin 5 cause a mild recessive epidermolysis bullosa simplex</b> Ming Li, Fu-Ying Chen, Dan Deng, Xue Zhang, Yan Gu, Ru-hong Cheng, Jian-ying Liang, Lu-yao Zheng, Yue Li, Zhi-Rong Yao	
PO10-030	307
<b>Comorbidities or different entities? Phenotype variability associated with psen1 mutations</b> Wen-Rui Li, Hao-Xiang Xu, Yan-Yan He, Lin Lin, Cheng-Rang Li	
PO10-037	308
<b>Terminal osseous dysplasia with pigmentary defects in a Chinese girl with FLNA mutation</b> Zhong-Tao Li, Yao Xie, Lin Wang	

PO10-040	308
<b>Junctional epidermolysis bullosa complicated with nephrotic syndrome</b> Li Ding, Xing-Li Zhou, Pradhan Ojaswi, Krista Shrestha, Xiao-Ping Du, Mei Yang, Song Lei, Wei Li	
PO10-001	308
<b>Association between polymorphisms in the promoter region of miR-17-92 cluster and systemic lupus erythematosus in a Chinese population</b> Rong Wang	
PO10-003	309
<b>Rothmund-thomson syndrome: 4 new cases from three unrelated families in China</b> Xin-Yue Zhang, Yi Zheng, Qiang Zhao, Qing-Yan Li, Zhao-Wei Chu, Song-Mei Geng	
PO10-006	309
<b>A case of Blau syndrome with H313R and R471C mutations in NOD2/CARD15.</b> Yi Zheng, Xin-Yue Zhang, Qiang Zhao, Jing Li, Song-Mei Geng	
PO10-009	310
<b>Progressive osseous heteroplasia in a five-month-old boy: a case report</b> Zheng-Xiu Li, Xing-Hua Gao	
PO10-010	310
<b>Severe combined immunodeficiency presented as mixed infection</b> Cong-Cong Xu, Hao Chen, Jian-Fang Sun	
PO10-012	311
<b>Novel compound heterozygous mutations in RAG1 in a patient with cutaneous lymphoproliferative disease: A case report</b> Cong-Cong Xu, Zhi-Ming Chen, Jing-Shu Xiong, Hao Chen, Jian-Fang Sun	
PO10-013	311
<b>Fine mapping and subphenotyping implicates ADRA1B gene variants in psoriasis susceptibility in a Chinese population</b> Xing Fan	
PO10-014	312
<b>A case of primary erythromelalgia</b> Rong-Xin Zhang, Cai-Xia Tu, Ling Sun, Ling Jin	
PO10-015	312
<b>Generalized linear porokeratosis coexisted with multiple SCCs</b> Qiang Zhao, Song-Mei Geng, Hong-Mei Zhou, Qian Shang	
PO10-016	313
<b>Gene mutation analysis of one Chinese patient with keratosis follicularis spinulosa decalvans</b> Zhuang-Li Tang, Sheng-Xiang Xiao, Xin-Wu Niu, Xiao-Peng Wang	
PO10-019	313
<b>Missense mutation of the ABCC11 gene is associated with axillary osmidrosis susceptibility and clinical phenotypes in the Chinese Han population</b> Yun-Qing Ren, Hua-Tuo Dai, Lun-Fei Liu, Min Zheng	
PO10-020	313
<b>Trichoepithelioma in monozygotic twins: A case report</b> Zhao-Yuan Wang, Xue-yan Chen, Xiao-Yong Man	
PO10-021	314
<b>Lamellar ichthyosis: A case report</b> Juan Bai, Jian-Jun Qiao, Yin-Hua Wu, Hong Fang	
PO10-022	314
<b>A novel frameshift SERPINB7 mutation in a Chinese case with Nagashima-type palmoplantar keratosis: case report and review of the literature</b> Sheng-Yuan Hua, Xiao Miao, Wei-Wei Mao, Liang Hua, Jie Chen, Bin Li	
PO10-024	314
<b>A diagnostic algorithm of genetic reticulate pigmentary disorders</b> Jia Zhang, Ming Li, Zhi-Rong Yao	

PO10-025	315
<b>Effects of DOCK8 deficiency on IL-10 producing regulatory B cells</b> Jin-Qiu Jiang, Tao Qin, Xiao-Dong Zhao, Xiao-Yan Luo, Hua Wang	
PO10-026	315
<b>First male infant with incontinentia pigmenti and a deficiency in the NEMO pathway in China</b> Jing Zhang, Min Lin, Meng-Ting Lin, Jin-Wen Huang, Chao Ji, Bo Cheng	
PO10-027	316
<b>A case report of scrotum steatocystoma multiplex</b> Yan Li	
PO10-029	316
<b>Novel compound heterozygous mutations in GJB3 gene in a family with erythrokeratoderma variabilis et progrssiva</b> Yong-Qiong Deng, Xia Xiong	
PO10-031	316
<b>A case of collodion baby report</b> Shi Gong, Qiao Liu, Qing-Shan Li	
PO10-033	317
<b>A case report of pachydermoperiostosis</b> Jin Qing, Mei-Ping Huang	
PO10-034	317
<b>Eruptive pruritic papular porokeratosis: A case report and literature review</b> Wanlu Zhang, Cheng-Rang Li	
PO10-035	317
<b>A Chinese Hermansky–Pudlak Syndrome patient with two novel mutations on HPS4 gene</b> Teng Liu, Ye-Feng Yuan, Xiu-Min Yang, Ai-Hua Wei	
PO10-036	318
<b>Application of MLPA in the genetic testing of oculocutaneous</b> Ying-Zi Zhang, Da-Yong Bai, Zhan Qi, Su-Zhou Zhao, Xiu-Min Yang, Wei Li, Ai-Hua Wei	
PO10-038	318
<b>Case series of neck accessory tragus</b> Jian Shi, Zhi-Xiang Hua, Xu Miao	
PO10-039	318
<b>A rare splicing mutation of MVK gene in one family with facial porokeratosis</b> Hui Chen, Rui-Feng Sun, Wei Zhu, Shi Lian	
PO10-041	319
<b>Genetic diagnosis of one patient misdiagnosed with epilepsy: A case report</b> Lin-Li Liu, Chun-Shui Yu	
PO10-042	319
<b>Novel mutations in Chinese Han patients with tuberous sclerosis complex: case series and review of the literature</b> Li-Yun Zheng, Min Gao	
PO10-043	319
<b>CHILD syndrome with alopecia: the NSDHL gene and its role in hair follicle development</b> Dan Wang, Sheng Wang	
PO10-044	320
<b>A novel heterozygous missense mutation of the DSG1 gene in a Chinese family with diffuse non-epidermolytic palmoplantar keratoderma</b> Dan Wang, Sheng Wang	
PO10-045	320
<b>Mutation analysis in a family with woolly hair</b> Cong Yu, Xue-Yan Yao, Guang-Dong Wen, Cheng Zhou, Jian-Zhong Zhang, Hong-Jun Xu	

## *PO11 Metabolic and Endocrine Disorders*

- PO11-001 321  
**Investigation and analysis of humoral autoimmunity in the risk factors of pretibial myxedema**  
Chang-Gui Lan
- PO11-002 321  
**Pretibial myxedema presenting as elephantiasis**  
Sang-Myung Park, Joong-Yoon Choi, Ye-Jin Lee, Bark-Lynn Lew, Woo-Young Sim
- PO11-003 322  
**Skin vegetations: a rare sign of primary systemic amyloidosis**  
Meng-Hua Li, Li-Ming Wu, Zhang-Yu Bu
- PO11-004 322  
**Primary system amyloidosis: a case report and review of the literature**  
Jia-Jia Xie, Xiang Xie, Kang Zeng, Kai Cui
- PO11-005 322  
**Porphyria cutanea tarda**  
Xia Hua, Yong-Hong Lu
- PO11-006 323  
**Papular xanthomas with a destructive osteoarthropathy: A rare association**  
Pei-Mei Zhou, Lin Wang, Fan Li, Si-Yu Chen
- PO11-007 323  
**Generalized erythematous papules, plaques and thereafter hardening of the skin**  
Lu Gan, Hao Chen, Yi-Qun Jiang, Jian-Fang Sun
- PO11-008 323  
**Scleromyxedema: A case report**  
Wen-Yuan Ding, Xin-Xiang Lyu
- PO12 Photodermatoses*
- PO12-005 324  
**n-3 PUFA protect skin from ultraviolet induced acute injury on SKH-1 hairless mice**  
Pei-Ru Wang, Yu-Ting Xu, Jia-Tong Han, Xiu-Li Wang
- PO12-006 324  
**Knowledge, attitudes and practice about solar ultraviolet radiation between urban and rural residents in Beijing**  
Fen Peng, Man Li, Zhou Chen, Jian-Zhong Zhang
- PO12-008 325  
**Voriconazole enhances skin tumor development by UVB through the mechanism its induction of inflammatory response**  
Nozomi Yamano, Makoto Kunisada, Chieko Hosaka, Chihiro Takemori, Chikako Nishigori
- PO12-001 325  
**Degraded melanosomes are incompetent to protect epidermal keratinocytes against UV damage**  
Tie-Chi Lei
- PO12-003 326  
**Association of chronic sun exposure with distinct histone acetylation changes in human skin**  
Shu Ding, Jing Chen, Qing-Hai Zeng, Ai-Yuan Guo, Jian-Yun Lu, Li-Na Tan, Jian Kang, Jin-Hua Huang
- PO12-004 326  
**Risk factors for rosacea in China: A retrospective case-control study**  
Ben Wang, Ying-Xue Huang, Ji Li, Dan Jian, Hong-Fu Xie, Wei Shi
- PO12-007 327  
**In vivo CLSM features of rosacea**  
Yu-Juan Xiao, Qing-Chun Diao, Kang Zeng
- PO12-009 327  
**Observation of Colloid Milium by dermoscopy and Literature Review**  
Ying Ji, Wen-Li Feng, Yan Ma, Jin-Yu Zhang, Jia-Jia Wang, Xiao-Qiang Jia

## *PO13 Pigmentary Disorders*

- PO13-004 327  
**Using reflectance confocal microscopy to observe in vivo melanolysis after treatment with the picosecond alexandrite laser and Q-switched Nd: YAG laser in melasma**  
Da Jung Jo, In-Hye Kang, Ji Hwoon Baek, Min Jae Gwak, Sang Jun Lee, Min Kyung Shin
- PO13-007 328  
**Linearly distributed multiple melanocytic nevi on the right shin**  
Yeong Ho Kim, Hyun Ji Lee, Soo Young Lee, Hyo Jung Kim, Yu Mee Song, Ju Hee Han, Chul Hwan Bang, Ji Hyun Lee, Young Min Park, Jun Young Lee
- PO13-013 328  
**Comparison of dermoscopic features between congenital and acquired acral melanocytic nevi in Korean patients**  
Dongyoung Roh, Woo-Il Kim, Min-Young Yang, Won-Ku Lee, Tae-Wook Kim, Sung-Min Park, Hyun-Joo Lee, Gun-Wook Kim, Hoon-Soo Kim, Hyun-Chang Ko, Byung-Soo Kim, Moon-Bum Kim
- PO13-019 329  
**Psychological and neurological effects in the onset, development and prevention of vitiligo**  
Man Li, Juan Du
- PO13-023 329  
**Incontinentia pigmenti in a Japanese female infant with a novel frameshift mutation in the *IKBKG* gene**  
Min Li
- PO13-024 329  
**Repigmentation of vitiligo-associated leucotrichia with traditional Chinese medicine**  
Qi-Ping Chen, Xian-Ting Xu, Min-De Chen
- PO13-025 330  
**Ashy dermatosis with positive patch test to gold sodium thiosulfate, cobalt chloride and carba mix**  
Ayumi Korekawa, Koji Nakajima, Hajime Nakano, Daisuke Sawamura
- PO13-027 330  
**Involvement of Dickkopf-related protein 1 in melanogenesis: focus on solar lentigo lesion**  
Yin-Juan Wang, Céline Viennet, Jean Yves Berthon, Li He, Philippe Humbert
- PO13-001 331  
**Dermal nevus cells from congenital nevi or acquired pigmented nevus can penetrate the dermis when seeded on the de-epidermized dermis alone**  
Xian Dong, Hong-Guang Lu, Lei-wei Jiang, Yuan-Zhi Huang
- PO13-002 331  
**Oxidative stress enhances CD8+T cells activation and cytotoxicity in vitiligo via upregulating IL-15 expression through activating the NFκB pathway in keratinocytes**  
Xu-Guang Chen, Jia-Xi Chen, Pan Kang, Shu-Li Li, Gang Wang, Tian-Wen Gao, Chun-Ying Li
- PO13-003 332  
**Clinical application exploration of VISIA in nursing of patients with chloasma**  
Shi-Qin Tao
- PO13-005 332  
**A pilot study of oral tranexamic acid and glycyrrhizin compound in the treatment of recalcitrant Riehl's melanosis**  
Zhong-Yi Xu, Xiao-Xue Xing, Li Chen, Lei-Hong Xiang
- PO13-006 332  
**TRPM2-dependent NLRP3 inflammasome activation exacerbates the oxidative stress-driven immune response in patients with vitiligo**  
Shu-Li Li, Pan Kang, Wei-Gang Zhang, Xiu-Li Yi, Gang Wang, Tian-Wen Gao, Zhe Jian, Chun-Ying Li
- PO13-009 333  
**Clinical research of 308 nm excimer lamp combined with 830 nm infrared light in the treatment of vitiligo**  
Caixia TU, Mei-Ya Jiang, Yang Wang, Ya-Hui Chen

PO13-010	333
<b>Association analysis revealed one susceptibility locus associated with vitiligo in the Chinese Han population</b>	
Fang Fang, An-Ping Zhang, Xian-Fa Tang, Jing-Jing Yang, Su-Li Zhao	
PO13-011	334
<b>Dermoscopy evaluation the efficacy of isotretinoin treatment of confluent and reticulated papillomatosis</b>	
Xin Zhou	
PO13-012	335
<b>A case report of pigmented pityriasis rosea in child</b>	
Yong-hong Lu, Min Lin	
PO13-014	335
<b>A case of facial nevus depigmentosus getting remarkable repigmentation by treatment with 308-nm excimer laser</b>	
Qing-Hai Zeng, Qi Shi, Jin-Hua Huang, Jian Huang, Zhen Tang, Cai-Yun Xi, Jing Chen	
PO13-015	335
<b>A Case of Laugier-Hunziker syndrome with platelet reduction misdiagnosed as multiple hairpins</b>	
Chun-Yang Zhang, Xue-Li Li, Zhen-Lu Li, Qi Zhang, Hong Chen	
PO13-016	336
<b>Effects of PINK1 on melanocyte damage induced by oxidative stress</b>	
Li-Juan Wang, Xiao-Lan Ding, Zhen Li, Man Li, Qian-Xi Xu, Jian-Zhong Zhang, Juan Du	
PO13-017	336
<b>Regulation of miRNA-211 by MMP9 affects the adhesion ability of epidermal melanocyte to basement membrane</b>	
Meng-Yun Su, Tie-Chi Lei	
PO13-018	337
<b>Vitamin C and its derivatives suppress melanogenesis through acidification in melanocytes</b>	
Fang Miao, Tie-Chi Lei	
PO13-020	337
<b>Metformin: ameliorate the melanocyte of vitiligo by inducing autophagy through AMPK/mTOR signal pathway</b>	
You Hua, Xiu-Zu Song	
PO13-021	337
<b>Melanotic lupus erythematosus: A report of two cases and literature review</b>	
Qian-Yue Xu, Yu-Wei Kong, Bo Ling, Yan Li, Hong Yu, Zhi-Rong Yao	
PO13-022	338
<b>Clinical observation on the treatment of vitiligo with carbon dioxide fractional laser together with topical medication</b>	
Chen-Chen Si, Dan Luo	
PO13-026	338
<b>Dowling–Degos disease: uptodate progresses in research</b>	
Yingda Wu, Wen-Rui Li, Wan- Zhang, Ping Cheng, Cheng-Rang Li	
PO13-028	339
<b>Characteristics and clinical significance of dermoscopy and reflectance confocal microscopy in children with hypopigmented diseases</b>	
Jian-Ping Tang, Huan Wang	
<i>PO14 Psoriasis</i>	
PO14-003	340
<b>IL17F rs763780 polymorphism is associated with psoriasis and increases serum levels of interleukin-17F</b>	
Yong Beom Choe, Ji Youn Hong, Jin Hee Kim, Joo Ran Hong, Hye In Cheon, Min Seok Hur, Byung Gon Choi, Song Hee Han, Yang Won Lee, Kyu Joong Ahn	

PO14-004	340
<b>A case of psoriasis vulgaris developed in an epidermolysis bullosa simplex patient</b>	
Mi-youn Park, Ji-young Ahn, Hye-jung Jung, Hong-lim Kim, Joo-yoon Bae, Jae-in Lee, Dong-hyek Jang	
PO14-005	340
<b>Disseminated tuberculosis after adalimumab therapy in psoriasis patient</b>	
Hai-Jin Park, Jae Hong Oh, Hee Jae Park, Cheong Ha Woo, Mira Choi, Seung Pil Ham	
PO14-010	341
<b>Beneficial effect of Montecatini thermal water upon various enzymes including NADH dehydrogenase in modulation of epidermal keratinization.</b>	
Tomohiro Noguchi, Kazue Kato, Takashi Ishikawa	
PO14-018	341
<b>Good response to secukinumab in patient with palmoplantar pustulosis resistant to other biologics</b>	
InJae Jeong, SeungHui Seok, JiHae An, SeonGu Lee, HeeJung Lee, MoonSoo Yoon, DongHyun Kim	
PO14-019	342
<b>A case of interstitial lung disease and autoimmune thyroiditis associated with ustekinumab</b>	
Seon Gu Lee, Seung Hui Seok, Ji Hae An, In Jae Jeong, Dong Hyun Kim, Moon Soo Yoon, Hee Jung Lee	
PO14-020	342
<b>Down-regulation of LncRNA RP6-65G23.1 inhibits cell proliferation by p-ERK/p-AKT pathway</b>	
Qi-Qi Duan, Yan Zheng	
PO14-034	343
<b>Development of pemphigus vulgaris in a patient with erythrodermic psoriasis: because of virus?</b>	
Xin Zhao, Xiao-Qing Zhao, Meng Pan, Jie Zheng	
PO14-044	343
<b>A case of generalized pustular psoriasis with incremental administration of infliximab and granulocytapheresis in response to weak effect of secukinumab</b>	
Fuminao Kanehisa	
PO14-048	343
<b>Secukinumab decreases the serum KL-6 level in psoriasis patients with elevated serum KL-6 level</b>	
Hideaki Uchida, Masahiro Kamata, Chika Chijiwa, Shintaro Takeoka, Saki Fukaya, Kotaro Hayashi, Atsuko Fukuyasu, Takamitsu Tanaka, Takeko Ishikawa, Takamitsu Ohnishi, Yayoi Tada	
PO14-051	344
<b>Increased risk of atherosclerotic cardiovascular disease among the patients with psoriasis in Korea: a 17-year nationwide prospective cohort study</b>	
Jongwook Oh, Tae-Gyun Kim, Keum Ji Jung, Jae Won Lee, Minseok Lee, Sun Ha Jee, Min-Geol Lee	
PO14-054	344
<b>Prevalence of nonalcoholic fatty liver disease diagnosed by ultrasonography in psoriasis patients with abnormal liver function test</b>	
Hyunyi Suh, Ji Young Ahn, Mi Youn Park, Jai Il Youn	
PO14-001	345
<b>Pathological actors of surgical wound healing in psoriasis</b>	
Hang Shi	
PO14-002	345
<b>Study on the role of RIPK3 in the pathogenesis of psoriasis</b>	
Meng-Di Zhang, Yan Zheng	
PO14-006	346
<b>A case of inflammatory polyarthritis in a patient with psoriasis-psoriatic arthritis or rheumatoid arthritis</b>	
Xu-Guang Chen, Guan-Nan Zhu, Xiao Zhang, Meng Fu, Gang Wang, Tian-Wen Gao, Chun-Ying Li	

PO14-007	346
<b>Intradermal and topical bioavailability of a vasodilator in normal and psoriatic skin</b> Yue Zheng, Wei Lai, Howard Maibach	
PO14-008	347
<b>IL-22 downregulates Cx43 expression and decreases gap junctional intercellular communication through activating JNK pathway in psoriasis</b> Jing-Yao Liang, Ping-Jiao Chen, Chang-Xing Li, San-Quan Zhang, Ru-Jun Xue, Jian-Qin Wang, Xi-Bao Zhang	
PO14-009	347
<b>Long-term safety and efficacy of continuous acitretin monotherapy for three children with different severe hyperkeratotic disorders in China</b> Jing-Yao Liang, Ping-Jiao Chen, San-Quan Zhang, Xin Tian, Xi-Bao Zhang	
PO14-011	347
<b>Waist-to-hip ratio) and body mass index: The comparison of the predictive value of the severity of psoriasis</b> Dan-Rong Jing	
PO14-012	348
<b>Microbiome community analyses identify propionibacterium and corynebacterium as psoriasis-specific taxa</b> Cheng Quan, Jie Zheng	
PO14-013	348
<b>A new risk polymorphism rs10403848 of CARD8 significantly associated with psoriasis vulgaris in northeastern China</b> Pei Yu, Yu-Zhen Li	
PO14-014	349
<b>Circular RNA expression profile and analysis of their potential function in psoriasis</b> Meng Qiao	
PO14-015	349
<b>Depression and anxiety among patients with psoriasis: a hospital-based study</b> Xing-Yu Zhang, Yi Xiao	
PO14-016	350
<b>A randomized, double-blind, controlled clinical study on the curative effect of Huaier on mild-to-moderate psoriasis and an experimental study on the proliferation of Hacat cells</b> Feng Zhang	
PO14-017	350
<b>Comparison of efficacy and factors affecting relapse after drug withdrawal of two biologics in treatment of moderate to severe psoriasis</b> Xia Li, Ni Na	
PO14-021	351
<b>Association of <i>NLRP1</i> and <i>NLRP3</i> polymorphisms with psoriasis vulgaris risk in northeastern China</b> Pei Yu, Yu-Zhen Li	
PO14-022	351
<b>Expression and function of CGRP and 5-HT in the mouse psoriasis model with depression</b> Hong-Mei Wang, Hui Wang	
PO14-023	352
<b>Successful treatment of three cases refractory psoriasis with infliximab</b> Jian-Xin Xia, Xian-Hua Jin, Yan Mou, Xin-Yi Huang	
PO14-024	352
<b>Enhanced Cyr61 levels in patients with psoriasis vulgaris</b> Li-Xin Fu, Tao Chen, Qiao-Mei Sun, Pei-Mei Zhou, Li-Wen Zhang	
PO14-025	353
<b>Enhanced serum interferon-lambda 1 interleukin-29 in patients with psoriasis vulgaris</b> Li-Xin Fu, Tao Chen, Qiao-Mei Sun, Pei-Mei Zhou, Li-Wen Zhang	

PO14-026	353
<b>A case of generalized verrucous planus lichen combined with thymoma and cirrhosis</b> Li-Li Deng	
PO14-027	354
<b>Research progress of traditional chinese medicine treatment for psoriasis vulgaris</b> Wen-Zhao He, Hua Du	
PO14-028	354
<b>PD-1 targeted therapies rebalance T-cell activity to erect autoimmunity in psoriasis</b> Shiguang Peng, Mei Cao, Xin Li, Hong-Shen Wang, Sheng-Cai Qi, Yan-Ling He	
PO14-029	354
<b>Efficacy and safety of infliximab in the treatment of the Chinese patients with psoriasis</b> Jin-Zhu Guo, Wen-Hui Wang, Chun-Lei Zhang	
PO14-030	355
<b>Advanced findings of proteomic in psoriasis</b> Yuan Zhou, Min Zheng	
PO14-031	356
<b>MiR-20a-3p regulates TGF-<math>\beta</math>1/Survivin pathway to affect keratinocytes proliferation and apoptosis by targeting SFMBT1 in vitro</b> Rong-Hua Li	
PO14-032	356
<b>Investigation of the clinical and immunological characteristic of eczematous psoriasis</b> Di-Xin Wang, Jie Zheng	
PO14-033	357
<b>A case of psoriasis rupioides</b> Yun-Lei Pan, Shun-Li Tang, Si-ting Zheng, Sha Zhou, Li-Na Xu, Jian-Jun Qiao, Hong Fang	
PO14-035	357
<b>Local production of prolactin in lesions may play a pathogenic role in psoriatic patients and imiquimod-induced psoriasis-like mouse model</b> Hui Yang, Xia Li, Feng Xue, Qun-Li Xia, Xin Zhao, Di- Wang, Li-Hong Chen, Hua Cao, Han Xu, Xiao-Yan Shen, Wei-Ru Yuan, Xiao-Qing Zhao, Ruo-Fei Shi, Jie Zheng	
PO14-036	358
<b>Observation of the clinical efficacy in long-term infliximab treatment of psoriasis</b> Xin Guan, Chun-Lei Zhang	
PO14-037	358
<b>Progress of psoriasis and PD-1 correlation research</b> Sheng-Yuan Hua, Jie Chen, Bin Li, Rong Xu, Yi-Fei Wang, Wei-Wei Mao, Xiao Miao	
PO14-038	358
<b>Study on the relationship between the TCM four diagnosis methods and the curative effect of psoriasis based on the four-element connection number</b> Sheng-Yuan Hua, Bin Li, Qi Zheng, Rong Xu, Xin Li, Ke-Qin Zhao	
PO14-039	359
<b>Research progress of psoriasis and PRINS lncRNA correlation</b> Sheng-Yuan Hua, Xiao Miao, Wei-Wei Mao, Xin Li, Bin Li, Jie Chen	
PO14-040	359
<b>Sexual function in psoriatic males</b> Jing Zhang, Chao Ji, Bo Cheng, Jin-Wen Huang, Min Lin	
PO14-041	360
<b>Microbiota unbalance deteriorated psoriasiform dermatitis by T cell response</b> Jing-Wen Deng, Ling Han, Chuan-Jian Lu	
PO14-042	360
<b>Clinical application of Etanercept (Yisaipu®) to treat 5 patients with severe psoriasis</b> Ying-Guo ding, Shan Zhang, Xiao-Min Li	
PO14-043	361
<b>A young man with recurrent cough, fever, skin rash, headache, muscle and joint pain: SAPHO syndrome involving lung and dura mater</b> Zhen-Ying Zhang	

PO14-045	361
<b>Enhancement of Epidermal Function Delays Relapse of Psoriasis: A Pilot Self Controlled Trial</b> Li Ye, Jeong Sekyoo, Jongmi Lim, Wenhai Luo, Chengzhi Lv, Zhen Wang, M.Elias Peter, Mao-Qiang Man	
PO14-046	362
<b>Urine squamous cell carcinoma antigen in psoriasis patients: the first pilot study</b> Yi Zhao, Zi-Wen Sun, Xiao-Min Shi, Yun Wang, Su-Zhen Ji	
PO14-047	362
<b>Relationship between traditional Chinese medicine constitutional types with psoriasis vulgaris (winter type): an observational study</b> Jiao Yang, Chen-Chen Xu, Zhan-Shuo Xiao, Bing-Nan Cui	
PO14-049	363
<b>Differentially expressed genes of psoriasis in Xinjiang by gene expression profile</b> Fei Guo, Liang Feng, Fang-Ling Ma, Rui Yang, Hong-Xia Liu	
PO14-050	363
<b>Molecular mechanism of paeoniflorin regulating keratin 17 expression in the targeted therapy of psoriasis</b> Xiao-Cui Bai, Chen Yu, Er-Le Dang, Gang Wang	
PO14-052	364
<b>Self-management system for psoriasis patients based on artificial intelligence technology</b> Xiao-Ming Liu, Kai Liu, Su-Chun Hou, Zhen-Ying Zhang, Zheng-Feng Li, Ying Yang, Yu-Lin Zheng	
PO14-053	364
<b>Efficacy of etanercept and acitretin on erythrodermic psoriasis</b> Feng Li	
<i>PO15 Sexually Transmitted Diseases</i>	
PO15-004	365
<b>Histologic and immunohistochemical analysis of secondary syphilis</b> Yu-Wei Wang, Ying Zhou	
PO15-016	365
<b>Chronic syphilitic monoarthritis in a delayed diagnosis of the patient without lesion</b> Chen Li, Xi-Guang Liu	
PO15-022	365
<b>Epidermiological Investigation of HPV and Chlamydia trachomatis Co-Detection on cervical samples of women with external genital warts</b> Man-Li Qi, Lin Zhu	
PO15-027	366
<b>CXCL13+ fibroblast-like cells and inducible skin-associated lymphoid tissue (iSALT)-like structures in secondary syphilis</b> Takashi Nomura, Toshiaki Kogame, Kenji Kabashima	
PO15-001	366
<b>HIV associated cell death: necrosis enhances, while apoptosis restricts viral transmission</b> Jian-Bo Zhang, Shi-Song Jiang, Wenshu Lu, Hui Luo, Xu-Ying Zhou, Qing-Ling Li	
PO15-002	367
<b>Human papillomavirus-like particles activate Toll-like receptor signaling pathway and inhibit autophagy in dendritic cells</b> Si-Yuan Sun, Rui Han, Hao Cheng	
PO15-003	367
<b>Expression and significance of lncRNA RP11-1100L3.8 in condyloma acuminatum</b> Xiao-Yan Liu, Li-Ming Ruan, Yu Zhang	
PO15-005	368
<b>A comparative study of intestinal flora, short-chain fatty acids, and injury of intestinal mucosal in HIV-positive and -negative subjects</b> Fan Cui, Hang-Yu Xie, Yong Qing	

PO15-006	368
<b>Clinical analysis of HIV/AIDS patients with solar dermatitis</b> Yu-ye Li, Ummair Saeed	
PO15-007	369
<b>Clinical prediction and diagnosis of neurosyphilis in patients without human immunodeficiency virus infection</b> Wu-Jian Ke	
PO15-008	369
<b>Successful treatment of Jarisch-Herxheimer reaction in a patient with neurosyphilis</b> Xin Su, Ming-Ming Liu, Xiao-Wen Xue, Wen-Jun Liao, Gang Wang, Cui-Ling Ma	
PO15-009	369
<b>A novel nested real-time PCR for Treponema pallidum DNA in syphilis biospecimens</b> Xing-Dong Ye, Yi Zhang, Xiang-Nong Dai, Ze-Fang Ren, Hong-Da Lin	
PO15-010	370
<b>Detection and clinical significance of self-made HPV16 E7 polyclonal antibody in cervical lesions</b> Ling-Jing Chen, Hao Cheng	
PO15-011	371
<b>Autophagy activation is involved in HPV11 E6 transfected HaCaT cell via mTOR pathway</b> Boya Zhang, Hao Cheng	
PO15-012	372
<b>Transcriptional regulation of genes in cervical epithelial cell line containing HPV16 E6</b> Si-Yuan Sun, Rui Han, Hao Cheng	
PO15-014	372
<b>Analysis of clinical features of asymptomatic neurosyphilis</b> Cheng Zhan, Pei-Hong Sun	
PO15-015	373
<b>Expert Consensus: Determine and ermeasures on drug-resistance and persist infection of Chlamydia trachomatis genital Infection</b> Man-Li Qi	
PO15-017	373
<b>Relapsing secondary syphilis of reintection: a case report</b> Mei Yang	
PO15-018	373
<b>A systematic review of atypical cutaneous manifestations of secondary syphilis</b> Xiao-Ke Liu, Jun Li	
PO15-019	374
<b>Papulonodular secondary syphilis presenting as pseudolymphoma of the skin</b> Guo-Zhang Ma, Xi-Guang Liu	
PO15-020	374
<b>Predictors for serofast state after treatment among patients with syphilis: A systematic review</b> Xiao-Ke Liu	
PO15-021	375
<b>Malignant syphilis in a HIV negative male patient</b> Liu-Yuan Wang, Hong-Fang Liu, Bin Yang, Li-Gang Yang	
PO15-023	375
<b>Molecular prevalence of 23S rRNA resistant mutation sites 2058G and 2059G in Xinjiang Treponema pallidum</b> Xiao-Dong Wang	
PO15-024	375
<b>Clinical significance of abnormal expression of IL-21 inpatients of GH</b> Shi Gong, Qiao Liu, Qing-Shan Li	

PO15-025	376
<b>Changes of the Serum IL-21 Levels in the patients with genital herpes before and after valciclovir joint thymopeptid enteric-coated tablets therapy</b>	
Shi Gong, Qiao Liu, Qing-Shan Li	
PO15-026	376
<b>Sensitive detection of Treponema pallidum DNA from the whole blood of patients with syphilis by the nested PCR assay</b>	
Cui-Ni Wang, Yuan-Yuan Cheng, Yuan-Yuan Wang, Wei-Ming Gong, Yi-Hong Qian, Zhi-Fang Guan, Hai-Kong Lu, Xin Gu, Mei Shi, Ping-Yu Zhou	
PO15-028	377
<b>Prevalence and genotype of Human Papillomavirus in different sites of condyloma acuminatum patients</b>	
Chun-Ping Ao, Jia-Jia Xie, Li-Fen Jiang, Hui Liu, Jun-Peng Li, Kang Zeng	
PO15-029	377
<b>Secondary syphilis presented with impetigo-like lesions: A rare case report</b>	
Qiao-Fei Li, Xue-Biao Peng	
PO15-030	378
<b>Circulating microRNAs as potential biomarkers for the diagnosis of neurosyphilis</b>	
Kai-Qi Wu, Su-Fang Zhang, Ping-Yu Zhou	
PO15-031	379
<b>HSV-2 related recurrent genital ulcerate disease: Where we are?</b>	
Ping-Yu Zhou	
<i>PO16 Therapies</i>	
PO16-010	379
<b>Comparison of micro-insulated needle radio frequency (RF) versus carbon dioxide (CO<sub>2</sub>) laser in the treatment of syringoma</b>	
Mi-youn Park, Ji-young Ahn, Hye-jung Jung, Hong-lim Kim, Joo-yoon Bae, Jae-in Lee, Dong-hyek Jang	
PO16-011	380
<b>Large steatocystoma multiplex of forehead successfully treated with a novel 1, 927 nm diode laser</b>	
You Jin Jung	
PO16-012	380
<b>Hair growth-promoting effect of sphingolipid-mimetic compounds</b>	
Jun Hong Park, Dong Hyuk Eun, Jun Young Kim, Yong Hyun Jang, Seok-Jong Lee, Do Won Kim, Weon Ju Lee	
PO16-013	381
<b>Successful dose tapering of adalimumab by increasing interval between doses in treatment of psoriasis</b>	
Mi-youn Park, Jai-il Youn, Ji-young Ahn, Hye-jung Jung, Hong-lim Kim, Joo-yoon Bae, Jae-in Lee, Dong-hyek Jang	
PO16-014	381
<b>Two cases of wound healing by combining negative pressure wound therapy with noninvasive surgical skin closure device</b>	
Toru Kawai, Daisuke Yamada, Jun Omatsu, Yuka Mizuno, Keiko Fukazawa, Satoshi Toyama, Ai Kuzumi, Minami Sakamoto, Shunsuke Miura, Naomi Takahashi-Shishido, Kaname Akamata, Shinichi Sato	
PO16-018	381
<b>A case of subungual wart invading the nail root successfully cured with surgery combined with photodynamic therapy</b>	
Min-Zhi Wu, Liang Zhao	
PO16-020	382
<b>Fractional ultrapulse carbon dioxide laser ablation of xanthelasma palpebrarum: A case series</b>	
Sangju Lee, Wonsoon Chung	

PO16-021	382
<b>Mycobacterium Chelonae/abscessus complex infection of the limbs: a challenging clinical case</b> Li-Dan Zhang, Xin Zhou, Ling Lin, Xin Tian, Quan Luo	
PO16-026	382
<b>Therapeutic observation and mechanism analysis of the lymphoplasma exchange therapy in refractory severe immune related dermatosis</b> Shi-Jia Rao, Bi-Juan Li, Ji Li, Hong-Fu Xie, Ming-Liang Chen, Shuang Zhao, Ya-Ling Wang, Wei Shi, Qian-Jin Lu	
PO16-035	383
<b>Plum-blossom needling enhanced efficacy of ALA photodynamic therapy for the treatment of Bowen's disease</b> Yun Wu, Pei-Ru Wang, Ling-Lin Zhang, Bo Wang, Xiu-Li Wang	
PO16-038	383
<b>Survey on usage and perception for acne patches and cosmetics advertised as effective against acne, compared with hospital treatments</b> Mi-youn Park, Ji-young Ahn, Hye-jung Jung, Hong-lim Kim, Joo-yoon Bae, Jae-in Lee, Dong-hyek Jang	
PO16-039	384
<b>ALA-PDT promotes IL-1<math>\beta</math> secretion and pyroptosis in SZ95 human sebocytes via activation of NLRP3 inflammasome</b> Yu-Fen Zhang	
PO16-048	384
<b>Multi-layered polyurethane foam technique as a skin graft bolster</b> Hiroshi Kato, Motoki Nakamura, Ai Horio, Akimichi Morita	
PO16-050	385
<b>Comprehensive treatments combined with ALA-PDT for 2 cases of malignant skin tumors</b> Ling Yang	
PO16-051	385
<b>Clinical efficacy of Scalpoo® shampoo regarding increase in hair thickness and decrease in hair shedding</b> Byung In Ro, Jong Baik Kim, Hoo Min Choi, Eun Jung Ko	
PO16-055	386
<b>A case of extensive burn injury treated with artificial dermis and cultured epithelial autograft</b> Tomofumi Numata, Takumi Sakamoto, Satoshi Tsuboi, Takanobu Kan, Mikio Kawai, Michihiro Hide	
PO16-059	386
<b>Study of pain level and relative factors during ALA-photodynamic therapy: A clinical retrospective analysis</b> Zhe Zheng, Yun-Feng Zhang, Ling-Lin Zhang, Lei She, Bo Wang, Xiu-Li Wang	
PO16-001	387
<b>Clinical observation of Qinglanxiaoyou decoction in treating multiple verruca vulgaris</b> Sheng-Yuan Hua, Jie Chen, Wei-Wei Mao, Xin Li, Bin Li	
PO16-003	387
<b>A new strategy for angiolymphoid hyperplasia with eosinophilia on auriculae</b> Qian Zhang, Wen-Bo Bu, Fang Fang	
PO16-004	387
<b>ALA-PDT suppressing the cell growth through Akt-/Erk-mTOR-p70 s6k pathway in human SZ95 sebocytes in vitro</b> Wen-Jie Liu, Qianqian Wang, Jiang Tuo, Yufeng Chang, Jiayi Ying, Min Jiang, Christos C. Zouboulis, Lei-Hong Xiang	
PO16-005	388
<b>A case of pruritus pigmented reticulated patches over the upper body.</b> Yue-Tong Qian, Dong-Lai Ma	
PO16-006	388
<b>Positive effects of hydrogen-water bathing in patients of psoriasis and parapsoriasis en plaques</b> Qin-Yuan Zhu, Yue-Shen Wu, Yong-Mei Li, Zi-Hua Chen, Lan-Ting Wang, Hao Xiong, Er-Hong Dai, Jian-Hua Wu, Bin Fan, Li Ping, Xiao-Qun Luo	

PO16-007	389
<b>Combining Steri-Strip with fusidic acid cream to treat the surgical wound on the face</b> Ming-Yi Chen, Zhe Dai, Feng Pan, Chuan-Peng Ying, Dong-Sheng Luo, Geng-Wu Dai	
PO16-009	389
<b>Autologous cultured epidermal grafts as a novel surgical approach for acral vitiligo</b> Jin-Ran Lin, Lu-Yan Tang, Shu-Jun Chen, Jian Li, Qin-Yuan Zhu, Wen-Yu Wu, Wen-Wen Fu, Jin-Hua Xu	
PO16-015	390
<b>Rosai-Dorfman disease primary to face: A case report</b> Ming-Jing Fu, Yong-Jun Piao, Zhi-Qi Song	
PO16-016	390
<b>Efficacy and safety of 2% supramolecular salicylic acid compared with 5% benzoyl peroxide/0.1% adapalene in the acne treatment: A randomized, split-face, open-label, single-center study</b> Yue Zheng, Wei Lai	
PO16-017	391
<b>A case of nasorostral sporotrichosis was misdiagnosed</b> Li Zhang, Ke-Ying Guo, Zhen-Ying Wang, Sheng-Hua Wang	
PO16-019	391
<b>Successful treatment of a case of cutaneous dirt-adherent disease using compound resorcinol ointment</b> Li-Jie Chen, Jing-Yao Liang, Xiao-Dong Li, Lei Shao, Yu-Mei Liu, Jian-Qin Wang	
PO16-022	392
<b>Ferroptosis may serve as negative regular in the pathogenesis of melanoma</b> Zhen-Ying Wang, Li Zhang, De-hui Jin, Dong-Mei Ma, Lin-Lin Xu	
PO16-023	392
<b>ALA-PDT in a patient with secondary perineum EMPD, palliative care rather than treatment</b> Shu-Zhan Shen, Pei-Ru Wang, Guo-Long Zhang, Jie Ji, Yun-Feng Zhang, Xiu-Li Wang	
PO16-024	392
<b>Aminolevulinic acid photodynamic therapy for recalcitrant facial flat warts</b> Si-Ting Zheng, Yun-Lei Pan, Shun-Li Tang, Sha Zhou, Jian-Jun Qiao, Hong Fang	
PO16-025	393
<b>Clinical observation of treating alopecia areata with total glucosides of white paeony capsules combined with CO2 He-Ne laser</b> Xuan Li	
PO16-027	393
<b>Curative effect observation of AHA combined hyaluronan dressing in treating 60 acne vulgaris cases</b> Ping Liu, Lan Liu, Wen-Ni Lei, Dan-Dan Luo	
PO16-028	394
<b>Function of comprehensive nursing intervention in treating acne vulgaris by AHA</b> Ping Liu, Lan Liu, Wen-Ni Lei, Yu-Dan Wang	
PO16-029	394
<b>Application of nursing intervention in treating slight and moderate acne patients by supermolecule BHA</b> Ping Liu, Lan Liu, Wen-Ni Lei, Qin Zhang	
PO16-030	394
<b>Photodynamic therapy with topical imiquimod treated a Bowen's disease secondary to leukoplakia in the vulvar region successfully: A case report</b> Yuan Cao, Chuan Ma, Jin-Song Han, Chun-Lei Zhang	
PO16-031	395
<b>Anti-tumor effects of dihydroartemisinin alone and in combination with methotrexate in cutaneous T-cell lymphoma cells</b> Qian Zhang, Yi-Meng Wang, Chun-Lei Zhang	

PO16-032	395
<b>Observation of the curative effect on chronic urticaria with acupoint catgut embedding therapy</b>	
Xiao-Ding Cheng, Yong-Hong Lu, Bo Wu, Pei-Mei Zhou, Cun-Huo Jiang, Jia-Hong Zhong, Qun-Ying Zhou	
PO16-033	396
<b>Successful treatment of three cases of perianal giant condyloma acuminatum with Paiteling</b>	
Jian-Xin Xia, Lei Yang, Xin-Yi Huang, Xian-Hua Jin	
PO16-034	396
<b>Conventional vs. daylight 5-Aminolevulinic Acid-Photodynamic therapy for actinic keratosis of the face and scalp: a randomized and prospective study in China</b>	
Lu-De Zhu, Pei-Ru Wang, Guo-Long Zhang, Ling-Lin Zhang, Xiao-Jing Liu, Chan Hu, Xiao-Qin Yang, Zhong-Xia Zhou, Xiu-Li Wang	
PO16-036	397
<b>Psoriasiform dermatitis with high fever in an old man: Bazex syndrome</b>	
Zhen-Ying Zhang	
PO16-037	397
<b>Clinical evaluation on the treatment of acute eczema with ozonated water hydrophaticcompress combined with desonide cream</b>	
Ya-Yun Fan, Shu-Ping Guo	
PO16-040	398
<b>Radiotherapy in keloids treatment</b>	
Rong Li, Kun Chen	
PO16-041	398
<b>Clinical Observation of acupoint-injection of Astragalus injection solution combined with CO2 He-Ne laser in the treatment of alopecia areata</b>	
Bo Wu	
PO16-042	399
<b>Clinical experience of treating dermatosis and cypridopathy with 5-aminolevulinic acid-photodynamic therapy (ALA-PDT)</b>	
Xue-Ying Liu	
PO16-043	399
<b>Comparison of the efficacy and safety of fractional CO2 laser and fractional Er: YAG laser for the treatment of xanthelasma palpebrarum: A randomized split-face controlled trial</b>	
Xiao-Han Duan, Yi Zhao	
PO16-044	400
<b>Treatment of rosacea with photodynamic therapy in Chinese patients: a pilot study</b>	
Rui Yin	
PO16-045	400
<b>5-aminolevulinic acid photodynamic therapy in refractory vulvar lichen sclerosus et atrophicus</b>	
Rui Yin	
PO16-046	401
<b>Effects of human acellular amniotic membrane for small defect on nasal ala and nasal tip</b>	
Si-Liang Xue	
PO16-047	401
<b>Clinical observation of 44 cases of 308 nm excimer light combined with phototherapy penetration oil in the treatment of localized vitiligo</b>	
Shi Gong, Qiao Liu, Qing-Shan Li	
PO16-049	402
<b>Clinical and pathological analysis on 25 cases with lichen planus pigmentosus</b>	
Hong Yang, Shi-Rong Yu	

PO16-052	402
<b>Ultrapulse carbon dioxide laser, an option to treat mild to moderate onychomycosis? A retrospective analysis</b>	
Xiao-Han Duan, Dian Chen, Yuan Jiang, Yi Zhao	
PO16-053	402
<b>Observation of the efficacy of anti-inflammatory combined with antifungal drugs in treating tinea incognito</b>	
Xin-Cai Xiong, Hai-Xia Liu	
PO16-054	403
<b>Desonide combine with timolol for the treatment of superficial infantile hemangiomas</b>	
Change Zhang, Wu Guo, Yu-Zi Di, Qing-Lian Ge	
PO16-056	404
<b>Clinical observation of gentamicin wet dressing combined with He-Ne laser in treatment of herpes zoster</b>	
Mi Gan, Li-Hui Peng	
PO16-057	404
<b>Efficacy of surgery combined with ALA photodynamic therapy for Bowens disease</b>	
Li-Hui Peng, Mi Gan	
PO16-058	404
<b>Clinical observation of cutaneous nerve block technique combined with intradermal injection of botulinum toxin a in treatment of postherpetic neuralgia</b>	
Shuai Tan, Tao-Yuan Huang, Ren-Liang He, Ding-Heng Zhu, Xian Ao	
PO16-060	405
<b>Demethylzeylasteral inhibits the skin trafficking of CD8+ T cells in patients with vitiligo through the inactivation of IFN-<math>\gamma</math>-JAK-STAT1-CXCL10 signaling pathway in keratinocytes</b>	
Yu-Qian Chang, Wei-Gang Zhang, Chun-Ying Li	
<i>PO17 Miscellaneous</i>	
PO17-001	405
<b>Dermoscopic features of vulvar lichen sclerosis in Chinese population</b>	
Yi-Xin Luo, Jie Liu	
PO17-004	406
<b>Generalized Granuloma annulare with tuberculosis and cutis laxa: A case report</b>	
Yi-Fei Wang, Xiu-Lian Xu	
PO17-005	406
<b>A case of pityriasis lichenoides et varioliformis acuta with numerous CD30+ small cells</b>	
Jisook Yoo, Taehan Koo, Eun-Jung Park, Mingyul Jo, Min-Soo Kim, Mihn-Sook Jue	
PO17-006	407
<b>Involvement of M1/M2 macrophages in the pathomechanisms of intralymphatic histiocytosis</b>	
Koji Kamiya, Mariko Iwasaki, Takeo Maekawa, Mayumi Komine, Satoru Murata, Mamitaro Ohtsuki	
PO17-011	407
<b>Three facial aging parameters (wrinkle, elasticity and pore) highly correlated with age obtained by non-invasive measurements in 5, 205 Asian</b>	
Ji Hwoon Baek, Young Kyoung Seo, So Jeong Kim, Ja Hyun Ryu, Han Jo Kim, Min Ji Kim, Da Jung Jo, Eun Ju Lee, Da Eun JEONG, Go Woon Choi, Da Hoon Yoon, Ye Eun Lee, Hyun Jin JEONG, Lee Eun Seok, Ahreum Choi, So Yeon Kim, Si Ho Choi, Yoo Ree Lim, Jong Hyun Kim, Sung Min Yang, Hye-Jin Ahn, Min Kyung Shin, Jae Sook Koh	
PO17-016	408
<b>A case of nevoid hyperkeratosis of nipple and areola in a male patient</b>	
Seung Hwi Kwon, Yoo Sang Baek, Jiehyun Jeon, Hae Jun Song, Chil Hwan Oh	

PO17-025	408
<b>Clinical study of 52 patients with adult onset dermatomyositis</b>	
Young Ho Won, In Soon Jung, Sook Jung Yun, Jee Bum Lee, Seung Chul Lee	
PO17-052	409
<b>A case of accessory tragus on buccal area</b>	
Kyung muk Jeong, Ji Yun Seo, Jin Young Song, Yoo Sang Baek, Hae Jun Song, Chil Hwan Oh, Jiehyun Jeon	
PO17-057	409
<b>Neonatal lupus erythematosus without congenital heart block: a retrospective study for 10 years in China</b>	
Jing-Hua Yin, Qian-Jin Lu, Jian-Ping Tang	
PO17-069	409
<b>Skin-Brain Connection</b>	
Jinho Chung	
PO17-070	410
<b>Application of dermoscopy detection system in observing the effect of 2940 nm Er pixel laser in skin pore treatment</b>	
Yue-Hua Men, Chun-Lei Zhang	
PO17-072	410
<b>A Japanese case of tick bite bitten in Nepal</b>	
Michio Tokuyama, Tomomichi Shimizu, Takahiko Yamada, Akio Kondo, Kiyohiko Kanbe, Tomotaka Mabuchi I	
PO17-073	411
<b>Analysis of finger vein variety in patients with various diseases using vein authentication technology</b>	
Jonghun Kim, Toshio Hasegawa, Yuichiro Maeda, Yusuke Hirasawa, Hitoshi Tsuchihashi, Takasuke Ogawa, Etsuko Komiyama, Akio Nagasaka, Naoto Miura, Shigaku Ikeda	
PO17-074	411
<b>Presence of SCF/CXCL12 double positive large blast-like cells at the site of cutaneous extramedullary hematopoiesis</b>	
Takashi Nomura, Toshiaki Kogame, Kenji Kabashima	
PO17-090	412
<b>Erythema nodosum-like lesion in sarcoidosis: a specific skin manifestation occasionally seen in Japanese patients</b>	
Toshiyuki Yamamoto	
PO17-091	412
<b>Cutaneous lymphoid hyperplasia with lymphoid follicles possibly represents tertiary lymphoid organs in the skin: an immunohistochemical analysis of three cases</b>	
Mikio Ohtsuka, Tatsuhiko Mori, Toshiyuki Yamamoto	
PO17-092	412
<b>Recurrent blistering of the fingers as a sign of carpal tunnel syndrome</b>	
Mai Endo, Toshiyuki Yamamoto	
PO17-002	413
<b>A case of overlap syndrome associated with rhabdomyolysis</b>	
Jin-Jing Jia, Xiao-Peng Wang, Hai-Tao Zhang, Meng-Di Zhang, Yan Zheng	
PO17-003	413
<b>Candidate biomarker of human skin aging: A review</b>	
Jun Wang	
PO17-007	413
<b>Unilateral linear Telangiectasia macularis eruptiva perstans: a case on axilla</b>	
Zhen-Hui Ma, Xiao Li, Ya-Ping Tian	
PO17-008	414
<b>5-aminolaevulinic acid-based photodynamic therapy pretreatment inhibits ultraviolet B-induced skin photodamage</b>	
Dan Luo	

PO17-009	414
<b>Distribution and expression of transient receptor potential vanilloid in skin lesions of patients with dermatomyositis</b>	
Ke Xue	
PO17-010	415
<b>A case of lupus miliaris disseminatus faciei after allogeneic hematopoietic stem cell transplantation</b>	
Si Zhang, Cheng Zhou, Xiao-Yang Liu, Lin Cai, Jian-Zhong Zhang	
PO17-012	415
<b>Wong type dermatomyositis with anti-TIF1-<math>\gamma</math> antibody: A case report</b>	
Ke Xue	
PO17-013	416
<b>MED, MPPD which model for whitening products evaluation is better?</b>	
Yue Zheng, Xiang-Zi Li, Wei Lai	
PO17-014	416
<b>Translation of the Chinese version of the Family Dermatology Life Quality Index (FDLQI) and its evaluation on parents of children with vitiligo and eczema</b>	
Abdulrahman Amer, Xing-Hua Gao	
PO17-015	417
<b>A case of scalp eczema and alopecia associated with Erlotinib</b>	
Fang su, Qing-Yan Chen, Tie-Nan Li	
PO17-017	417
<b>Recurrent purpura: A clue to Sjogren's syndrome</b>	
Lu gan, Hao Chen, Jian-Fang Sun	
PO17-018	418
<b>Expression and significance of IL-22 in lichen planus</b>	
Shan-Shan Zhu	
PO17-019	418
<b>Targeting lysosomal labile iron pool, a novel approach for skin photoprotection</b>	
Li Zhong	
PO17-020	419
<b>Measurement of cytokines, chemokines and association with clinical severity of DM/CADM disease</b>	
Meng-Ya Chen, Jie Zheng, Hua Cao	
PO17-021	419
<b>A case of classic juvenile pityriasis rubra pilaris</b>	
Bei Shi	
PO17-022	420
<b>Unilateral eyelid lupus tumidus: Report of three cases</b>	
Cong-Cong Xu, Hao Chen, Jian-Fang Sun	
PO17-023	420
<b>Dermoscopy of hair broken caused by chemical dye</b>	
Meng-Sha Ma, Wen-Ju Wang, Yong-Hong Lu, Shi-Hua Zeng, Xue-Ying Liu, Li-Wen Zhang, Qiao-Mei Sun	
PO17-024	420
<b>Study on efficacy and safety of HMME photodynamic therapy for port wine stain</b>	
Xiao-Ying Chen, Jie Zheng	
PO17-026	421
<b>Clinical analysis of 5 cases with nodular scabies about diagnosis and treatment</b>	
Yang-Yang Ma, Ping Wang	
PO17-027	421
<b>Two cases of Lichen planus-like eruption caused by glivec</b>	
Ling-Di Dong, Nan Yu, Jia-Rong Han	

PO17-028	421
<b>Clinical analysis of 425 cases of Paederus dermatitis</b> Zhuo-Fu Luo, Mao Luo, Yang Xu	
PO17-029	422
<b>A method of dermoscopy plus ink staining to observe scabies</b> Yang-Yang Ma, Ping Wang, Ke Bian, Ze-Hu Liu	
PO17-030	422
<b>Dermoscopy of vulva syringoma</b> Yong-Hong Lu, Meng-Sha Ma, Wen-Ju Wang, Bin Yin, Xue-Ying Liu, Qiao-Mei Sun	
PO17-031	423
<b>Correlation between serum high-sensitive C-reactive protein and CGI-SI in patients with psoriasis vulgaris</b> Meng-Sha Ma, Dan Zheng, Min Lin	
PO17-032	423
<b>Localized cutaneous amyloidosis associated with linear porokeratosis: A case report</b> Yong Zhang	
PO17-033	423
<b>Clinical observation of 32 cases of chronic urticaria treated by BICOM bio-resonance therapy</b> Liang Lu, Lan Liu, Wen-Ni Lei, Ping Liu, Yu-Dan Wang	
PO17-034	424
<b>Pseudoxanthoma elasticum: A case report</b> Ming Yao, Jing-Mu Liu, Xia Hua	
PO17-035	424
<b>Scalp metastasis as the first sign of non-small-cell lung cancer: case report</b> Cun-Huo Jiang	
PO17-036	424
<b>A case of auricular pseudocyst</b> Shi-Hua Zeng	
PO17-037	424
<b>A case of reactive perforating collagenosis</b> Hui-Min Meng, Li-Xia Xie, Cun-Huo Jiang	
PO17-038	425
<b>Risk factors for infantile hemangiomas: A systematic review and meta-analysis</b> Jing-Zhan Zhang, Yuan Ding, Xiao-Jing Kang	
PO17-039	425
<b>A rare case report of Wolf's isotopic response after herpes zoster: lichen sclerosis et atrophicus combined with cutaneous adnexal neoplasms</b> Min Zhang, Li-Xia Xie, Lin Wang, Lin Li, Mei Yang	
PO17-040	426
<b>Role of azithromycin in systemic lupus erythematosus by depressing classically activated macrophages</b> Jie Wang, Lin Xie, Shang-Shang Wang, Jin-Hua Xu	
PO17-041	426
<b>A case of erythropoietic protoporphyria</b> Li-Sha He	
PO17-042	426
<b>Effect of mental health education on quality of life in 56 patients with severe acne</b> Mei-Rong Bai	
PO17-043	427
<b>A case of lupus erythematosus profundus</b> Cong-Hui Li, Bei Kan, Bin Yin, Pei-Mei Zhou	
PO17-044	427
<b>Cutaneous Rosai-Dorfman disease</b> Yan Liu, Fen Li, Yong-Hong Lu	

PO17-045	428
<b>A case of crusted scabies presenting as erythroderma</b> Yin-Hua Wu, Juan Bai, Jian-Jun Qiao, Sha Zhou, Yun-Lei Pan, Si- Zheng, Hong Fang	
PO17-046	428
<b>A case of pyoderma gangrenosum and bullous pemphigoid</b> Qian Li, Chong Sun, Hong-Yan Liu, Song Zheng, Mei Liu	
PO17-047	428
<b>A case of aquagenic acrokeratoderma</b> Pei-Mei Zhou, Feng Li, Yong-Hong Lu, Xiao-Yu Deng	
PO17-048	429
<b>A case of Degos disease with ahead system symptoms</b> Xiao-Ke Liu, Jun Li	
PO17-049	429
<b>An acute pain rash: Dermoscopy as the key to diagnosis and treatment</b> Xue-Yan Yao, Jian-Zhong Zhang, Cheng Zhou	
PO17-050	429
<b>SLE patient of verrucous lupus erythematosus: A case report</b> Di-Xin Wang, Jie Zheng	
PO17-051	430
<b>Thymoma-associated multi-organ autoimmunity: 2 cases of graft-versus-host disease-like erythroderma</b> Ye-Ping Ruan, Bo Wang, Xiao-Qing Zhao, Ruo-Fei Shi, Jie Zheng	
PO17-053	430
<b>Inflammatory linear verrucous epidermal nevus: A case report</b> Jin-Wen Huang, Min Lin, Chao Ji, Xin-Yu Lin, Jing Zhang, Bo Cheng	
PO17-054	431
<b>A case of subungual exostosis</b> Xiu-Cheng Wang, Min Lin, Chao Ji, Bo Cheng	
PO17-055	431
<b>Challenge of diagnosing seborrhoeic keratosis by reflectance confocal microscopic</b> Ai-Yuan Guo	
PO17-056	431
<b>Cutaneous metastasis from ovarian serous adenocarcinoma</b> Meng-Ting Lin, Chao Ji, Zi-Ping Zhang, Bo Cheng	
PO17-058	432
<b>Cutaneous plasmacytosis with normal <math>\gamma</math>-globulin</b> Wen Yuan	
PO17-059	432
<b>A case of lupus erythematosus-lichen planus overlap syndrome on sole</b> Jun-Ying Li, Yu Zhang, Cai-Xia Wang, Gui-Ling Lu, Li-Tao Zhang	
PO17-060	432
<b>TNF<math>\alpha</math> antagonists-Induced psoriasiform eruption with histopathologic features of lichenoid dermatitis in a patient with erythema multiforme drug eruption</b> Yan-Yan Hu, Yun Xia, Wei-Ming Zhang, Fei Su, Xiao-Yong Zhou	
PO17-061	433
<b>Acquired lymphangiectasia (lymphangioma circumscriptum) of the vulva mimicking condyloma acuminatum</b> Chen-Chen Xu, Jun-Hui Wang, Yi-Jia Xu, Zhan-Shuo Xiao, Bing-Nan Cui	
PO17-062	433
<b>Dermoscopic features of Chinese patients with vulvar lichen sclerosis</b> Yi-Xin Luo, Jie Liu, Cheng Chi, Shi-Wang, Zhao-Liu, Dong-Lai Ma, Hong-Zhong Jin	
PO17-063	433
<b>Adult xanthogranuloma: A case report</b> Min Lin, Jing Zhang, Yu Guan, Jin-Wen Huang, Chao Ji, Bo Cheng	

PO17-064	434
<b>Dermatologists vs. deep convolutional neural network: the comparison of diagnostic accuracies for melanocytic nevus and seborrheic keratosis</b>	
Shi-Wang, Jie Liu, Chen-Yu Zhu, Chang Shu, Hang-Ning Zhou, Feng-Ying Xie, Tao Xu, Hong-Zhong Jin	
PO17-065	434
<b>Psoriasiform keratosis: A case report</b>	
Jin-Gang An, Song-Mei Geng, Yi-Guo Feng	
PO17-066	435
<b>Utility of dermoscopy in discosmetic dermatoses</b>	
Cheng Chi, Jie Liu	
PO17-067	435
<b>Cutaneous plasmacytosis: Report of a case and review of the literature</b>	
Li-Hong Zhao, Song-Mei Geng	
PO17-068	435
<b>Cutaneous Rosai-Dorfman disease: A case report and review of literature</b>	
Li-Hong Zhao, Song-Mei Geng	
PO17-075	436
<b>Survey on the current situation of continuing education for dermatologists in Hunan province</b>	
Yu-Meng Li, Jing Chen, Dong-Wen Wu, Qi Chen, Yu-Ting Pu, Chu-Ying Qin	
PO17-076	436
<b>A case of phacomatosis pigmentovascularis</b>	
Qing-Yan Li, Kevin Yu Wang, Rui-Lian Li, Song-Mei Geng, Hui-Qun Ma	
PO17-077	437
<b>Study on mechanism of miR-222 regulates the proliferation of fibroblasts in hypertrophic scar via MMP1</b>	
Yi Zhang, Kang Zeng	
PO17-078	437
<b>Analysis of clinicopathologic features of cutaneous Rosai-Dorfman disease</b>	
Ying Zhou, Gui-Ying Zhang, Jing Zhang, Ya-Ping Li	
PO17-079	438
<b>A case report of cutaneous angiosarcoma by surgical treatment and photodynamic plus chemotherapy</b>	
Di-Hui Liu, Ming-Liang Chen, Shuang Zhao, Fang-Fang Li, Li-Xia Lu, Kai Huang, Xiang Chen	
PO17-080	438
<b>Clinical manifestations and gene mutations of 25 patients with neurofibromatosis type 1 from Chinese 10 families</b>	
Hui Chen, Xue-Fei Lin, Wei Zhu	
PO17-081	439
<b>A case of stucco keratosis misdiagnosed as porokeratosis</b>	
Hui Chen	
PO17-082	439
<b>Cutaneous sarcoidosis masquerading as lupus vulgaris</b>	
Bei-Lei Xu, Xu Yao, Xiu-Lian Xu	
PO17-083	439
<b>A case of POEMS syndrome</b>	
Kun-Li Zhou, Chao Ji, Zi-Ping Zhang, Bo Cheng	
PO17-084	439
<b>UVB induced gene REDD1 may be involved in the regulation of skin photoaging</b>	
Yu-Jie Ouyang, Jing Chen, Jian-Yun Lu, Shuang-Hai Hu, Shi-Yao Pei, Chu-Han Fu, Ling Jiang, Yu-Fang Ding, Qing-Hai Zeng, Jin-Hua Huang	
PO17-085	440
<b>A case of linear IgA bullous dermatosis in children</b>	
Kun-Li Zhou, Ming-Kai Ji, Chao Ji, Zi-Ping Zhang	

PO17-086	440
<b>A case of acanthosis nigricans with gastric malignant tumor</b> Kun-Li Zhou, Chao Ji, Zi-Ping Zhang, Bo Cheng	
PO17-087	440
<b>Two stage repair of skin defects in dermatologic surgery using micro-power vacuum dressing have some benefits compared with skin grating</b> Xue Zhang, Dan Deng, Huai-Shan Qi, Zhi-Rong Yao	
PO17-088	441
<b>Epidemiological and clinical characteristics of infantile hemangiomas (IHs) in China: An ambispective cohort study</b> Xiai-Jian Yao, Tang-De Zhang	
PO17-089	441
<b>Research progress of relationship between MicroRNA-146a and skin diseases</b> Hong Yang	
<b>Publish</b>	442
<b>Index</b>	455

## Special Lecture

SL-1

### **IL-17 family cytokines in skin inflammation**

Chen Dong

*Institute for Immunology and School of Medicine, Tsinghua University*

Cytokines play important regulatory roles in immunity and inflammation. IL-17 family cytokines have emerged as critical players in inflammatory diseases. IL-17, also called IL-17A, is produced by specialized T cells, Th17 and other lymphocytes. Th17 cells are important in tissue inflammation and autoimmunity. Therapeutic targeting of IL-17 emerges as one of the best treatment for psoriasis. On the other hand, IL-25, produced by epithelial cells, regulates type II immunity and allergic diseases. In the meeting, I will discuss on our recent data on the function of IL-17 cytokines in skin inflammation and the underlying signaling mechanisms. These cytokines may be targeted to treat immune diseases.

SL-2

### **Scaffolds for brain development, maintenance and repair**

Kazunobu Sawamoto

*Nagoya City University Graduate School of Medical Sciences*

In many animal species, new neurons are continuously generated by neural stem cells at the wall of brain ventricles throughout life. These new neurons form chain-like aggregates and migrate towards the olfactory bulb (OB), which is one of the longest and fastest journeys undertaken by neurons in the brain. After brain injuries, these new neurons migrate toward the injured area, where they differentiate into mature neurons. In the post-stroke adult brain, new neurons form chain-like aggregates and migrate along blood vessels, which are thought to increase their migration efficiency. The chain formation and blood vessel-guided migration of new neurons critically depend on  $\beta$ 1-integrin signaling. Moreover, artificial laminin-containing scaffolds promote the neuronal chain formation and migration toward the injured area. Radial glia are polarized embryonic neural stem cells, which guide newly generated neurons by providing their fibers as a migratory scaffold. Radial glial fibers are maintained for an extended period in the injured neonatal mouse brain and provide a scaffold on which V-SVZ-derived new neurons migrate toward the injured cerebral cortex. N-cadherin-mediated cell-cell contact promotes RhoA activation in the new neurons and maintains their directional saltatory movement along radial glial fibers. Inserting radial glial fiber-mimetic scaffold into the brain promotes new-neuron migration toward the lesion and facilitated neuronal regeneration and neurological recovery. These findings have revealed the functional significance of blood vessels and neonatal radial glia as scaffolds for neuronal regeneration after brain injury. We propose novel therapeutic strategies for repairing the injured brain using endogenous neurogenesis in the V-SVZ.

SL-3

### **Can artificial intelligence provoke the revolutionary change in the medical field?**

Uhn Lee

*Department of Neurosurgery, Gachon University*

Artificial Intelligence (AI) is changing the medical profession in many ways. Recently IBM Watson for Oncology has been applied to the treatment site. This is just the beginning. In the near future, Artificial Intelligence would be spread to all other areas, including cardiovascular disease, diabetes, intractable neurologic disease etc. AI must provoke the

numerous changes in medical field. AI will result in a revolutionary change in all medical practice system as well as the diagnostic or therapeutic support. The first change we can expect, is the democratization of medical field. In fact, the healthcare system does not provide the fair access right for everyone. The quality of care being provided significantly different in accordance with the difference of income or social status. But realistically providing the best care equitably to all people is almost impossible. But if we use the AI trained by world-class medical experts, it can reduce these inequality. The second change is, AI can reduce the medical expenses without sacrificing the quality of care. Exponentially increasing medical costs is already difficult to tolerable. One of the major causes of increased health care is a hospital rendering of the patient. The reason for this hospital rendering is the distrust of the patient to the decision-making process of doctors. AI can significantly reduce this hospital rendering. When patients visit the hospital's first, patients will be able to get the best precise through the AI based care. The patient is able to save time, as well as medical expenses. This leads to the entire national healthcare cost savings. The third change is the creation of business opportunities that accompany the changes in medical practice. AI will provide many new business opportunities in cooperate with Precision Medicine, Big Data, Telemedicine, Sensing Devices, Wearable Computer and Drones. Consequently, AI is leading to many changes but at the same time the medical profession will be given a new chance. After all AI must be the enhancer of medical doctor's ability, not Job terminator system.

#### SL-4

### Potential of adipose-derived stem cells for the treatment of recessive dystrophic epidermolysis bullosa

Shigaku Ikeda

*Juntendo University Graduate School of Medicine*

**Background** Recessive dystrophic epidermolysis bullosa (RDEB) is one of the most severe forms of epidermolysis bullosa, one of congenital blistering diseases. Mutations in COL7A1 that encodes type VII collagen (Col7) (the main constituent of the anchoring fibrils that connecting the epidermal basement membrane to the dermis) underlie RDEB pathogenesis. On the other hand, adipose-derived stem cells (ADSCs) are highly useful in regenerative medicine, since they can be obtained in large quantities using relatively noninvasive methods. Moreover, we clarified that keratinocyte progenitor cells reside in ADSCs. The aim of this study was to determine the utility of ADSCs from a healthy donor in an allogeneic transplantation for repairing basement membrane alterations in patients with RDEB, we examined Col7 expression in ADSCs that differentiated into keratinocyte-like cells.

**Methods** ADSCs were co-cultured with fibroblasts on type IV collagen in a medium containing all-trans retinoic acid and bone morphogenetic protein 4. At day 14 of culture in keratinocyte serum-free medium, the cells were harvested and subjected to immunofluorescence, flow cytometry, real-time PCR, and western blotting.

**Results** Approximately 45% of ADSCs were immunostained positively for anti-human cytokeratin 10, and approximately 80% were stained positively for Col7. Flow cytometry, real-time PCR, and western blotting also confirmed that differentiated ADSCs expressed higher levels of Col7.

**Conclusions** We showed that 45% of ADSCs differentiated into keratinocyte-like cells and expressed higher levels of Col7. These findings support the therapeutic potential of ADSCs, not only for wound healing, but also for the correction of Col7 deficiencies.

#### SL-5

### Skin-brain connection

Jin Ho Chung

*Seoul National University*

Skin is an endocrine organ. Skin cells produce and regulate various hormones according to the changes of environment. Once skin produce hormones, they go to the blood stream and affect distant organs including brain. Skin is the largest organ of the body and a front-line homeostatic barrier to the external environment. There is a

strong connection between the skin and the brain. Once certain environmental stress hits the skin, skin senses the stresses. Then, the skin transfers the information to the brain through the peripheral nerve fibers. On the other hand, there is another way for skin to let brain know about the stresses coming to our body. Skin produces various hormones and mediators into the blood circulation, and they reach to the brain. Then, brain responds to those signals to produce stress responses. In this talk, I will show how UV exposure to the skin affects brain functions. The skin senses external environment and ultraviolet light (UV) is daily stimulus the skin receives. Hippocampus is the brain region that is responsible for memory and emotion. However, changes in hippocampus by UV irradiation to skin are still unknown. Recently, we demonstrated that repeated UV exposure through the skin may negatively affect hippocampal neurogenesis and synaptic plasticity along with HPA axis activation. In addition, I am also going to give you further examples of skin-brain connection.

SL-6

### **Prokineticin 2 plays a pivotal role in psoriasis**

Lai Ren

*Kunming Institute of Zoology, Chinese Academy of Sciences*

Psoriasis is histologically characterized by keratinocytes (KC) hyperproliferation, inflammation, and increased angiogenesis, but the pathological factor responsible for these symptoms is unknown. Here, a neuroendocrine peptide (prokineticin 2, PK2), is highly expressed in human and mouse psoriatic skins but no significant change in other autoimmune diseases, suggesting that PK2 is a psoriasis-specific factor. Bacterial products significantly up-regulated PK2, implying that infection induces PK2 over-expression. PK2 promoted KC and macrophage to produce interleukin-1 (IL-1), the central player of inflammation and psoriasis, which acts on adjacent fibroblast to induce inflammatory cascades and KC hyperproliferation. IL-1 feeds back on macrophages to induce PK2 production to perpetuate PK2-IL-1 positive feedback loop. PK2 also promoted angiogenesis, another psoriatic symptom. In mouse models, PK2 over-expression aggravated psoriasis while its knock-down inhibited pathological development. The results indicate that PK2 over-production perpetuates psoriatic symptoms by creating PK2-IL-1 vicious loop. PK2 is a central player in psoriasis and a promising psoriasis-specific target.

## Concurrent Session

### CS01 Appendages' Diseases

CS01-1

#### Update on the pathophysiology and clinical aspects of rosacea with a focus on Korean patients

Soyun Cho

*Boramae Medical Center*

Rosacea is a chronic cutaneous inflammatory syndrome affecting the central face. Although rosacea is categorized into 4 subtypes (erythematotelangiectatic [ETR], papulopustular [PPR], phymatous [PHY], and ocular subtypes) and the granulomatous variant, many patients present with combined clinical features, and different populations demonstrate variable clinical aspects of the disease. The pathogenesis involves a neurovascular inflammatory response and enhanced innate and adaptive immune response, with an increased mast cell density. Rosacea is also common in Asians, and we analysed 704 Korean patients and present the data here. The patients' mean age was 50.5 years, male-to-female ratio was 1:1.99, and the most common subtype was ETR (55.7%), followed by combined (ETR + PPR) type (22.6%), PHY (11.4%) and pure PPR (10.4%). The cheek was the most commonly affected site (89.9%), followed by the nose (56.5%), glabella (37.8%), nasolabial fold (17.2%) and periorbital area (9.8%). The glabella was significantly more frequently affected in the combined type (69.2%) than in ETR (28.3%), regardless of severity. In Korean patients, pure PPR is much less common than the combined type. Glabellar and nasal involvement can be an early marker of subtype transition from ETR to the combined type. The treatment response rate was significantly higher in the combined type (26.0%) than the ETR (10.9%). From this we can expect the best prognosis in PPR, followed by combined type and ETR. The results of our basic research on ETR and different treatment options for various symptoms and signs of rosacea will also be discussed.

CS01-2

#### Expression and pathogenesis of DDB2 and SELL in severe acne

Mai Endo, Wen-Juan Wu

*The First Affiliated Hospital of Kunming Medical University*

**Background** Our previous GWAS study showed that DDB2 and SELL are the susceptibility genes of severe acne. But the expression and protein function of them in severe acne remains unknown. The aim of this study was to investigate the expression and effect of DDB2 and SELL gene in severe acne.

**Methods** Expression of SELL and DDB2 were assessed through qRT-PCR or ELISA in severe acne and healthy controls. DDB2 over-expression and knockdown lentiviral vectors were transfected in human HaCaT cells respectively. Cell proliferation was detected by Cell Counting Kit-8 (CCK-8) and EdU, and the cell apoptosis was detected by flow cytometry. The relationship between NF- $\kappa$ B signaling pathway and DDB2 was confirmed by immunofluorescence and Western blot. Expression of cytokines as IL-6 and IL-8 in *P. acne* stimulated cells were detected by qRT-PCR.

**Results** Compared with healthy control, the serum DDB2 concentration of severe acne patients was decreased ( $P < 0.05$ ), and the serum soluble L-selectin was increased in severe acne ( $P < 0.05$ ). The proliferative activity of DDB2 knockdown HaCaT cells was significantly increased compared with the control ( $P < 0.05$ ) in both CCK8 and EdU assay. The apoptotic rate of DDB2 over-expression group was significantly increased compared with the control. Compared with the control, the expression of NF- $\kappa$ B/p65 protein was decreased in DDB2 over-expression HaCaT cells, and increased in DDB2 knockdown cells. Cytokines as IL-6 and IL-8 were increased in *P. acne* stimulated HaCaT cells when DDB2 is knockdown.

**Conclusion** Our work provide direct evidences for the expression of DDB2 and SELL related with severe acne patients, and effect of DDB2 on NF- $\kappa$ B pathway and the process of inflammation in the development of severe acne.

## CS01-3

**Clinical analysis of trichilemmal cyst in our department over the past 10 years**

Mai Endo, Toshiyuki Yamamoto

*Fukushima Medical University Hospital*

Trichilemmal cyst is a relatively rare disease and it is diagnosed histopathologically. In our department 25 cases were diagnosed as trichilemmal cyst over the past 10 years. Patients were 12 males and 13 females, and the average age was 49 years, more specifically the youngest was 9 years old and the oldest was 87 years old. Tumors with a diameter of around 10 mm were the most common, but the largest one had a diameter of up to 40 mm. The involved sites were most frequently observed in the scalp (16 cases), followed by the face (7 cases), abdomen (1 case) and forearm (1 case). Among the facial lesions, 2 were observed in eyebrow, 2 were observed in upper and lower eyelids, 2 were observed in forehead, 1 was observed in cheek. Histopathologically, proliferative changes were observed in 3/25 and calcification lesion was observed in 4/25.

## CS01-4

**Allogeneic hair transplantation: the current experiments in animal models and future clinical implication**

Ohsang Kwon

*Department of Dermatology, Seoul National University College of Medicine, Seoul, Korea*

Permanent severe alopecia patients cannot benefit from autologous hair transplantation. However, it would be possible to utilize allogeneic hair follicles (HFs) as the donor source with induction of antigen-specific immune tolerance. For the development of allogeneic hair transplantation by immune tolerance, dendritic cells (DCs) are focused as the target for tolerance induction. During the rejection process, the antigen presentation by immune DCs or depletion of donor resident DCs can be a new immunomodulatory strategy to induce immune tolerance. In this study, the tolerogenic potential of anti-ICAM1 antibody (MD-3) and the effect of UVB pre-irradiation plus anti-CD154 antibody treatment was evaluated under the skin immune system in MHC-mismatched HF allograft model in non-human primates and humanized mice. The survival of monkey's thick eyebrow allografts was significantly enhanced by MD-3 treatment, whereas those were rapidly impaired in immunosuppressant only and control groups. Although long-term survival was not achieved, antibody treatment markedly enhanced HF allograft survival by delayed and diminished T cell infiltration. The humanized mouse model was made by infusion of human CD34+ hematopoietic stem cells. UVB was pre-irradiated to donor HFs to make resident donor DCs migrate out of donor tissue, and anti-CD154 antibody was treated to recipient mouse to block recipient DC maturation and costimulatory signaling during antigen presentation. The long-term survival of allografts was achieved showing normal hair cycle with newly growing black pigmented hair shafts. Conclusively, a clinical application of allogeneic transplantation of HFs is taken one step closer by our novel immunomodulatory strategy for antigen-specific immune tolerance.

## CS01-5

**What new in nail and nail disorders?**

Dong-Youn Lee

*Samsung Medical Center, Sungkyunkwan University*

The nail unit and hair follicle are specialized tissues which are closely associated with skin. They show unique structures, but have common things including the expression of proteins such as keratin and co-involvement in some diseases. Based on the findings in hair follicles, we found a well-defined mesenchymal cell population below the nail

matrix and proximal nail bed by CD10 immunohistochemistry, and proposed calling these specialized mesenchymal cells onychofibroblasts. In addition, we demonstrated the presence of specialized mesenchyme containing onychofibroblasts below the nail matrix and nail bed and proposed the terminology onychodermis for this specialized mesenchyme because it was histologically and immunohistochemically distinct from other parts of the nail unit. Also, we observed more strong CD13 expression in the mesenchyme containing onychofibroblasts below the nail matrix compared to the mesenchyme below the nail bed, suggesting that CD13 may be a marker for onychofibroblasts within nail matrix onychodermis. Very recently, we found that elastin was not expressed in the specialized mesenchymes of both nail units and hair follicles while it was expressed in the dermis of other parts of them, demonstrating the presence of nail matrix onychodermis containing onychofibroblasts. In this presentation, I will talk about the onychodermis in nail unit and what is new in nail disorders.

## CS01-6

### **Gut microbiota alterations in moderate to severe acne vulgaris patients**

Hui-Min Yan, Hui-Juan Zhao, Du-Yi Guo, Pei-Qiu Zhu, Chun-Lei Zhang, Wei Jiang

*Third Hospital of Peking University*

Acne vulgaris is a chronic inflammatory dermatosis affecting about 85% adolescents. There are many factors contributing to the development of this ailment. Recent study indicates that gut microbiota takes part in the pathogenesis of acne. We aimed to investigate the link between acne vulgaris and gut microbiota. A total of 31 moderate to severe acne vulgaris patients and 31 healthy controls were enrolled. We collected their feces and gut microbiota was evaluated by the hypervariable regions of 16S rRNA genes through high-throughput sequencing. We identified links between acne vulgaris and changes of gut microbiota. At the phylum level, Actinobacteria (0.89% in acne patients and 2.84% in normal controls,  $P=0.004$ ) was decreased and Proteobacteria (8.35% in acne patients and 7.01% in normal controls,  $P=0.031$ ) was increased. At genus level, Bifidobacterium, Butyricoccus, Coprobacillus, Lactobacillus and Allobaculum were all decreased. The observed difference in genera between acne patients and healthy controls provides a new insight into the link between gut microbiota changes and acne vulgaris risk

## CS01-7

### **Frequent intake of soft drinks is associated with moderate to severe acne in adolescents: the College Student Skin Health Survey**

Xiao-Yan Huang, Jiang-Lin Zhang, Jie Li, Shuang Zhao, Yi Xiao, Yu-Zhou Huang, Dan-Rong Jing, Li-Ping Chen, Xing-Yu Zhang, Xiang Chen, Min-Xue Shen

*Xiangya Hospital of Central South University*

**Background** Soft drinks is popular worldwide, especially among teenagers; and acne vulgaris is prevalent in adolescents. It is unclear whether intake of soft drinks can increase the risk of acne in adolescents. The study aimed to investigate the association of soft drinks consumption and intake of sugar from soft drinks with the prevalence of acne in adolescents.

**Methods** Newly enrolled college were recruited in this cross-sectional study. Students underwent health examination and questionnaire survey including intake of soft drinks. Skin diseases were diagnosed by certificated dermatologists through the health examination. Two-level logistic model and generalized additive model were used to estimate the associations, and odds ratio (OR) was presented as the effect size.

**Results** 8226 students completed the baseline survey, and 8197 were analyzed. Frequent intake ( $\geq 7$  times per week) of carbonated soda ( $OR=1.61$ , 95%  $CI: 0.96-2.72$ ), sweetened tea drinks ( $OR=2.52$ , 95%  $CI: 1.09-1.91$ ), and fruit-flavored drinks ( $OR=1.90$ , 95%  $CI: 1.18-3.07$ ) were associated with moderate to severe acne after adjustments for confounders. Occasional intake of fruit-flavored drinks (1–2 times per week) showed a weak but significant protective effect on acne ( $OR=0.86$ , 95%  $CI: 0.74-0.99$ ). Intake of sugar from any soft drinks showed a non-linear association with acne ( $P<0.01$ ); and sugar intake  $\geq 100$  g/day was significantly associated with moderate to severe

acne ( $OR = 3.12$ , 95%  $CI$ : 1.80–5.41).

**Conclusion** Frequent soft drinks consumption significantly increases the risk of moderate to severe acne in adolescents.

CS01-8

### **Identity-by-descent analysis reveals F13A1 as a novel susceptibility gene for severe acne in Chinese Han cohort**

Wen-Juan Wu, Xing-Yan Yang, Li He

*First Affiliated Hospital of Kunming Medical University*

Severe acne is a serious chronic inflammatory skin disease. Although previous GWAS studies have identified numerous common variants associated with severe acne in different populations, these variants just explain a small proportion of the heritability. To explore more details about the genetic basis of severe acne, we perform Identity-by-descent (IBD) mapping in the Chinese Han population based on the dataset of 801176 genome-wide SNPs from 1024 cases and 1029 controls. Comparing the frequency distribution of the IBD segments between the cases and controls, we detect SNPs representing top 0.05% in the permutation as the peak signals. Among of them, five loci (i.e. *3q28*, *5q33.3*, *11p11.2*, *16p13.3*, and *16q23*) have been reported to be associated with severe acne. We identify *6p25* referring to gene *F13A1*, as the novel susceptibility locus for severe acne. Further genotyping of 501 SNPs in 1150 cases and 5207 controls validates, and *F13A1* as the candidates risk genes for severe acne in the Chinese Han population.

CS01-9

### **Sequential cyclic change of hair roots in the mechanism of diffuse alopecia areata revealed by dermoscopy**

Xing-Qi Zhang, Yan-Ting Ye, Yu-Qing Yang, Hui Cao, Zhao-Hui Zhu, Kevin McElwee, Yun-Xia Lin

*The First Affiliated Hospital of Sun Yat-sen University*

**Background** Diffuse alopecia areata (DAA) often leads to a complete hair shedding within a few months. The aim of this study was to explore features and mechanisms underlying DAA.

**Methods** Scalp and hair root dermoscopy were conducted on 23 DAA patients throughout the disease process, 20 patchy AA (PAA) patients, 23 acute telogen effluvium (ATE) patients, and 10 normal controls. Histopathology was also evaluated.

**Results** In DAA, anagen effluvium (~4 weeks) was followed by catagen (~4 weeks) and then telogen/exogen (~8 weeks) effluvium with overlap. Hair root and proximal hair shaft depigmentation was more prominent in later DAA disease stages. Black dots, exclamation mark hairs and inconsistent thickness of hair shaft were found more often in early than later DAA ( $P_s < 0.01$ ). PAA patients showed mixed anagen, catagen and telogen hair roots. ATE patients showed increased exogen and mildly decreased hair root pigmentation. Early DAA histopathology revealed more prominent inflammation and hair follicle regression than that in the later stage. Intramuscular corticosteroid intervention within the first month of DAA onset resulted in a shorter disease process and lower relapse rate.

**Conclusions** Sequential cyclic staging of shed hairs in DAA indicates the insult may be hair-cycle specific. Hair root pigmentation disturbance may not necessarily indicate termination of the hair cycle. Exogen may be premature in both DAA and ATE. Anti-inflammatory treatment should be started early in the course, when anagen hair roots and lesional infiltration is present, to prevent relapse.

## CS01-10

**Follicular occlusion tetrad: a rare case report**

Rui-Xue Xu, Jiu-Hong Li, Tian-Hua Xu, Qian An

*First affiliated hospital of China Medical University*

Follicular Occlusion Tetrad is defined as the association of acne conglobata, hidradenitis suppurativa, perifolliculitis capitis abscedens et suffodiens (PCAS), and pilonidal sinus. The common pathological features of those diseases is follicular hyperkeratosis. Follicular Occlusion Tetrad is a rare autosomal dominant genetic hereditary disease with the features of chronic, recurrent nodules, large abscesses, interconnecting fistula, scar formation and alopecia ensue, and most common in young adult black men between 20 and 40 years of age.

*CS02 Bacterial and Viral Infection*

## CS02-1

**Novel strategies for the prevention of HIV transmission**

Tatsuyoshi Kawamura

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Sexual transmission of HIV is the most common mode of infection in the global HIV epidemic. In the absence of an effective vaccine, there is an urgent need for additional strategies to prevent new HIV infections. In the initial phase of sexual transmission of HIV, virus crosses mucosal epithelium and is eventually disseminated from local sites of infection to proximally located lymphoid organs, where it establishes a permanent infection in the host. An emerging body of evidence now indicates that Langerhans cells (LCs) are initial cellular targets in the sexual transmission of HIV, and CD4- and CCR5-mediated infection of LCs plays a crucial role in spreading HIV from mucosal sites to lymphoid organs. Recently, we have shown that orally delivered CCR5 inhibitor: Maraviroc rapidly distributes to skin and functionally acts to block HIV infection of LCs. In addition, we and others have recently found that HIV susceptibility of LCs is directly and indirectly enhanced by STD pathogens, thereby leading to enhanced sexual transmission of HIV. Based on these insights, pre-exposure prophylaxis (PrEP) with oral administration of antiretroviral drugs and blockade of HIV infection-enhancing effect by STD that interfere with HIV infection of LCs might be considered as an alternate approach to decrease sexual transmission of HIV.

## CS02-2

**Clinical analysis for 401 cases of herpes zoster patients in hospital**

Hui-Lan Yang

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**Background** In order to provide a basis for clinical diagnosis, treatment and prognosis of herpes zoster, we analyse the hospitalization and influence factors that in patients with herpes zoster using Logistic regression.

**Methods** We use the Logistic regression analysis to explore the data with 401 cases collected from General Hospital of Guangzhou Military Command of PLA in the last 5 years. To find out the influencing factors of herpes zoster inpatients hospital stays/ recovery/ complications/ postherpetic neuralgia.

**Results** Age, antivirus therapy, the immune disease, diseased parts, hospital departments and the rash on admission can affect the length of stay. Complications may relate to age, the rash on admission and hospital departments. Gender, hospital departments, and PHN could influence the prognosis of disease. And the course prior to admission and prognosis may result in PHN.

**Conclusion** Logistic regression analysis can systematically explore the hospitalization related situations, the results can work for medical behavior in the future.

## CS02-3

**Induction of plasmablasts by follicular helper T cell-CXCL13 axis upon occurrence of herpes zoster**

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Herpes zoster (HZ) is a recurrent varicella zoster virus (VZV) infection. Follicular helper T (Tfh) cells produce IL-21 and CXCL13, which contributes to the differentiation of plasmablasts. Plasmablasts are involved in the VZV-specific antibody production. We investigated the kinetics of circulating plasmablasts and circulating Tfh (cTfh) cells in 43 HZ patients. Plasma IL-21 and CXCL13 levels were also measured. We found an increase of circulating plasmablasts during the clinical course of HZ. The frequency of circulating plasmablasts positively correlated with VZV-specific IgG titers, frequency of activated cTfh cells, and plasma CXCL13 levels, but did not correlate with plasma IL-21 levels. In a representative case, the kinetics peaked in the order of cTfh cells, CXCL13, plasmablasts, and VZV IgG titer. These results suggest that cTfh-CXCL13 may have a crucial role in the differentiation of B cells into VZV-specific IgG-producing plasmablasts, resulting in boosting immunity against VZV reactivation.

## CS02-4

**A clinical observation of 32 cases of leg erysipelas treated with Chinese medicine wet-dressing and ozone spa**

Mei-Rong Bai

*Chengdu Second People Hospital*

**Background** To investigate the curative effect of traditional Chinese medicine combined with ozone spa treating erysipelas.

**Methods** The 60 patients of leg erysipelas in April 2016 to April 2017 in our department were randomly divided into the observation group of 32 cases and the control group of 28 cases. Two groups were treated with the same drugs, namely 0.9% NS 250 ml+ Ceftezole 2 g ivgtt bid, 0.9% NS 250 ml+10% calcium gluconate 20 ml+vitC 3 g ivgtt qd, and Chinese medicine treatment, 5% Huangku lotion, cold-wet-dressing the lesion, 30 minutes each time, 3 times a day. The observation group combined with ozone hydrotherapy on the basis of treatment, every time 20 minutes, 1 time a day, 7 times for 1 course, to observe the extinction time of erythema and swelling, as well as extent of pain.

**Results** After 14 days of treatment, the extinction time of erythema and swelling of the observation group is significantly shorter than the control group, and the pain relief was obvious, the total effective rate of the observation group was significantly higher than that of the control group ( $P < 0.05$ ).

**Conclusions** It is quick, characteristic of high efficacy, safety, and no obvious side effects that the leg erysipelas is treated with Chinese medicine wet dressing and ozone spa, comparing with the single drug treatment. It is worth promotion.

## CS02-5

**Epidemiology and clinical profile of cutaneous warts in Chinese college students: a cross-sectional and follow-up study**

Jian-Jun Liu

*People's Liberation Army No. 306 Hospital*

**Background** Epidemiological and clinical data on cutaneous warts in young adults are scarce. The aim of this study was to document the prevalence, clinical profile and prognosis of cutaneous warts in Chinese college students.

**Methods** In this cross-sectional study, the hands and feet of 15,384 undergraduate and postgraduate students aged 14-44 years in 3 colleges in Beijing were examined for the presence of warts at college-entry, and those diagnosed

with warts were followed up 2-3 years later.

**Results** We identified totally 215 (1.4%; 95% CI, 1.2%-1.6%) students with warts. The prevalence was significantly higher in male than in female students (2.0% vs. 0.9%,  $P < 0.0001$ ). Of the 215 patients, 66.9% and 62.1% had only one wart and 98.3% and 93.2% had warts  $< 1$  cm in diameter, on the hands and feet, respectively. Of the 130 patients with a follow-up visit, 78 did not receive any treatment (44 recovered within 2 years). Patients aged 21-25 compared to those aged  $\leq 20$  were more likely to be free of warts (hazard ratio = 1.76; 95%CI, 1.07-2.89), while lower father's education (hazard ratio = 0.19; 95%CI, 0.04-0.98) and poor sleep quality (hazard ratio = 0.41; 95%CI, 0.18-0.92) decreased the likelihood of resolution.

**Conclusions** The prevalence of warts is 1.4% in college students. The majority of patients have warts  $< 1$  cm and approximately 2/3 patients has one wart. Slightly over half of patients recover spontaneously within 2 years. Patients' age, sleep quality, and paternal education may affect the resolution of warts. These findings may benefit the medical consultation and treatment of warts in adults.

## CS02-6

### **Vacuum sealing drainage as an auxiliary therapy for complicated giant skin abscesses: a series of case studies**

Qin Qin

*Army Military University Daping Hospital*

**Background** How to fully and thoroughly drain and promote the growth of the ulcer formed after the incision and debridement of the abscess is a difficult issue in the treatment of complicated giant skin abscess. This study was to explore the efficacy of the clinical treatment of patients with complicated giant skin abscess by vacuum sealing drainage (VSD).

**Methods** We performed a retrospective study of ten patients of complicated giant skin abscess in our departments from October 2015 to May 2017.

**Results** There were eight males and two females. The mean age was  $(46.1 \pm 23.68)$  years. The average of the longest diameter of the abscess was 7.49 cm. The VSD was conducted three to five times. After performing the first VSD, the longest diameter of cellulitis around the abscess was significantly reduced compared with that at admission ( $P < 0.05$ ), and the visual analog scale (VAS) score of patients was  $(1.6 \pm 0.69)$ . After the second VSD was performed, the longest-diameter ulcer was significantly reduced compared with that after the first VSD ( $P < 0.05$ ). And starting from the second VSD, each VAS score was 0 or 1. The average wound healing time was  $(28.8 \pm 7.69)$  days, and the cure rate was 100%. No patient experienced recurrence during the follow-up time.

**Conclusions** For patients with complicated giant skin abscess, the VSD therapy can offer effective and adequate drainage, control of infection, and promotion of wound healing. The treatment can be accepted by the patients

## CS02-7

### **Ecthyma gangrenosum caused by Burkholderia cepacia in immunocompetent man: the first case report in Chinese and English literature**

Lan Zhang

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Ecthyma gangrenosum (EG) is pathognomonic for superficial soft tissue infection that typically affects immunocompromised patients with bacteremia caused by *Pseudomonas aeruginosa*, particularly those receiving immunosuppressed and chemotherapy for malignant diseases. Herein, we report the first case of EG caused by *Burkholderia cepacia* in immunocompetent individual.

Case description: A 41-year-old previously healthy man presented with an aggravated pain lesion on his left hand wrist that had developed 7 days. Physical examination revealed a 3-cm gray-black eschar surrounded by pustules and erythematous halo. The patient was afebrile, and other than the lesion, the findings from physical examination were

unremarkable. Although slightly elevated absolute counts of CD8+T cells, serological examination were negative including HIV, HBV/HCV, TORCH, ANCA, procalcitonin, fungal D-glucan, endotoxin, as well as normal absolute neutrophil count, blood culture and chest CT. However both smear and culture from the purulent secretion showed Gram-negative bacilli, which was eventually identified as *B.cepacia*. The microorganism was only sensitive to sulfamethoxazole and ceftazidime. The patient was placed on broad-spectrum antibiotics and changed to sulfamethoxazole and ceftazidime following drug-sensitivity test. Meantime, he underwent surgical debridement of the wound. The biopsy showed perivascular hemorrhage and infiltration of neutrophilic granulocytes with central necrosis. Tissue culture also yielded the same organism. The wound completed healing 2-weeks later. Clinicians should be aware of the characteristics of EG. Recognizing this skin lesion should prompt the initiation of broad-spectrum antibiotics and adjusted to sensitive antibiotics based on organism cultures. And surgical excision of the lesion is necessary to infection control.

#### CS02-8

### **Multiple misdiagnosis of diffuse multibacillary leprosy patient with Lucio's phenomenon and positive anticardiolipin antibodies**

Wei Gao

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Leprosy is a kind of chronic granulomatous bacterial infection that affects the skin and peripheral nerves caused by the intracellular bacillus *Mycobacterium leprae*. Lucio's phenomenon was first described in 1852 by Rafael Lucio, in collaboration with Alvarado. Diffuse multibacillary leprosy of Lucio is mainly reported in Mexico and Central America. We report a case in a 28-year-old female patient in China. She also had suffered with Lucio's phenomenon, characterized by vascular thrombosis and invasion of blood vessel walls by leprosy bacilli, causing extensive skin ulcers and positive anticardiolipin antibodies with misdiagnosis several times.

#### CS02-9

### **Skin rash in a child with infectious mononucleosis**

Xian-Hua Jin

*The Second Hospital of Jilin University*

A 14-year-old boy presented with the whole body skin rash accompanied by fever for seven days. The diagnosis was scarlatina in the local clinic. It was not effect after six days of treatment with azythromycin and dexamethasone. He had two years history of epilepsy and had took oxcarbazepine. He took traditional Chinese drug one month ago. Clinic diagnosis was staphylococcal scalded skin syndrome. On physical examination, his temperature was 39.1°C. Head and neck examination were remarkable for bilateral posterior cervical lymphadenopathy and enlarged erythematous tonsils with exudate. His groin was touched multiple lymph nodes. The generalized erythema and swelling was over the entire body with dry desquamation, face was particularly affected with heavy, double eyelid edema. The erythema covered with pruritus pinhead sized papules. Erosion was seen in some area. Laboratory examination: WBC  $14.6 \times 10^9/L$ , monocytes 11.3%, lymphocytes  $5.1 \times 10^9/L$ , monocytes  $1.7 \times 10^9/L$ , LDH 836 U/L, a-hydroxybutyrate dehydrogenase 458 U/L. Then it was suspected as drug reactions of exfoliative dermatitis. But there was no improvement after ten days treatment of glucocorticoid, antibiotic and vitamin C, calcium gluconate. Dyspnea was occurred. Finally we consulted pediatrician and took the following examination. EBV serology revealed weak positive nuclear antigen -IgG, positive EBV shell antigen-IgG. Peripheral blood smear examination lymphocytes account for 23%, 11% of which were atypical. Abdominal ultrasound showed splenomegalia. The diagnosis was infectious mononucleosis. Symptoms were improved after ten days of treatment with adenosine arabinoside. It should be vigilant for infectious mononucleosis in children with exfoliative dermatitis with fever when routine treatment is not effective.

## CS02-10

**A case of abdominal subcutaneous abscess caused by Eikenellacorrodens**

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A 60-year-old Chinese man was admitted to our hospital due to painful erythema and sclerosis on his left abdomen for 50 days and irregular fever for 20 days. The lesion was first presented as ill-defined erythema on his left abdomen, accompanied with sharp pain. He was diagnosed as herpes zoster and given antiviral treatment for more than 3 weeks. Nevertheless, neither the erythema nor the pain got any relief. Gradually, sclerosis developed on the surface of the erythema. 20 days ago, the patient started suffering from an irregular fever, with  $T_{max}$  38.5°C. Physical examination revealed an ill-defined erythema with hardened surface on his left abdomen, approximately 5.0×5.0 cm in size.  $T$ : 36.8°C. Lab examination showed normal white blood cell count, C-reactive protein and PCT. The ultrasonography indicated that the subcutaneous fat layer in the left abdomen was swollen, thickened and echogenically enhanced. The CT scan confirmed a subcutaneous abscess. The abscess was then drained following ultrasound guidance. The pus culture isolated the strain of Eikenellacorrodens. Accordingly, the patient received operation of incision and drainage, followed by Cefoperazone (intravenous drip, 2/d) based on drug sensitivity test. Eikenellacorrodens is one of the HACKE bacteria constituting part of the normal flora of the oropharynx. Hereby we report a rare case of an Eikenellacorrodens abdominal subcutaneous abscess in a previously healthy male.

*CS03 Basic Research**Basic Research 1*

## CS03-1-1

**Immune mechanism of allergen-specific immunotherapy in atopic dermatitis**

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Atopic dermatitis is a chronic inflammatory skin disorder characterized by genetic predisposition, immune dysregulation, and skin barrier disruption, with the majority of the patients showing manifestation for a high number of allergen sensitizations. Allergen-specific immunotherapy (SIT) can be a disease modifying treatment that induces long lasting tolerance to the allergen, preventing additional allergen sensitization. SIT has been found to induce regulatory T (Treg) cells, which inhibit allergen-induced T cells, thereby suppressing Th1 and Th2 cytokines. Also, Treg cells express IL-10 and TGF- $\beta$ , which desensitize mast cells, eosinophils, and basophils. To investigate the mechanism and validate the novel modality of SIT, a mouse model can be established by subcutaneous injection of Dermatophagoides farinae extract (DfE) to Nc/Nga mouse with induced AD-like skin lesion, and it had been found to well-correlate with features from previous reports of SIT-treated patients. Through this model, DfE-loaded microneedle patch was found to be more efficient and effective than the conventional subcutaneous method. It induced significant clinical and immunological improvements, and DfE-loaded microneedle patch can be suggested as a novel convenient and effective modality for SIT. Likewise, this model could potentially be used to better understand the immunologic mechanism of SIT in AD and for development and evaluation of a new modalities for SIT in AD.

## CS03-1-2

**Role of keratin 24 in human epidermal keratinocytes**

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Keratin 24 (K24) is a new kind of keratin genes, which encodes a novel keratin protein, K24 that bears high similarity to the type I keratins and displays a unique expression profile. However, the role of K24 is incompletely understood. In our study, we investigated the localization of K24 within the epidermis and possible functions. Keratin 24 was found to be modestly overexpressed in senescent keratinocytes and was mainly restricted to the upper stratum spinosum of epidermis. The protein was required for terminal differentiation upon CaCl<sub>2</sub>-induced differentiation. In vitro results showed that increased K24 in keratinocytes dramatically changed the differentiation of primary keratinocytes. It also inhibited cell survival by G1/S phase cell cycle arrest and induced senescence, autophagy and apoptosis of keratinocytes. In addition, K24 activated PKC $\delta$  signal pathway involving in cellular survival. In summary, K24 may be suggested as a potential differentiation marker and anti-proliferative factor in the epidermis.

## CS03-1-3

**A novel antimicrobial (host defense) peptide AMP-IBP5 activates human keratinocytes**

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In addition to their antimicrobial activities, antimicrobial (host defense) peptides also display various immunomodulatory functions, including keratinocyte production of cytokines and chemokines, cell proliferation, migration and wound healing. Recently, a novel antimicrobial peptide named AMP-IBP5 (antimicrobial peptide derived from insulin-like growth factor-binding protein 5) was shown to exhibit antimicrobial activity against numerous pathogens, at concentrations comparable to or even higher than those of the well-known antimicrobial peptides, such as human b-defensin-2 and cathelicidin LL-37. However, the immunomodulatory activities of AMP-IBP5 in cutaneous tissue are still not well understood. In the current study, we investigated whether AMP-IBP5 might trigger human keratinocyte activation and clarified the underlying molecular mechanism. We observed that among the numerous cytokines, chemokines and growth factors tested in normal human keratinocytes, AMP-IBP5 selectively increased the production of interleukin (IL-8) and vascular endothelial growth factor (VEGF). Moreover, AMP-IBP5 significantly enhanced keratinocyte migration (assessed by in vitro wound closure assay and Boyden chamber assay) and proliferation (analyzed using BrdU incorporation and XTT assays). AMP-IBP5-induced keratinocyte activation was mediated by Mas-related gene (Mrg) X1-X4 receptors and both MAPK and NF- $\kappa$ B pathways were found to act downstream to MrgXs, as evidenced by the inhibitory effects of MrgX1-X4 siRNAs and ERK-, JNK-, p38- and NF- $\kappa$ B-specific inhibitors. As expected, AMP-IBP5 markedly induced ERK, JNK, p38 and I $\kappa$ B phosphorylation. Moreover, AMP-IBP5 increased intracellular cAMP, which was required for VEGF but not IL-8 production. Taken together, our findings suggest that besides its antimicrobial property, AMP-IBP5 likely contributes to wound healing process through activation of human keratinocytes.

## CS03-1-4

**A virulence factor of *Candida albicans*, Candidalysin, modulates human keratinocyte functions**

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Psoriasis is a systemic, immune-mediated, inflammatory skin condition mediated by keratinocytes, T cells and various cytokines. Interestingly, some of cytokines involved in psoriasis pathogenesis participate in the host defense

against pathogens, including *Candida* species, which are known to exacerbate the psoriatic process. It is thought that super-antigens and toxins of *Candida* can worsen psoriasis symptoms; however, the fungal virulence factors responsible for psoriasis exacerbation are still not well understood. Recently, candidalysin, a cytolytic peptide toxin secreted by *C. albicans* hyphae was reported to be a crucial factor required for *C. albicans* infections. Given that candidalysin activates epithelial immune responses, we hypothesized that this toxin factor might activate keratinocytes, therefore playing a key role in the inflammatory process in skin psoriasis. In this study, we examined the effects of candidalysin on human keratinocytes and clarified the molecular mechanism involved. Treatment of normal human epidermal keratinocytes with candidalysin resulted in production of various cytokines and chemokines (GM-CSF, IL-1a, IL-6, IL-8, MIP-3 $\alpha$ , and TNF- $\alpha$ ), which have been implicated in psoriasis pathogenesis. Candidalysin also caused cell damage, as confirmed by activation of the MAPK phosphatase MKP-1 and c-Fos pathways that are associated with cell damage. Furthermore, candidalysin induced phosphorylation of I $\kappa$ B and MAPKs. Indeed, we confirmed that MAPK and NF- $\kappa$ B pathways were required for the candidalysin-induced secretion of cytokines/ chemokines, as evidenced by the inhibitory effects of ERK-, JNK- p38-, and NF- $\kappa$ B-specific inhibitors. In conclusion, our observations suggest that candidalysin might act as a trigger for the exacerbation of psoriasis through activation of keratinocytes.

CS03-1-5

### Effects of platelet-rich plasma on proliferation and migration in human dermal fibroblasts

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**Background** Platelet-rich plasma (PRP) is a blood-derived fraction containing high concentrations of several growth factors, attracting attention in various medical fields including orthopedic, plastic, and dental surgeries and dermatology for its wound healing ability. However, the precise molecular mechanisms of the PRP-induced wound healing are unknown. The aim of this study was to evaluate the effects of PRP on the remodeling of extracellular matrix, a process that requires activation of dermal fibroblasts.

**Methods** PRP was prepared using a double-spin method. MTS uptake assay was used to investigate the cell proliferation of human dermal fibroblasts, and in vitro scratch wound assay was used to evaluate cell migration. Enzyme-linked immunosorbent analysis was used to analyze the expression of human procollagen I alpha 1, elastin, matrix-metalloproteinase-1 and -2 proteins. We evaluated the activation of extracellular signal-regulated kinase (ERK), p38 and C-Jun N-terminal kinase (JNK) in PRP-treated human dermal fibroblasts by western blot.

**Results** Platelet numbers in PRP increased to 4.6-fold higher than whole blood. PRP stimulated both proliferation and migration of human dermal fibroblasts. PRP increased the expression of human procollagen I alpha 1, elastin, MMP-1 and -2 proteins in human dermal fibroblasts. PRP-treated human dermal fibroblast also showed dramatically reduced protein expression of phosphorylated JNK, whereas the level of total protein was not significantly reduced.

**Conclusion** Our findings provide a basis for elucidating the potential effects and molecular mechanism of PRP on tissue remodeling.

CS03-1-6

### Local hyperthermia promotes the healing of sporotrichosis by activating CRAC channel of immunocytes in lesions

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Sporotrichosis is a worldwide chronic granulomatous fungal disease. The present predominant treatment for sporotrichosis is potassium iodide therapy. However, potassium iodide therapy has a long treatment cycle and obvious side effects. There were sporotrichosis cases that successfully treated by local hyperthermia, but the mechanism remains to be studied. Ca<sup>2+</sup> influx is required for the activation of the cellular function of immunocytes.

The Ca<sup>2+</sup> release-activated Ca<sup>2+</sup> (CRAC) channel is the principal Ca<sup>2+</sup> entry mechanism in immunocytes. CRAC channels are activated by stromal interaction molecules 1 (STIM1), recently study showed that STIM1 can sense mild increases in temperatures and activate CRAC channels. We showed that 42°C hyperthermia treatment resulted in strong Ca<sup>2+</sup> influx by activating CRAC channel which could make macrophages and CD4<sup>+</sup>T cells more powerful to kill sporothrix. And we found that 42°C local hyperthermia could promote the healing of murine sporotrichosis. No obvious promoting in the healing of sporotrichosis was observed in mouse intracutaneous injected with CRAC channel selective inhibitor BTP2 before application of hyperthermia. In our study, we propose that 42°C hyperthermia could result in CRAC related Ca<sup>2+</sup> influx, promoting the healing of murine sporotrichosis.

CS03-1-7

### **Over-expressed TNFAIP3 promotes melanoma growth, invasion, migration and immune escape function by activating STAT3/PD-L1 pathway**

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**Background** To investigate the role of Tumor necrosis factor alpha-induced protein 3 (TNFAIP3) in melanoma progression and PD-L1 inducing immune escape.

**Methods** qRT-PCR, Western Blot and Tissue Microarray were used to observe mRNA and protein expression level of TNFAIP3 in melanoma cell lines and tissues as well as primary melanocytes and nevi tissues. CCK8 assay, flow cytometry, colony formation, transwell, Immunofluorescence and xenograft assay were used to evaluate function of TNFAIP3 in melanoma growth, migration and invasion. Western Blot, immunofluorescence, co-IP and mass spectrometer were used to investigate the down-stream signaling pathway that regulated by TNFAIP3 in melanoma. TCGA database analysis, co-cultivation assay, cytometry and mice model were used to confirm the relationship between TNFAIP3 and PD-L1.

**Results** 1. Compared with primary melanocytes and nevi tissues, TNFAIP3 is significantly over-expressed in melanoma cells and tissues; 2. Knockdown of TNFAIP3 significantly inhibits melanoma cell growth in both vivo and vitro level, as well as induces cell skeleton disarrangement, following impairs cell invasion and migration ability, while over express TNFAIP3 can promote cell growth, invasion and migration; 3. TNFAIP3 directly combines with JAK2, facilitates its phosphorylation and promote Stat3 activation, which subsequently increases cell proliferation, invasion, migration and PD-L1 expression; 4. Silencing TNFAIP3 can significantly decrease PD-L1 expression in both cytoplasm and cytomembrane, subsequently enhance the cytotoxicity of CD8<sup>+</sup>T cells both in vitro and in vivo.

**Conclusion** We demonstrated that TNFAIP3 plays a tumorigenic role and may become a potential drug target in melanoma.

CS03-1-8

### **CX3CR1-deficiency alleviates skin inflammation by blocking Ly6Chi monocytes migration and Langerhans cell local repopulation**

Ying-Ping Xu

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Conventional Langerhans cells (LCs) in epidermis possess a unique life cycle and developmental origin and play a critical role in maintaining skin homeostasis. Recent studies indicated that Ly6Chi monocyte-derived LCs could be repopulated to inflamed skin and involved in inflammatory response. However, how to regulate Ly6Chi monocytes migration to skin and LCs local repopulation remains unclear. CX3CR1 is expressed in a variety of immune cells including monocytes and contributes to monocyte migration. Here we used CX3CR1 knockout (KO) mice in which *Cx3cr1* gene was replaced by the EGFP reporter gene, to investigate the role of CX3CR1 in Ly6Chi monocyte migration and monocyte-derived LCs regeneration. We found that Ly6Chi monocyte-derived LCs highly express MHCII molecule and secrete more proinflammatory factors TNF $\alpha$  and IL-1 $\beta$ , compared to conventional LCs, and

that the number of Ly6Chi monocyte-derived LCs in the epidermal sheet from DNFB-induced contact hypersensitivity (CHS) and UV irradiation-induced dermatitis was significantly decreased in Cx3cr1KO mice compared to wild-type (WT) mice; furthermore, DNFB-induced CHS and UV irradiation-induced dermatitis were alleviated in Cx3cr1KO mice. Interestingly, the number of Ly6Chi monocytes was increased in periphery blood and spleen in CX3CR1KO mice compared to WT mice under inflammatory conditions, suggesting a potential defect in Ly6Chi monocyte migration to skin. To further test this possibility, we co-transferred e450-labelled monocytes from WT mice with CFSE-labelled monocytes from Cx3cr1KO mice to the CD45.1 recipient mice challenged with DNFB, and found that more Ly6Chi monocytes from WT mice were accumulated in the skin compared to Ly6Chi monocytes from Cx3cr1KO mice. Overall, our data suggest that CX3CR1-deficiency reduces Ly6Chi monocyte migration ability to inflamed skin and decreased Ly6Chi monocyte-derived LCs local repopulation, which could contribute to reduced DNFB-induced CHS and UV-induced dermatitis. CX3CR1 may serve as a potential new therapeutic target for skin inflammatory diseases.

CS03-1-9

### **1,25-(OH)<sub>2</sub> Vitamin D<sub>3</sub> inhibits autologous DNA immune complex induced dendritic cells activation and modulates Treg/Th17 immune balance in systemic lupus erythematosus**

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**Methods** Peripheral blood mDC was stimulated by DNA-ICs and/or VD<sub>3</sub> before and after histone deacetylase 3 (HDAC3) gene interference by siRNA. The expression of NF- $\kappa$ B subunit RelB and CD83, CD86, HLA-DR, CD14 was detected by WB and FACS, and TNF- $\alpha$ , IL-10 secretion was detected by ELISA respectively. The histone acetylation level in the RelB gene promoter was determined by chromatin immunoprecipitation (ChIP) assay. The immune balance of Treg/Th17 cells was determined after the co-culture of homologous CD4<sup>+</sup>T lymphocytes with different stimulators primed-mDCs.

**Results** DNA-ICs could stimulate mDCs to upregulate intracellular RelB protein and cell surface CD86, CD83 and HLA-DR expression, and enhance TNF- $\alpha$  secretion. VD<sub>3</sub> could upregulate the CD14 expression and promote IL-10 secretion, while inhibit the RelB, CD86, CD83, HLA-DR expression and TNF- $\alpha$  secretion in DNA-ICs stimulated mDCs. VD<sub>3</sub> could decrease the acetylation level of RelB gene promoter region and significantly inhibit DNA-ICs stimulated RelB gene promoter activation. The inhibition effects of VD<sub>3</sub> could be significantly reduced after HDAC3 gene interference. DNA-ICs primed-mDCs could stimulate CD4<sup>+</sup>T proliferation, increase intracellular IFN- $\gamma$ , IL-4, IL17 expression and TNF- $\alpha$  secretion, but VD<sub>3</sub> could inhibit its proliferation effects with a dose-dependent manner, and decrease IFN- $\gamma$ , IL-4, IL17, TNF- $\alpha$ , CD127 expression and increase Foxp3 expression in CD4<sup>+</sup>T cells.

**Conclusions** In this study, we firstly gave confidences that autologous DNA-ICs could stimulate mDCs activation and secretion of inflammatory factors IL-17, TNF- $\alpha$ , and promote CD4<sup>+</sup>T lymphocyte polarizing to Th1. While VD<sub>3</sub> could inhibit the activation effects of DNA-ICs on mDC, promote regulatory T cells generation, inhibit the immune inflammation and induce immune balance in SLE.

CS03-1-10

### **Genome-wide screening and function analysis of long noncoding RNA expression in CD4<sup>+</sup> T cells of systemic lupus erythematosus**

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**Background** The mechanism of CD4<sup>+</sup> T cells dysfunction in systemic lupus erythematosus (SLE) has not been fully understood. Increasing evidence showed that long noncoding RNAs (lncRNAs) can regulate immune response and take part in some autoimmune diseases such as SLE. However, little is known about the lncRNAs expression and function in CD4<sup>+</sup> T of SLE. Here we aimed to detect the profile of lncRNAs expression in lupus CD4<sup>+</sup> T cells and

explore the potential lncRNAs involved in the pathogenesis of SLE.

**Methods** The expression levels of lncRNAs and mRNAs in CD4+ T cells from SLE and healthy controls were detected by microarray. Bioinformatics analysis was done to investigate the potential roles of lncRNAs. 6 differentially expressed lncRNAs were randomly chosen for validation by quantitative PCR (qPCR).

**Results** A total of 1887 lncRNAs and 3375 mRNAs were aberrantly expressed in CD4+ T cells of SLE compared to healthy controls. The expression patterns of 6 chosen lncRNAs were consistent between microarray data and qPCR results. GO and KEGG pathway analysis indicated that 27 gene regulations and 53 signaling pathways related to differentially expressed mRNAs. A list of lncRNAs might play roles in the pathogenesis of SLE by comparing the difference between co-expression networks. Co-expression network recognized several lncRNAs as core genes.

**Conclusion** Our results showed that the lncRNAs expression profile is altered in CD4+ T cells of SLE, which providing a potential target for further mechanistic studies of SLE pathogenesis.

## Basic Research 2

CS03-2-1

### Research on susceptible genes and immunopathogenesis of cutaneous adverse drug reaction in Chinese Hans

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The incidence of ADR has markedly increased in recent years. Data shows it already became 4-6th leading cause of death and in US, 136 billion was used on ADR which was far more than the expense on DM and Cardiovascular diseases. Drugs can cause a variety of exanthems. Mild cADRs including MPE, Urticaria and FDE are commonly seen, while DRESS, AGEP and SJS, TEN also affects internal organs and have a much higher mortality. Strong correlations between the expression of specific alleles of the human leukocyte antigen (HLA) and drugs have been found in patients with different ethnicities. The strongest associations have been found in patients of Asian descent expressing the HLA-B\*15:02 in carbamazepine (CBZ) induced SJS and in patients expressing HLA-B\*58:01 in allopurinol induced SJS/TEN. But all reports were not in mainland of china. The cytotoxic signals to explain ADRs were somehow still unclear. The viral infections and the development of ADRs had been noticed-, esp. with DRESS. But the sample size was small and the results were contradictory. Our clinic retrospective study of hospital-based cADRs in the past 10 years gave us a list of most common causative drugs. Strong associations between Carbamazepine and HLA-B\*15:02, Allopurinol and HLA-B\*58:01, Salazosulfapyridine and HLA-B\*13:01, Methazolamide and HLA-B\*59:01, Tetanus Antitoxin and HLA-A\*2, Clindamycin and HLA-B\*51:01, Clarithromycin and HLA-A\*02:07:01 were found in Han Chinese. Cytotoxic molecules expressions were not very consistent in patients' sera comparing to that in tissue's. Serum level of sFasL, Perforin and Granzyme B was found having positive relationship with ALT and AST. Among all 52 DRESS patients, 3 patients died within 3 months after discharge who had EBV reactivation during hospitalization. 3 patients got hypo/hyperthyroidism, which were detected HHV6 reactivation during hospitalization. The genetic marker screening kits might dramatically decrease the incidence of cADRs, esp, SCARs.

CS03-2-2

### Susceptibility of epithelial derived stationary tumor cells to hyperthermia

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**Background** Human skin or mucosa are exposed to both internal and exogeneous thermal environment, and survive in a certain range of temperature. Exogeneous hyperthermia has been applied in the treatment of various types of cancers, fungal disease and warts. The aim of this study was to determine whether different cellular components in

the skin adapt to hyperthermia conditions differently and elucidate the mechanism.

**Methods** Cell viability was measured by the MTS assay. For apoptosis analysis of cells post hyperthermia, cells were stained with FITC-conjugated Annexin V apoptosis detection kit. Ca<sup>2+</sup>-sensitive fluorescent single wavelength dye Fluo-4 AM was used to measure changes in [Ca<sup>2+</sup>]<sub>i</sub> post hyperthermia.

**Results** Here we showed that the thermo resistance of different types of epithelial and epithelial tumor cells was different when subjected to heat at 45°C for 30min. We noted that hyperthermia had stronger effects on the cell viability and apoptosis in epidermal cells than their malignant counterparts except cell lines harboring human papillomavirus (HPV). Hyperthermia had much more effect on the cell viability and apoptosis in HPV-negative cell line than positive cell lines. We further found that hyperthermia treatment resulted in strong Ca<sup>2+</sup>-influx which lead to apoptosis in cells. However, no obvious increase of apoptotic cells were observed in cells treated with CRAC channel selective inhibitor BTP2 before application of hyperthermia in all cell types, except three cervical cell lines harbored HPV.

**Conclusion** We propose that hyperthermia results in CRAC related strong Ca<sup>2+</sup> influx, inducing apoptosis except for HPV-positive cells.

### CS03-2-3

#### **Photodynamic therapy against both methicillin-resistant *Staphylococcus aureus* and *Pseudomonas aeruginosa***

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In previous studies conducted by our own group, we have shown that photodynamic therapy (PDT) using 5-aminolevulinic acid (ALA) has bactericidal effects against methicillin-resistant *Staphylococcus aureus* (MRSA) as gram-positive bacteria and *Pseudomonas aeruginosa* (PA) as gram-negative bacteria individually. However, infected ulcers usually carry gram-positive and gram-negative bacteria simultaneously. Therefore, we investigated the antibacterial effect of PDT against doubly infected sample with MRSA and PA in this study. PDT was performed on mixed sample of MRSA and PA treated with 0.5% ALA in vitro. A bacteria count was done 24 hours after PDT, and its result showed bactericidal effects of PDT on this setting. To investigate the difference of PDT irradiation interval in vitro, a bacteria count was performed 48 hours after PDT. The results showed an increase in the bacteria count similar to that without PDT. Therefore, it is clear that PDT did not have any bactericidal effects 48 hours after irradiation. Next, PDT was performed twice at the start and 24 hours later. A bacterial count after 48 hours from the first PDT decreased significantly compared to that without PDT. In conclusion, PDT showed bactericidal effect even against mixed culture. In addition, it was suggested that PDT performed every 24 hours was more effective than every 48 hours

### CS03-2-4

#### **17β-estradiol affects hair follicle growth via cannabinoid receptor type 1**

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There are mainly two distinct isoforms of the estrogen receptors (ERs) exist: namely, ERα and ERβ. These ERs are found in many organs, including mammary gland, prostate, testis, placenta, brain pituitary, cartilage, adipocytes, osteoblasts, skin and hair follicle (HF). In human HFs, ERβ is reported to be mainly expressed. 17β-estradiol (E2) treatment has been reported to inhibit HF growth by organ cultured human HFs. Similar to the effect of E2 shown by organ cultured human HFs, we have previously reported that the endocannabinoid, anandamide (AEA) significantly inhibited human HF growth via cannabinoid receptor type 1 (CB1) mediated signaling. Interestingly, estrogens are reported to increase AEA concentrations by decreasing the activity of fatty acid amide hydrolase (FAAH) which is responsible for AEA degradation in the mouse uterus. Therefore, we asked whether E2 affects CB1 in human HFs.

CB1 expression was significantly upregulated within the outer root sheath (ORS) of E2 (10<sup>-7</sup> M, 24hrs) treated organ cultured human HF's compared to vehicle treated HF's. Furthermore, E2 significantly increased CB1 expression in isolated human ORS cells for 24hrs. Taken together, E2 increases CB1 expression in human HF's and this suggests that the hair growth inhibitory effects of E2 may closely related to activated CB1 mediated signaling. Current study may unveil a novel mechanism by which E2 inhibits human HF growth and may contribute to develop new drugs for treating hair diseases including female pattern hair loss.

### CS03-2-5

#### **Adiponectin promotes caspase-14 expression in normal human epidermal keratinocytes**

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**Background** Recent studies have reported that adiponectin plays in regulating skin inflammation and expression of antimicrobial peptide, and adiponectin has protective effects on photoaging and premature cellular senescence. The aim of this study was to investigate the effect of adiponectin on expression of caspase 14 and FLG breakdown products in normal human epidermal keratinocytes (NHEK).

**Methods** NHEK were serum-starved for 6 hours before being treated with adiponectin. Afterward, gene mRNA expression was quantified using real time RT-PCR and protein expression was evaluated using immunofluorescence and Western blot. To quantitatively assess the natural moisturizing factor amino acid, we used high performance thin layer chromatography. To evaluate the relationship between mitogen activated protein kinases (MAPKs), activator protein 1 (AP-1), FLG and caspase-14, we also treated cells with inhibitors for MAPKs; JNK, p38 and ERK1/2.

**Results** Caspase 14 mRNA and protein expression were markedly increased after the addition of adiponectin. Our data suggests that adiponectin has the ability to promote caspase 14 expression via p38 and ERK1/2 and thereby increase the rate at which FLG is broken down. Adiponectin increased the concentrations both serine and pyrrolidone-5-carboxylic acid.

**Conclusion** Adiponectin seems to positively regulate the processing of FLG and could be useful as a therapeutic agent to control diseases that alter the skin barrier.

### CS03-2-6

#### **Targeting phosphorylation of p21 activated kinase 1 at Thr423 induces cell cycle arrest and apoptosis in cutaneous T-cell lymphoma cells**

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**Background** Exploring new targeted agents for cutaneous T-cell lymphoma (CTCL) is an urgent need. IPA-3, a small molecule inhibitor of the p21-activated kinase (PAK1) activation, binds covalently to the PAK regulatory domain and prevents its binding to the upstream activators. The aim of the study was to evaluate the anti-tumor effect of IPA-3 on CTCL cells and the underlying molecular pathogenesis.

**Methods** Western blotting was used to detect the protein expression of phosphorylated PAK1 (pho-PAK1) among HH and Hut78 cell lines and HaCat cells. HH and Hut78 cells were treated with different concentrations of IPA-3 for 24 and 48 h. MTS assay was performed to evaluate cell viability at each time point. Flow cytometry was then conducted to analyze cell cycle and detect cell apoptosis. The exact mechanism of pho-PAK1 suppression on CTCL cells was detected by Western blotting.

**Results** Our results showed that pho-PAK1 was overexpressed in HH and Hut78 cells compared to HaCat cells. IPA-3 could significantly inhibit the proliferation of HH and Hut78 cells in a dose-dependent manner. Compared with the control, IPA-3 treatment group showed a significant increase in number of cells at G0/G1 phase. In addition, the percentage of apoptotic cells was increased in the treatment group. Further study demonstrated that IPA-3 treatment caused an increase in EGR1 protein levels and a decrease in apoptosis related BCL-2 and pho-BAD proteins.

**Conclusion** Our study suggests that IPA-3 may be an effective inhibitor for CTCL, and EGR1, BCL-2 and pho-BAD may underlie the therapeutic action of IPA-3 in CTCL cells.

CS03-2-7

### **Roles of the TGF- $\beta$ 1/Smad signalling pathway in the development of UV-induced cutaneous squamous cell carcinoma**

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**Background** Cutaneous squamous cell carcinoma (SCC) is closely related to ultraviolet (UV) radiation. Studies have found that the TGF- $\beta$ 1/Smad signalling pathway plays inconsistent roles in normal skin and SCC, but the mechanism remains elusive. The aim of this study was to examine the effect of the TGF- $\beta$ 1/Smad signalling pathway in UV-induced cutaneous SCC.

**Methods** We performed bioinformatics analysis and western blotting to examine skin tissues. The TGF- $\beta$  receptor I/II (TGF- $\beta$ R I/II) dual inhibitor LY2109761 was used to inactivate the TGF- $\beta$ 1 signalling pathway in keratinocytes to evaluate its impact on cell biological function and related protein expression.

**Results** Bioinformatics analysis of gene chip sequencing showed that Smad3 and TGF- $\beta$ 1 expression levels were increased in SCC, while TGF- $\beta$ RI expression was decreased. Western blotting was employed to verify the expression levels of proteins involved in this signalling pathway. LY2109761 was used to inactivate the TGF- $\beta$ 1 signalling pathway in HaCaT, ultraviolet (UV)-induced HaCaT and SCL-1 cells. Further studies demonstrated that the TGF- $\beta$ 1/Smad signalling pathway promotes UV-induced SCC by facilitating UV-induced HaCaT cell proliferation and inhibiting keratinocyte apoptosis, promoting migration and inhibiting the phosphorylation of H2AX.

**Conclusion** Our findings shed new light on the synergistic effect of the TGF- $\beta$ 1/Smad signalling pathway in promoting UV-induced cutaneous SCC and on the involvement of  $\gamma$ -H2AX in this process.

CS03-2-8

### **Role of thrombospondin 1 (TSP1) mediated by mouse skin-derived precursors (mSKPs) in the anti-UVB radiation damage via TGF- $\beta$ /Smad pathway**

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**Background** To investigate the mSKPs' response to UVB radiation, and to study the role of TSP1 in TGF- $\beta$ /Smad signaling pathway in mSKPs' anti-UVB radiation damage, as compared with mouse fibroblasts (mFBs).

**Methods** We determined the cell survival rate before and after the UVB radiation.  $\beta$ -galactosidase staining and Calcein-AM/Propidium Iodide staining were employed to test the cell senescence and death. The concentration of TSP1 and TGF- $\beta$ 1 in the supernatant were determined by ELISA. RT-PCR was employed to measure the gene expression of TSP1, TGF- $\beta$ 1, MMP1, and type I collagen. We also applied Western-blot to measure the protein expression of TSP1, TGF- $\beta$ 1, MMP1, type I collagen, Smad2/3, and p-Smad2/3.

**Results** No obvious morphological change was noticed in mSKPs before and after the UVB radiation, but mFBs became round and afloat after the radiation. For mSKPs, the cell survival rate revealed cell death and a decreased survival rate 24h after the UVB radiation, and an increase in the survival rate at 48h and 72h after the UVB radiation. A decreased survival rate was noticed at 96 h, which was higher than that at 24h. The survival rate of mFBs after the UVB radiation kept decreasing at all the time points.  $\beta$ -galactosidase staining and Calcein-AM/Propidium Iodide staining indicated cell senescence and death 24h after the radiation, and certain recovery 48h after the radiation in mSKPs. The recovery was not as obvious in mFBs. The concentration of TSP1 and TGF- $\beta$ 1 increased significantly in mSKPs' supernatant 6h, 12h, and 24h after UVB radiation. No significant change was noticed in mFBs' supernatant. According to the RT-PCR results, in mSKPs, the gene expression of TSP1, TGF- $\beta$ 1, MMP1, and type I collagen increased significantly 3h and 6h after the 60mJ/cm<sup>2</sup> UVB radiation, but decreased significantly 12h and 24h after

the radiation. In mFBs, the gene expression of TSP1 and type I collagen decreased significantly at all time points after the radiation, the gene expression of MMP1 increased significantly at all time points after the radiation, the gene expression of TGF- $\beta$ 1 decreased significantly 3h after the radiation, and increased significantly at the other time points. According to the Western-blot results, in mSKPs, the expression of TSP1, TGF- $\beta$ 1, MMP1, and p-Smad2/3 increased significantly 6h, 12h, and 24h after the 60mJ/cm<sup>2</sup> UVB radiation, the expression of Smad2/3 decreased significantly at all time points after the radiation. The expression of type I collagen increased significantly 6h, 12h after the radiation, and decreased significantly 24h after the radiation. In mFBs, the expression of TGF- $\beta$ 1 and MMP1 increased significantly at all time points after the radiation, and the expression of other proteins decreased significantly.

**Conclusions** Photodamage was observed after the UVB radiation in both mSKPs and mFBs. For mSKPs, one of the photodamage recovery & prevention mechanisms might be the activation of TGF- $\beta$ /Smad pathway by TSP1. For mFBs, the recovery was not noticed, and there might be other signaling pathways.

CS03-2-9

### Hydrogen gas inhalation protects against cutaneous ischemia/reperfusion injury in a mouse model of pressure ulcer

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**Background** Pressure ulcer formation depends on various factors among which repetitive ischemia/reperfusion(I/R) injury plays a vital role. Molecular hydrogen (H<sub>2</sub>) had protective effects on I/R injuries of various internal organs. We aimed to investigate the effects of H<sub>2</sub> inhalation on pressure ulcer and the underlying mechanisms.

**Methods** I/R cycles were performed on mouse dorsal skin to induce pressure ulcers. Wound size measurement, histopathological & immunohistochemical examinations, and TUNEL assay were performed to evaluate the degree of tissue damage. To clarify the underlying mechanism of H<sub>2</sub>, reactive oxygen species (ROS) levels, antioxidant enzyme activities, and expression of NRF-ARE pathway components, proinflammatory cytokines, healing-associated molecules, and adhesion molecules were assessed in wound tissue and/or H<sub>2</sub>O<sub>2</sub>-treated endothelia by ELISA, real-time PCR, Western blotting, and/or IHC.

**Results** H<sub>2</sub> inhalation significantly reduced wound area, 8-oxo-dG level (oxidative DNA damage), and cell apoptosis rates in skin lesions. H<sub>2</sub> remarkably decreased ROS accumulation and enhanced antioxidant enzymes activities by upregulating expression of Nrf2 and its downstream components in wound tissue and/or H<sub>2</sub>O<sub>2</sub>-treated endothelia. Meanwhile, H<sub>2</sub> inhibited the overexpression of MCP-1, E-selectin, P-selectin, and ICAM-1 in oxidant-induced endothelia, and reduced inflammatory cells infiltration and pro-inflammatory cytokines (TNF- $\alpha$ , IL-1, IL-6, and IL-8) production in the wound. Furthermore, H<sub>2</sub> promoted the expression of pro-healing factors (IL-22, TGF- $\beta$ , VEGF, and IGF1) and inhibited the production of MMP9 in wound tissue in parallel with acceleration of cutaneous collagen synthesis.

**Conclusion** These results indicated that H<sub>2</sub> suppressed the formation of pressure ulcers by its anti-oxidant, anti-inflammatory, pro-healing activities against cutaneous I/R injury.

CS03-2-10

### Genome-wide analysis of protein-coding variants in leprosy

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Although genome-wide association studies have greatly advanced our understanding of the contribution of common noncoding variants to leprosy susceptibility, protein-coding variants have not been systematically investigated. We carried out a three-stage genome-wide association study of protein-coding variants in Han Chinese, of who were 7,048 leprosy patients and 14,398 were healthy control subjects. Seven coding variants of exome-wide significance

were discovered, including two rare variants: rs145562243 in NCKIPSD ( $P = 1.71 \times 10^{-9}$ , odds ratio [OR] = 4.35) and rs149308743 in CARD9 ( $P = 2.09 \times 10^{-8}$ , OR = 4.75); three low-frequency variants: rs76418789 in IL23R ( $P = 1.03 \times 10^{-10}$ , OR = 1.36), rs146466242 in FLG ( $P = 3.39 \times 10^{-12}$ , OR = 1.45), and rs55882956 in TYK2 ( $P = 1.04 \times 10^{-6}$ , OR = 1.30); and two common variants: rs780668 in SLC29A3 ( $P = 2.17 \times 10^{-9}$ , OR = 1.14) and rs181206 in IL27 ( $P = 1.08 \times 10^{-7}$ , OR = 0.83). Discovered protein-coding variants, particularly low-frequency and rare ones, showed involvement of skin barrier and endocytosis/phagocytosis/autophagy, in addition to known innate and adaptive immunity, in the pathogenesis of leprosy, highlighting the merits of protein-coding variant studies for complex diseases.

## CS04 Benign and Malignant Tumors

### Benign and Malignant Tumors 1

#### CS04-1-1

##### Role of fusion genes in the pathogenesis of cutaneous tumors

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Fusion genes are hybrid genes formed from more than two previously separate genes. It can occur as a result of chromosomal translocation, interstitial deletion, or inversion. Although not always functional, they may induce tumorigenesis via various mechanisms including the activation of cellular signal transduction. A lot of researches have identified fusion genes in each tumor, which leads to clarify its pathogenesis as well as to develop novel diagnostic tools and therapeutic approaches. In cutaneous tumors, COL1A1-PDGFB in dermatofibrosarcoma protuberans or TLS-CHOP in liposarcoma have been well-known. We recently identified fusion genes in angiosarcoma and squamous cell carcinoma. This talk discusses the significance of fusion genes in cutaneous tumors.

#### CS04-1-2

##### pH-triggered synergistic chemo-photothermal therapy to inhibit progression of melanoma by eliciting antitumor immunity

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**Background** The relatively ineffectiveness, nonselectivity, easy to relapse and severe side effects of conventional therapies has driven malignant melanoma with higher mortality. The purpose of this study was to fabricate a highly effective, minimal toxic and immunogenic nanocomposite for melanoma.

**Methods** The synthesis, characterization, properties, cytotoxicity to melanoma cells and related mechanisms on the induction of tumor-specific immune response of this nanocarrier were explored in vitro and in vivo. In addition, the effect of this AuNP@mSiO<sub>2</sub>@DOX-ZnO nanocomposite in inhibiting tumor growth and lung metastasis, eliciting antitumor immune responses and its safety profiles in murine melanoma models were also monitored in vivo.

**Results** Herein, we created a versatile and immunogenic nanocomposite, AuNP@mSiO<sub>2</sub>@DOX-ZnO, which was synthesized with facile and effective strategy and exhibited a high drug payload up to 33.89%, integrating photothermal properties of gold nanoparticles, pH-responsive properties of ZnO and chemotherapy into a single nanoplatform. We showed that, as a promising pH-responsive gatekeeper, the outer ZnO preferentially killed cancer cells by its own properties and guaranteed higher DOX release in more acidic cancerous tissue. Importantly, in addition to induce cell necrosis directly through hyperthermia, the AuNP@mSiO<sub>2</sub>@DOX-ZnO could induce the tumor tissue to release tumor-associated antigens and result in calreticulin exposure on the surface of cancer cell under 655 nm laser irradiation, further promoting the maturation of dendritic cells and forming an effective tumor-specific immune response. Moreover, the nanocomposite could inhibit the expressions of TGF- $\beta$ 1 and MMP9,

reversing tumor immunosuppressive microenvironment in melanoma to a certain extent. Finally, the nanocomposite forcefully inhibited tumor growth and lung metastasis with lower time and power intensity and no obvious side effects were observed *in vivo*.

**Conclusion** Our study developed a promising nano-based combinational therapy nanoplatform which could induce systemic anti-tumor immunity in melanoma, providing a potential strategy for breaking through the limitation of immunotherapy.

CS04-1-3

### **Clinical analysis of calcifying epithelioma: a retrospective study during 11 years period**

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We report a study of 123 tumors that were pathologically diagnosed as calcifying epithelioma in 114 patients who visited the Dermatology Department of Fukushima Medical University between 2007 and 2017. The male to female ratio was approximately 1:1.7. 30 years or younger accounted for 69% ( $n=79$ ), and those aged 0-10 years accounted for the largest group at 40.7% ( $n=46$ ). In the site distribution, the face accounted for the largest number at 40.7% ( $n=50$ ), upper limbs accounted for second group at 17.1% ( $n=21$ ). Compared with previous studies of the Japanese population, the male to female ratio and onset age were generally similar. However, regarding sites of onset, the results of the current study differ from those of previous reports. Whereas the face was the most common site in the current study, the previous studies reported the upper limbs to be either as common as the face, or more common.

CS04-1-4

### **Integration of periostin, M2 macrophages and integrin in human and murine melanoma progression**

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Periostin is a multifunctional matricellular protein that has an important role in regulating melanoma behavior. Periostin is also involved induction in tolerogenic CD163+ M2 macrophages. However, a comprehensive study about the relation among periostin, CD163+ M2 macrophages and melanoma progression has poorly investigated. Thus, we examined the prognostic values of periostin and infiltrated M2 macrophages in human and murine melanoma. In human melanoma, we immunohistologically examined the expression of stromal periostin and the infiltration of CD163+ M2 macrophages, and statistically analyzed the associations of these variables with the patients' histological features, clinical stage, and prognosis. In addition, we established a murine inflammatory skin model that expressed stromal periostin, and investigated the relationship among periostin expression, the number of CD163+ M2 macrophages, and melanoma progression. In human melanomas, high expression of periostin and a large number of infiltrated M2 macrophages were significantly correlated with poor prognosis. In our murine model, B16 melanoma cell growth in the inflamed periostin-high skin was significantly faster than that in control skin. Intriguingly, significantly more number of CD163+ M2 macrophages were recruited in the melanomas in the inflamed periostin-high skin than those in control skin. Both in human and murine melanoma, periostin receptor  $\alpha V\beta 5$  integrin was preferentially expressed in melanoma cells whereas CD163+ M2 macrophages mainly harbored periostin receptor  $\alpha V\beta 3$  integrin. These findings stress a critical role of periostin and M2 macrophages in melanoma progression and prognosis irrespective of human and mouse, indicating that periostin may be a potential target in treating progressive melanoma.

## CS04-1-5

**Clinical analysis of 70 cases of eccrine poroma**

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Eccrine poroma is a benign tumor derived from intraepidermal sweat duct, which occurs frequently in middle and old age. In this study we investigated 70 cases of eccrine poroma (71 lesions) that we experienced in our department over the past 12 years. The age at the first visit ranged from 31 years to 98 years, and the average age was 73.2 years. The number of males and females was 31 and 39, respectively, with a slight predominance in females. The most common site of lesions was the lower limbs, accounting for 23 lesions (32.3%), followed by 19 foot lesions (27.1%), 8 chest and abdomen lesions (11.2%), 8 waist and back lesions (11.2%), and 6 upper limb lesions (8.4%). Many of the clinical types showed pedunculated or dome-shaped nodules with reddish color, whereas plaque lesions were observed in 7 cases (16.2%). Seventeen lesions (23.9%) were clinically diagnosed as eccrine poroma. Pinkus type was the most common and observed in 62 lesions (87.3%), followed by 6 Smith-Coburn type lesions, 2 poroid hidradenoma lesions and 1 Winkelmann-McLeod type lesion.

## CS04-1-6

**Light responsive biodegradable transformer for theranostics of melanoma**

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**Background** human malignant melanoma is highly malignant and its etiology is not clear yet that might be related to various factors. The diagnose and therapy of malignant melanoma is still a challenge. Activatable multifunctional nanotheranostic agents integrating high efficacy multimodal imaging and accurate therapy have shown great potential in nanomedicine for cancer and drawn tremendous attentions. Herein we aimed to design and prepare a simple-component yet light responsive bio-degradable hollow nanoplatfom to achieve ultrasound/photoacoustic (US/PA) dual mode imaging guided focal photothermal of melanoma.

**Methods** The nanoparticles are detailedly composed of mesoporous silica shells floating gold nanorod (GNRs) cores inside and encapsulated perfluoropentane (PFP). The nanoscaled GNR@SiO<sub>2</sub>-PFP undergoes a liquid-gas phase transition of PFP due to the heat generation of GNRs under near-infrared laser irradiation, thus generates nanobubbles and coalesces into microbubbles. The conversion of nanobubbles to microbubbles can enhance the intratumoral permeation and retention in non-microvascular tissue, as well as tumor-targeted US imaging signals.

**Results** the nanosystem exhibits excellent biocompatibility and biodegradability, distinct gas bubbling phenomenon, high US/PA imaging efficiency of the tumor. The photothermal therapies of tumors that carried out in vitro and in vivo showed remarkable photothermal tumor ablating capability.

**Conclusions** We have successfully developed an intelligent biodegradable nanotheranostic agent for US/PA dual modality imaging guided PTT of melanoma. Such elaborate dual-modal diagnostic/therapeutic strategy opens new possibilities for nano-biomedical applications in melanoma.

## CS04-1-7

**Wolf's isotopic response of cutaneous leukemic infiltration following herpes zoster: a case report**

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Wolf's isotopic response designates the occurrence in chronological order of two unrelated dermatoses at the same anatomic location. We report a case of a 68-year-old man with a medical history of Acute Monocytic Leukemia

(AML-M5) without extra-hematopoietic involvement. The patient developed herpes zoster on the right lumbar region (L1-L4). A few days after resolution of zoster, red-to-violaceous, firm papules and nodules appeared at the sites of previous herpetic lesions, which were confirmed to be the acute leukemic infiltrate by the histopathological examination. To the best of our knowledges, our case represents the first case of acute myelocytic leukemia reported as Wolf's isotopic response in the literature

CS04-1-8

### Effect and underlying mechanisms of monocyte-derived tolerigenic langerhans cells on the development and metastasis of melanoma

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**Background** Recent studies have shown that different subsets of Langerhans cells (LC) play different roles in the early development and metastasis of melanoma. However, the phenotype and function of LC subset which can induce immune tolerance in melanoma still remain unknown. This research intends to identify the tolerigenic LC subset and reveal its immunosuppressive effect and underlying mechanism on the development and metastasis of melanoma.

**Methods** In this study, Langerin-DTR transgenic mouse model, different LC subsets elimination mouse models with the application of monoclonal antibodies as well as clinical specimens were used to investigate the immunosuppressive function and mechanism of tolerigenic LC subset by flow cytometric and immunohistochemical analysis.

**Results** In this study we identified two subsets of LC with different origin in melanoma, namely epidermal resident Ly6C-CD11b+CD207+LC (rLC) and monocyte-derived Ly6C+CD11b+CD207+LC (moLC). The amount of rLC gradually decreased after its migration to the tumor draining lymph nodes. In the meantime, the frequency of moLC gradually increased to supplement the shortage of rLC with the progression of melanoma. With the development of melanoma, the gradually increased TGF- $\beta$  in tumor microenvironment induced moLC to decrease the expression of MHCII while up-regulate PD-L1 expression, representing an immature and tolerigenic phenotype. Finally, the elimination of moLC with Anti-Ly6C monoclonal antibody could increase the number of CD8+PD-1+ T cells in both melanoma tissues and TDLN and significantly inhibit tumor growth and metastasis *in vivo*.

**Conclusions** Our study identified for the first time the subset of monocyte-derived tolerigenic moLC with an immunosuppressive function and demonstrated its contribution to the development and metastasis of melanoma, thus providing a new theoretic basis on immune tolerance as well as a new therapeutic target for melanoma.

CS04-1-9

### Expression of activity-induced cytidine deaminase in melanoma and its correlation with the BRAF mutation and clinicopathological features

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**Background** To detect the expression of activity-induced cytidine deaminase (AID) in melanoma (*in situ*) and invasive melanoma, to analyze the correlation between AID expression and *BRAF* gene mutations, and to characterize its clinicopathological features and prognoses.

**Methods** Immunohistochemistry and quantitative real-time PCR (qPCR) were used to detect the protein and mRNA expressions of AID in paraffin-embedded melanoma tissue samples. The correlations between AID expression and clinicopathological features and other related factors were then comprehensively analyzed.

**Results** Immunohistochemistry showed that the prevalences of AID expression and protein in melanoma samples were 53.75% (43/80) and 13.04% (3/23), respectively, in pigmented nevi samples. This difference was statistically significant ( $P < 0.05$ ). The qPCR showed that the expression level of *AID* mRNA in melanomas was significantly higher than that in pigmented nevi ( $P < 0.05$ ), and the expression of *AID* was closely associated with *BRAF* mutations,

the degree of invasion, lymph node metastasis, Clark grade, and prognosis (all  $P < 0.05$ ), but independent of age, sex, and ethnicity (all  $P > 0.05$ ). In 32 AID-positive patients, 15 patients had multiple organ and lymph node metastases; nine patients, representing 75% (24/32), had a poor prognosis and died, while in AID-negative patients, 48.39% (15/31) had a poor prognosis, suggesting that AID-positive patients were more likely to have a poor prognosis than those that were AID-negative ( $P < 0.05$ ). Among 19 cases with *BRAF* mutations, AID protein expression was positive in 17 cases. Notably, all of the 15 *BRAFV600E* mutation cases had positive expression of the AID protein.

**Conclusions** AID might play a role in the pathogenesis of melanoma by inducing the mutation of *BRAF*, especially *V600E* mutation. And the expression of AID is closely associated with tumor infiltration, lymph node metastasis, Clark grade, *BRAF* mutations, and the prognosis.

CS04-1-10

### **Gardner fibroma with localized hypertrichosis: report of a Chinese case without the APC gene mutation**

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As far as we know, Gardner Fibroma (GAF), manifesting as painless single or multiple subcutaneous masses, is usually accompanied with familial adenomatous polyposis (FAP), which is related to APC mutations. Both of GAF and FAP are presenting signs of Gardner Syndrome (GS), triad of intestinal polyposis, soft tissue tumor (including GAF and desmoid) and osteomas related, also with *APC* mutation. Early diagnosis and management of those patients with GAF can help to prevent malignant degeneration. GAF can serve as the sentinel event for patients without specific gastrointestinal symptoms with or without *APC* mutation. Here, we present a 29-year-old man diagnosed as sporadic GAF without *APC* Gene mutation. Interestingly, localized hypertrichosis were observed on the mass. And a polyp measured 0.5 cm×0.5 cm with the histology of tubular adenoma with low-grade dysplasia was revealed in his sigmoid. We confirmed the significance of GAF as a powerful sentinel element for organ and bone problems with or without *APC* mutation. Comprehensive examinations combining with genetic mutation counseling test are needed to make clear the diagnosis, prognosis and cure. And in this patient, we highlight hypertrichosis as a very special manifestation. We suspect the hypertrichosis of this patient might be induced by the activation of signaling pathways related with cell fate and proliferation of hair follicle and dermal papillae cells

## *Benign and Malignant Tumors 2*

CS04-2-1

### **Clinical and histopathologic features of nail unit melanoma**

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Nail unit melanoma (NUM) is a rare variant of melanoma. However, in Asia, NUM accounts for about 20% of cutaneous melanoma. In its early stage NUM is often misdiagnosed and diagnostic delay results in disease progression. When NUM originates from the nail matrix, longitudinal melanonychia is the most common clinical presentation. As the melanoma spreads to other parts of the nail unit, Hutchinson's sign, which is a fairly diagnostic clue, occurs. As little is known about the progression pattern of subungual melanoma (SUM), further advances on the subject may provide better guidance on the optimal surgical approach. We reviewed histopathology slides of 23 cases of SUM, in which each area of the nail unit in longitudinal sections was available. Dermal invasion of SUM in the nail matrix area tends to occur later than other areas of the nail unit. This finding suggests that conservative surgical treatment for early SUM might be justified as the nail matrix area, an area of thin dermis and close proximity to the underlying bone, appears to be more resistant to invasion. In addition, we analyzed clinical and histopathological findings of 18 cases of SUM *in situ*. Increase in the number of scattered atypical melanocytes with large

hyperchromatic nuclei in a partial nail matrix may provide a diagnostic clue in concert with its clinical suspicion. Very recently, we have analyzed clinical, dermoscopic and histopathological findings of 28 nail matrix nevi (NMNs). Compared with NMNs in adults, pediatric NMNs were wider and nail dystrophy and Hutchinson's sign were more common. Histologically, although enlarged and hyperchromatic melanocytes were found, their presence was focal only within the matrix. In pediatric cases of even-width, sharply demarcated longitudinal melanonychia, the presence of Hutchinson's sign with longitudinal brushy pigmentation might favor a diagnosis of nevus.

#### CS04-2-2

### Study of novel targeting molecules for melanoma treatment

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Cutaneous melanoma is an aggressive malignancy that forms metastases in distant organs in early stage and the melanoma exhibits resistance to traditional chemotherapy and radiotherapy, therefore, the treatment of melanoma is confronted with a big challenge. CD147, also known as extracellular matrix metalloproteinase inducer (EMMPRIN), is a transmembrane glycoprotein belonging to the immunoglobulin superfamily, which is highly expressed in various tumor cells and induces fibroblasts and tumor cells to secrete the matrix metalloproteinases benefiting tumor progression. We find that Fyn is a novel interacting protein with CD147 by yeast two-hybrid and co-immunoprecipitation. Fyn, a member of the Src family belonging to non-receptor tyrosine kinase, which has protein kinase activity, as expected, we demonstrated that Fyn phosphorylates CD147 at two tyrosine sites *in vitro* and *ex vivo* and mutation of phosphorylation CD147 attenuates melanoma cells invasion and metastasis indicating Fyn/CD147 axis is a potential target for melanoma treatment. To identify novel targeting Fyn/CD147 axis inhibitors, we performed structure-based virtual screening and identified CFX-12 as a potential inhibitor. Furthermore, we demonstrated that this compound directly blocked phosphorylation of CD147 by Fyn *in vitro*, leading to inhibition of melanoma cells malignant phenotype. In addition, we also found that the malignant phenotypes, such as colony formation, invasion and migration, were positively related to high PKM2 activity and glycolytic capability in melanoma cells. Knockdown of *PKM2* expression remarkably attenuated melanoma cell proliferation, invasion and metastasis *in vitro* and *in vivo*, suggesting that PKM2 is a potential therapeutic molecule in melanoma. To identify novel PKM2 inhibitors, we performed structure-based virtual screening, an FDA-approved medicine, was identified as a potential PKM2 inhibitor. Furthermore, we demonstrated that this compound directly binded to PKM2 and blocks PKM2 enzyme activity, leading to inhibit aerobic glycolysis as well as cell proliferation, colony formation, invasion and migration *in vitro* and *in vivo*. Interestingly, PKM2 activity and aerobic glycolysis were higher in BRAFi melanoma cells than those in parental cells. Inhibition of PKM2 via suppression of its expression or inhibitor treatment dramatically reduces the malignant phenotype of BRAFi-resistant cells, indicating this compound is a promising inhibitor for melanoma treatment.

#### CS04-2-3

### Efficacy of low dose 5-fluorouracil/cisplatin therapy for invasive extramammary Paget's disease

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**Background** Extramammary Paget disease (EMPD) is one of the cutaneous adenocarcinomas. EMPD patients have a 75-85% chance of surviving five years. On the other hand, in advanced cases such as deep infiltration and lymph node metastasis, they have a poor prognosis. CEA is one of the helpful tumor marker in EMPD. However, there are few reports described other markers. This study was designed to evaluate five tumor markers in EMPD patients.

**Methods** As many as 111 EMPD patients who visited our Dermatology clinic between April 2004 and October 2016 (mean age: 74.1 years; 64 men, 47 women) were recruited for this study. CEA, CA19-9, CA125, CA15-3, and

CYFRA were examined from their blood samples. The relationships between the levels of them and the duration of survival of EMPD patients were analyzed.

**Results** In all tumor markers, positive group had short survival duration against the negative group ( $P < 0.001$ , Log rank test). The sensitivity and specificity was analyzed as the lymph node metastasis was the objective variable. CYFRA had the highest sensitivity (91.7%) and specificity (93.5%) among other markers.

**Conclusion** In EMPD patients, some tumor markers might be helpful for the assessment of the disease progress.

#### CS04-2-4

### Two cases of malignant melanoma treated with BRAF/MEK inhibitors followed by premeditated switch to anti-programmed death-1 antibody

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BRAF/MEK inhibitors and anti-Programmed Death-1 (PD-1) antibodies are both potent medications for the treatment of malignant melanoma. However, the way of their combinations and/or switching has not been established. We here report two cases of malignant melanoma consequentially treated by BRAF/MEK inhibitors and PD-1 antibody. Case 1: A 42-year-old woman developed malignant melanoma in the lumbar region. After a wide excision of the tumor, DAV-feron and feron maintenance therapies were administered. Two years later, subcutaneous metastasis and lymph nodes metastasis were detected. She started to receive vemurafenib, a BRAF inhibitor, and achieved complete response (CR) after 3 months. After 6 months from the beginning of treatment, we changed it to dabrafenib/trametinib, BRAF/MEK inhibitors, and continued them for further 3 months. We then switched to nivolumab, an anti-PD-1 antibody, and she remained CR for a year from the start of nivolumab. Case 2: A 34-year-old woman developed malignant melanoma in the lumbar region. A wide excision and sentinel lymph node biopsy were performed. Both inguinal sentinel lymph nodes revealed metastasis, but she refused to receive additional treatments at that time. After 3 years, multiple metastases were detected in lung, bone, skin, and lymph nodes, being accompanied by severe pain. She then accepted treatment with dabrafenib/trametinib and the metastases of her bone, lung and skin disappeared almost completely. After 6 months from the chemotherapy, we excised the remaining right inguinal lymph node metastases, and switched dabrafenib/trametinib to nivolumab. Lung, bone, skin metastases aggravated in two weeks after stopping dabrafenib/trametinib.

#### CS04-2-5

### TET2-mediated DNA hydroxymethylation epigenetically sensitizes melanoma to all-trans retinoic acid via BMI-1 pathway

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Melanoma is one of the most treatment-resistant cancers, including drug resistance to all-trans retinoic acid (ATRA) treatment. BMI-1 pathway might contribute to inhibiting RAR expression and be involved in ATRA resistance in cancer. We have shown that TET2-mediated DNA hydroxymethylation plays a critical role in melanoma with *BMI-1* as a target gene. Restoration of 5-hydroxymethylcytosine (5-hmC) landscape via *TET2*-overexpression significantly decreased *BMI-1* expression in melanoma cells, further unmasked downstream retinoic acid receptor (RAR) expression in melanoma cells. We also showed that *BMI* silencing enhanced the sensitivity of melanoma cells to ATRA by inducing expression of *RAR β* in cultured melanoma cell *in vitro* and *in vivo*. Thus, our findings demonstrated a functional link between RAR expression and *Bmi-1* pathway. Importantly, epigenetically reprogramming melanoma cells to ATRA treatment was achieved by TET2-mediated DNA hydroxymethylation via inhibiting BMI-1. This study provides a novel avenue of sensitizing melanoma cells epigenetically to ATRA and potential combined therapeutic regimens.

CS04-2-6

**Research progress of traditional Chinese medicine in treating skin malignant melanoma**

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Malignant melanoma is a tumor produced by melanocytes in the skin and other organs. It is characterized by thickened and gradually enlarged nodule, usually surrounded by red flush. The malignant degree and death rate of the tumor is high, and metastasis occurs early. Therefore, early diagnosis and timely, rational treatment are particularly crucial. Recently, western medicine treatment as surgery, radiotherapy and chemotherapy can achieve quick effect. However, the patient is painful and the tumor prone to relapse. Under the guidance of TCM (traditional Chinese medicine) theory, using TCM internal medicine, external treatment, or comprehensive treatment could generally achieve better curative effect and reduce the possibility of recurrence.

CS04-2-7

**Application of surgery combined with photodynamic therapy in intractable skin tumors**

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**Background** The incidence of skin tumors is rising rapidly. Refractory skin tumors, such as VIN, cutaneous angiosarcoma, abalone, proliferative erythema, proliferative abalone, extensive abalone and so on cannot be cured simply by surgery considering the special location and extensive infiltration. It is necessary to combine chemotherapy and radiotherapy, and for some intractable skin tumors, we took surgical and photodynamic therapy.

**Methods** Some cases were treated with surgical removal of partial skin lesions combined with photodynamic therapy. Some cases took photodynamic therapy to reduce the skin lesions, and then clear the boundary, then complete resection of the combined operation; some cases were cut to the reticular layer of corium, and the electrocoagulation was fully hemostasis after hemostasis. According to the area of skin lesion, 20% ALA was prepared with special gel, external application on skin lesion, 635 nm semiconductor laser irradiation after avoiding light 4h, the output power of 100 mW/cm<sup>2</sup>, irradiation energy of 50-60 J/cm<sup>2</sup>. once a week, all patients were treated with 3 ALA-PDT treatments. Skin mirror (once a month) combined with pathology (follow up after June biopsy + pathology) to determine the curative effect. No tumor cell were recovered, and residual or aggravated tumor cells were invalid. Efficiency = the number of healed cases / the total number of cases × 100%. After treatment, the patients were followed up for 1 time a month for a total of 6 months. There was no adverse reaction in each detail.

**Results** A total of 18 patients were followed up, including 12 cases of VIN and three cases of abalone fever. After 3 and above operation combined with photodynamic therapy, all the patients were cured. Some patients had burning sensation locally, and slight and moderate redness appeared after irradiation. A few patients had slight pain and slight exudation. The wound healing time was slightly longer in some patients.

**Conclusions** Photodynamic is now being tried to apply to various refractory skin diseases. Surgery combined with photodynamic therapy can be used in some refractory skin tumors and might achieve unexpected results. It is worth further expanding the sample and developing multi-center clinical research.

CS04-2-8

**DNA damage-inducible transcript 4 is an innate guardian for human squamous cell carcinoma and an molecular vector for anti-carcinoma effect of 1,25(OH)2D3**

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**Background** Cutaneous squamous cell carcinoma (SCC) is one of the most common non-melanoma skin cancers worldwide. While its exact tumorigenesis mechanisms is far from well-established and less satisfied therapeutic strategy can be clinically used nowadays. In this study we intended to investigate the role of DNA damage-inducible transcript 4 (DDIT4) in human SCC.

**Methods** Human SCC tissue and cultured A431 cell line were used to identify DDIT4 expression and how it affect the downstream mTORC1 pathway on both cell proliferation and autophagy. Xenograft tumor-bearing mice model treated by gradient concentrations of 1,25(OH)2D3 was designed to reveal the anti-carcinoma effect of 1,25(OH)2D3 and DDIT4 action on mTORC1. Lastly, DDIT4 expression was also investigated in human actinic keratoses tissue and chronic long-term ultraviolet (UV) irradiation on mouse to disclose UV could promote DDIT4 expression inside epidermis.

**Results** DDIT4 was significantly suppressed in human SCC tissue and cultured A431 cell line, and reduced DDIT4 accelerates keratinocytes proliferation but impeded the autophagy flux through mTORC1 pathway by affecting the downstream S6 Kinase1, 4E-BP1, Beclin1 and LC3 II/I. While 1,25(OH)2D3 enhanced DDIT4 expression and activated autophagy and inhibited mTORC1 to take the effect of anti-proliferation and activating autophagy. ChIP-qPCR showed 1,25(OH)2D3 promotes DDIT4 transcription. In xenograft tumor-bearing mice model, 1,25(OH)2D3 exerted an obvious anti-carcinoma effect of 1,25(OH)2D3 and DDIT4 acted the molecular vector of 1,25(OH)2D3 through mTORC1. Elevated DDIT4 expression was verified in human actinic keratoses tissue, and chronic long-term ultraviolet (UV) irradiation on mouse disclosed UV could promote DDIT4 expression inside epidermis.

**Conclusions** The present research suggests a novel molecular mechanism about the human SCC tumorigenesis and the pharmacological mechanism about how 1,25(OH)2D3 takes its anti-carcinoma role on human SCC, as well as a striking paradoxes that how UV irradiation plays the tumorigenesis effect but synchronously takes a protective role in the early stage of SCC carcinogenesis.

CS04-2-9

**Cutaneous T cell lymphomas from Shanghai: clinicopathological correlation**

Ye-Qiang Liu

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Primary cutaneous T cell lymphomas (CTCL) represent the majority of cutaneous lymphoma (CLs) and are a spectrum of diseases with a wide variety of clinical, histological, and phenotypic features and diverse biologic behavior. We retrospectively reviewed the clinical and pathologic findings of ten cases of cutaneous T cell lymphomas of our department diagnosed from January 2014 to Decemer 2017. The final diagnosis was made according to the 2016 WHO classification update. Our series consisted of Extranodal NK/T, Lymphomatoid papulosis, Anaplastic large cell lymphoma, Mycosis fungoides, Blastic Pkasmacytoid Dendritic cell Neoplasm, Hydroa vacciniforme-like lymphocyte proliferation. The review focus on the CTCL Clinicopathological correlation and histological diagnosis clue and histological pattern.

CS04-2-10

**Clinical and pathological analysis of cutaneous Rosai-Dorfman disease**

Ying zhang, Hao Chen, Wei Zhang, Xiu-Lian Xu, Yi-Qun Jiang, Xue-Si Zeng, Jian-Fang Sun

*Institute of Dermatology, Chinese Academy of Medical Sciences and Peking Union Medical College***Background** To investigate the diagnosis and differential diagnosis of microcystic adnexal carcinoma (MAC).**Methods** Totally, ten patients with MAC visiting the Institute of Dermatology, Chinese Academy of Medical Sciences from 2003 to 2017 were enrolled. The clinical manifestations, histopathological and immunohistochemical features, treatment and prognosis of MAC were retrospectively reviewed.**Results** The average age at onset of MAC was ( $51.65 \pm 10.23$ ) years in the ten patients, with a mean disease duration of 5 years. The lesions all occurred on the face, and six cases located at the nasolabial regions. The lesions typically presented as solitary plaque or nodule in all cases, and arisen ulcer in four cases. Histologically, it was characterized by consisting of epithelial nests or cords, keratinous cysts and tubular structures and enveloped by desmoplastic stroma, and six cases showed perineural invasion, mitotic figures and cytologic atypia were rare. Immunohistochemical staining showed epithelial and keratinous cysts were positive for cytokeratin (CK), and tubular structures positive for carcinoembryonic antigen (CEA) and epithelial membrane antigen (EMA). One of the patients was recurrent at the primary site 13 years after resection of skin lesion, and no distant metastasis or death occurred in these patients.**Conclusions** MAC is rare and easily misdiagnosed, and can be confirmed based on histopathological and immunohistochemical findings. Local recurrence of MAC is common, but lymphatic and distant metastases are rare.*CS05 Bullous Diseases& Metabolic and Endocrine Disorders*

CS05-1

**Interaction between subcutaneous fatty tissue and hair follicles: hair growth-promoting effects of adiponectin**

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*Department of Dermatology, Institute of Human-Environment Interface Biology, Seoul National University College of Medicine, Seoul, Korea***Background** Adipose tissue (AT) is no longer considered just an inert energy storage organ but is also known to be involved in active regulation of physiological and pathological processes. AT produces and releases a variety of factors called adipokines, including the well-known adiponectin. The aim of this study was to evaluate the effect of adiponectin on human hair follicles (HFs) *in vitro*.**Methods** Human anagen HFs were isolated and cultured, and then treated with adiponectin.**Results** The proliferation of dermal papilla (DP) cells increased with adiponectin treatment. In addition, *in vivo* organ culture, dose-dependent hair shaft elongation was observed in the presence of adiponectin. Moreover, we noted that adiponectin treatment significantly increased the expression of IGF-1, HGF, and VEGF mRNAs in DP cells. Furthermore, adiponectin-induced proliferation of follicular DP cells (DPCs) was significantly reduced by treatment with *VEGF* and *IGF-1* siRNAs.**Conclusion** These *in vitro* results indicate that human HF is a direct target of adiponectin and that adiponectin might stimulate hair growth by increasing the secretion of IGF-1, HGF and VEGF from DPCs.

## CS05-2

**Application of topical treatments in pemphigus patients and its underlying mechanisms**

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Pemphigus is a skin and mucosal membrane-targeting autoimmune bullous disease, which is generally believed to be caused by circulating auto-antibodies and always treated by systemic corticoid and immunosuppressant. However, in our clinic we found that some patients could be cured by topical treatment and this phenomenon leads to our interest for investigating the local immune response from the lesions of pemphigus vulgaris (PV). Histologically, the T/B lymphocytes were contacted intimately, as well as the plasma cells. By flow cytometry and ELISPOT analysis, the percentages of CD19<sup>+</sup>IgG<sup>+</sup> B cells, Dsg1, Dsg3 specific B cells and Dsg1, Dsg3 specific antibody secreting cells were elevated in the lesions. CD3<sup>+</sup> T cells was also increased and the majority of T lymphocytes infiltrated were CD4<sup>+</sup> T helper cells, which produced IL-21 and IL-17a, but were not typical T follicular helper cells (Tfh) that express Bcl-6 and CXCR5. We further cultured total lymphocytes *in vitro* for 6 days, specific anti-Dsg1/Dsg3 antibodies could be detected from the supernatant. To check the gene profile from the local lesions, we extracted RNA from infiltrating lymphocytes of PV for the microarray analysis. The results showed several genes, such as CCL19, CCL21 and CXCL13, were up-regulated which were confirmed by Real-time PCR. These cytokines were lymphoid tissue formation related cytokines. To be concluded, antigen specific cells accumulation, specific antibodies production, and gene expression of cytokines involved in lymphoid structure indicate that the local immune cells could be involved in the lesion formation and the tertiary lymphoid tissue might be formed in PV lesions.

## CS05-3

**Risk factors of relapse in patients with pemphigus herpetiformis: a retrospective cohort study**

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**Background** Pemphigus Herpetiformis (PH) is a rare autoimmune blistering disease. Due to its rarity, no cohort studies have been done to discover its prognosis. This study aimed to investigate the clinical characteristics and the risk factors of relapse in Pemphigus Herpetiformis patients retrospectively.

**Methods** We reviewed the medical records of 25 patients who were diagnosed as Pemphigus Herpetiformis in Peking Union Medical College Hospital and kept follow-up from 1984 to 2018. The data of demographic characteristics, clinical and laboratory features, treatments and prognosis were collected and analyzed. Five-year relapse rate was calculated among all patients. Survival and risk analyses of relapse were performed.

**Results** No patient died from PH or its complications during follow-up. The five-year relapse rate is 28% (7/25). The major risk factors for five-year relapse were duration lasting more than 5 months before effective treatment ( $P=0.048$ ), no eosinophil infiltration in pathology ( $P=0.025$ ), and more than 40mg/day of prednisone treatment ( $P=0.020$ ). Five-year survival curve of relapse was prominently higher in patients more than 60 years old and patients that hospitalized for more than 5 days.

**Conclusions** Lack of timing treatment, lack of eosinophils in pathology, and high dose of prednisone requirement predict higher relapse possibility. Patient more than 60 years old and being hospitalized for more than 5 days might also be related to relapse.

## CS05-4

**Indirect immunofluorescence on salt-split skin as a first choice in bullous pemphigoid diagnosis**

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**Background** A significant obstacle in diagnosis of bullous pemphigoid (BP) is lacking of fixed diagnostic criteria. Professor Marcel F Jonkman has put forward minimal diagnostic criteria for diagnosis of BP which highlights the importance of immunofluorescence. The aim of this study was to evaluate diagnostic value of indirect immunofluorescence on salt split skin (IIF-SSS) in BP.

**Methods** Serum samples were collected from 176 BP patients and 129 controls, who were enrolled from Institute of Dermatology of Chinese Academy of Medical Sciences between January 2015 and January 2018, and assayed by IIF-SSS.

**Results** Direct immunofluorescence (DIF) test was performed in 25 cases of BP, and its sensitivity for the diagnosis of BP was compared with that of IIF-SSS. Our data shows the sensitivity of IIF-SSS was 93.75% with excellent specificity of 100%, and there was no significant difference of sensitivity between IIF-SSS and DIF.

**Conclusion** These results indicate that IIF-SSS might be as a first choice for BP diagnosis.

## CS05-5

**Identification of immunodominant Th2 cell epitopes in Chinese bullous pemphigoid patients**

Jie-Yu Zhang

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**Background** Bullous pemphigoid (BP) is a cutaneous autoimmune inflammatory disease characterized by autoantibodies directed against BPAG2. The pathogenesis of BP has not been elucidated completely, further researches are needed to understand the pathogenesis of BP. The purpose of this study was to identify the T cell epitope of BPAG2 and to understand the course of humoral immune response in BP.

**Methods** We used an IL-4 ELISPOT assay to determine Th2-cell epitopes in the BP180-NC16A. To further determine the immunological effects of the candidate epitope peptides, we used flow cytometry to investigate the ability of candidate epitope peptides to stimulate BP patient's T cell proliferation, and ELISA assay to determine whether T cell epitope could induce B cells activation.

**Results** ELISPOT assay revealed that IL-4 responses were significantly stronger for three peptides, P18 and P21. To correct for individual patient variation, SFC values were normalized to the total number of spots, these two peptides were strong positivity compared with other peptides. Thus, we identified P18 (492-506aa) and P21 (501-515aa) as candidate Th2-cell epitopes for BP. Flow cytometry analysis showed that those three epitopes were able to stimulate BP patient's T proliferation. ELISA analysis the levels of sCD23 in PBMCs of BP patients culture supernatant showed that after stimulating by those three epitopes, patients' B cells were activated.

**Conclusions** Our research identified three Th2 cell epitopes, those epitopes have the ability to stimulate BP patients' T cells proliferation and B cells activation pathogenic autoantibodies production. This results might contribute to the understanding the pathogenesis of BP, providing new ideas and the scientific evidences about the treatment of BP.

## CS05-6

**Azathioprine induced myelosuppression in two pemphigus vulgaris patients with homozygous polymorphism of NUDT15**

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**Background** In pemphigus vulgaris (PV), association between azathioprine (AZA)-induced leukopenia and single nucleotide polymorphisms (SNPs) are well established, including well-studied TPMT and recently reported NUDT15 in Asian population. However, homozygosity of NUDT15 polymorphism in PV patient has not been reported. We aimed to study the clinical manifestation, disease progression and managements of AZA toxicity in patients with homozygous NUDT15 polymorphism.

**Methods** Diagnosis of PV was made through assessment of clinical examination, histological, immunopathological (DIF), and serological findings (IIF and ELISA). We performed Sanger sequencing of several candidate genes, including *NUDT15* and *TPMT*.

**Results** Homozygous *NUDT15* polymorphism n.595C>T (rs116855232) was identified in both PV patients, leading to AZA toxicity of myelosuppression and severe secondary infection. No variant was observed in *TPMT* (*TPMT*\*1/\*3). *NUDT15* polymorphism predisposes patients for AZA-induced pancytopenia in Asian population. Compared with previous reported heterozygosity PV cases, severity of AZA-associated adverse reactions among patients with homozygosity was more prominent.

**Conclusion** In order to reduce the risk of AZA-induced toxicity, *NUDT15* genotyping and more frequent complete blood count monitoring will be beneficial to patients who receive AZA.

## CS05-7

**Diabetic ulcer and Acquired perforating dermatosis associated with diabetes: a case report**

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Diabetes mellitus is one of the most common diseases in China. The hyperglycemic state of diabetes mellitus leads to variant skin changes. Ulceration of the leg and foot may be due to vascular and/or neurological damage. There is both structural impairment of cutaneous blood flow due to vascular damage and functional impairment, probably resulting predominantly from autonomic neuropathy. In addition, acquired perforating dermatosis is secondary form of perforating dermatoses which mainly affects adult patients with chronic renal failure and diabetes mellitus. Acquired perforating dermatosis is characterized by trans-epidermal elimination of degenerate collagen, elastin and other connective tissue components. Here, we report a case of both diabetic ulcer and acquired perforating dermatosis associated with diabetes in one individual. The patient was a 65-year-old woman, presented with ulcers with itching and pain on both lower extremities for 8 months. Itching papules were firstly found, and papules became ulcers which wouldn't heal after scratching. Diabetes was the only past history and the glycemic control was poor. We made the diagnosis of both diseases according to clinical manifestations and pathology.

## CS05-8

**Effort of thalidomide on OSMR-related pathway in keratinocyte**

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**Background** The pathogenic gene of familial primary amyloidosis (FPCA) is located in the *OSMR* gene. Whether the *OSMR* gene can affect the pathogenesis of amyloidosis in the skin by up-regulation of the expression of TC-PTP. Whether thalidomide affects the occurrence of amyloidosis in the skin by acting on the Stat3 pathway is the focus of this experiment.

**Methods** Cell line selection for human keratinocyte cell line (HaCaT) was got, the effect of siOSMR on cell proliferation before and after the use of thalidomide was tested by MTS detection. The effect of siOSMR on cell apoptosis before and after the use of thalidomide was made by flow cytometry. Using lentivirus transfection technique to establish *OSMR* gene knockout cell line. The effect of thalidomide on the expression of Stat1, 3, 5 and Akt pathway proteins was tested by Western blotting.

**Results** *OSMR* gene knockout could significantly inhibit cell proliferation, and the difference was statistically significant ( $P < 0.001$ ). *OSMR* gene knockout could increase the apoptosis of keratinocytes and repeated three experiments, and the difference was statistically significant ( $P < 0.05$ ). Thalidomide could increase the proliferation ability of *OSMR* gene knockout keratinocytes, and the difference was statistically significant ( $P < 0.05$ ). Thalidomide decreased the apoptosis of *OSMR* gene knockout keratinocytes and repeated three experiments, and the difference was statistically significant ( $P < 0.05$ ). The expression of P-Stat3 in *OSMR* gene knockout keratinocytes decreased, and the expression of P-Stat3 increased after thalidomide added. *OSMR* knockout had no significant effect on the expression of Stat3. The full protein quantitative proteome of *OSMR* knockout stable cell line showed that *OSMR* knockout could lead to many differential protein expression, of which the up-regulated TC-PCP expression was the most significant. The expression of P-Stat3 in *PTPN2* knockout keratinocytes increased significantly, and the expression of P-Stat3 decreased after adding thalidomide.

**Conclusions** *OSMR* gene knockout reduces the proliferation of keratinocytes and increases the level of apoptosis. Thalidomide increases the proliferation ability of *OSMR* gene deficient keratinocytes, reduces the level of apoptosis and increases the expression of P-Stat3. *OSMR* gene up-regulates the expression of TC-PTP in the keratinocyte and acts on the Stat3 pathway. Thalidomide might act on the Stat3 pathway, and exerts an influence on the expression of *OSMR* related pathway proteins and affects the biological functions of cells through the action of TC-PTP or its upstream molecules.

## CS05-9

**A case of disseminated cutaneous tophus**

Jian-Xin Xia

*Jilin University Second Hospital*

A 40-year-old man presented with multiple nodes on the scalp, trunk and limbs for more than 3 months. There were irregular, tender, indurated, yellow-papules and nodules on scalp, lower elbow, abdomen, medial thigh and ankle, along with unclear boundary and poor mobility. Histopathology revealed deposition of homogeneous amorphous substance throughout dermis and subcutaneous fat layer along with focal crystalline, scarce inflammation and basically normal epidermis. According to the above findings, the patient was diagnosed as gout nodules of disseminated cutaneous tophus.

CS05-10

**Acquired reactive perforating collagenosis: one case report and review of the literature**

Jun-Feng Yu

*The Fifth Affiliated Hospital of Xinjiang Medical University*

Acquired reactive perforating collagenosis (ARPC) is commonly recognized as an unusual skin reaction to superficial trauma that is observed in patients with a certain genetic predisposition or underlying diseases, such as diabetes mellitus or renal diseases. We presented the unusual case of a 56-year-old woman diabetic type 2 patient with numerous characteristic dome-shaped nodules, which consisted of superficial erosion or central depression with adherent keratotic plugs. Histopathology detection showed a central ulceration with an overlying serum crust, transepidermal elimination of basophilic collagen bundles, and some collagen fibers in the upper dermis, and some lymphocytic infiltration.

*CS06 Collagen Diseases and Vasculitis & Photodermatoses*

CS06-1

**B lymphocyte abnormalities in scleroderma**

Shinichi Sato

*Department of Dermatology, Graduate School of Medicine and Faculty of Medicine, The University of Tokyo, Tokyo, Japan*

Systemic sclerosis (SSc) is a connective tissue disease characterized by excessive extracellular matrix deposition in the skin and visceral organs. SSc is associated with immune activation characterized by autoantibody production, lymphocyte activation, and release of various cytokines. The presence of autoantibodies is a central feature of immune activation in SSc. The importance of B lymphocytes in immune response and autoimmunity has been recognized over the past 20 years. B cells function as not only antibody production, but also T cell activation and differentiation, and various cytokine productions. Thus, B cells have more functions in regulating immune responses than had previously been appreciated. Exaggeration of any of these B cell activities could contribute to the development of autoimmune diseases. Indeed, B cell-targeted therapy has been effective for various collagen diseases, including rheumatoid arthritis and systemic lupus erythematosus. Distinct B cell abnormalities including overexpression of CD19, a critical signal transduction of B cells, and chronic activation of memory B cells have been detected in SSc patients. Recently, we have shown that B cell depletion therapy by rituximab is effective for vascular injury as well as skin and lung fibrosis in SSc patients, leading to an investigator-led clinical trial of rituximab in Japan. Thus, B cell-targeted therapy might be the promising treatment of SSc.

CS06-2

**Clinical characteristics, genotype - phenotype correlations and founder effects of xeroderma pigmentosum in Japan**

Shinichi Moriwaki

*Osaka Medical University*

Xeroderma pigmentosum (XP) is one of the incurable rare photosensitive genodermatoses with defective post-UV DNA repair. XP patients are extremely susceptible to UV-induced skin cancers with occasionally neurological abnormalities. Since 1998, we have been performed molecular and cellular diagnosis of XP. For these 20 years, we have analyzed totally 477 referring patients complaining of sun sensitivity, freckles, skin cancer, growth failure and neurological abnormalities and newly confirmed 150 XP cases. In this lecture, current progress in clinical research especially focusing on clinical characteristics, genotype-phenotype correlations and founder effects about XP cases from my 20-year experience related to XP in Japan will be shown.

## CS06-3

**Solar urticaria: clinical characteristics, treatment and prognosis in a series of 28 Japanese patients**

Shinya Imamura, Yoshiko Oda, Ken Washio, Kaori Nakata, Atsushi Fukunaga, Chikako Nishigori

*Division of Dermatology, Department of Internal Related, Kobe University Graduate School of Medicine, Kobe, Japan*

Solar urticaria (SU) is a rare photosensitive disease refractory to H1-antihistamines. In this study, we retrospectively analyzed 28 patients with SU who visited our hospital from April 2003 to April 2016. The mean age at onset was 34.6 years ranging from 4 to 67 years. The action spectrum fell into visible light in 14 patients (50%), from UVA to visible light in 10 patients (20%), from UVB to visible light in two patients (7.1%), from UVB to UVA in one patient (3.6%). Intradermal injection test of autologous serum irradiated with action spectrum was examined in 15 patients and the result was positive for 11 patients (73%). Eleven patients were treated with hardening therapy by irradiating the patients with action spectrum wavelengths. UVA was applied for six patients, visible light to three patients, both UVA and visible light to one patient and natural light to one patient. In all of six patients treated with UVA and one patient treated with natural light hardening therapy were effective. All three patients treated with visible light were not effective. One patient treated with both UVA and visible light was effective only to UVA. The result of subsequent follow-up questionnaires showed seven patients (53.8%) presented with improvement during follow-up; four patients were completely cured (average duration from onset to cure was 3.8 years), three patients could finish hardening therapy although mild symptoms remained (average duration from onset was 11 years), five patients still undergo treatment (average duration from onset was 5.8 years) and one patient was exacerbated (duration from onset was 15 years).

## CS06-4

**Clinicopathological study of eosinophilic fasciitis**

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**Background** Eosinophilic fasciitis (EF) is a rare connective tissue disorder characterized by subacute onset of edema, erythema and induration on extremities or trunk. We performed a retrospective study about EF diagnosed in Gifu University Hospital for the last ten years.

**Methods** This study included ten adult patients (three males and seven females) with a mean age of 55.8 years.

**Results** Eight out of ten patients showed skin induration on four extremities, one showed on the only lower legs and the remaining one on the only forearms. It took an average of 8.5 months until the diagnosis was obtained. Only two patients had peripheral eosinophilia. We determined serum progranulin concentrations in five out of ten patients at the onset. Although they were all elevated, they decreased after the treatment. MRI images showed markedly increased signal intensity within the fascia in six out seven EF patients. Histological findings showed lymphocytic infiltration in the fascia in all ten patients, and eosinophilic infiltration in eight patients. All patients were treated with prednisolone at initial doses of 10 - 80 mg/day, and two patients additionally received steroid pulse therapy. Furthermore, five patients were also given immunosuppressants. The symptoms improved in all patients by 3 - 4 months. However, skin induration and/or the difficulty of joint extending recurred in two patients.

**Conclusions** Limitations of our study include its retrospective design and a small study size. Nevertheless, our observations show that useful markers are necessary for initial diagnosis and for estimating disease activity of EF.

## CS06-5

**Lupus erythematosus tumidus: retrospective study of 29 cases**

Xiao-Lei Liu

*The First Affiliated Hospital of China Medical University*

**Background** This study aimed to describe the clinical and histopathological features of lupus erythematosus tumidus (LET) in patients diagnosed in No. 1 Hospital of China Medical University.

**Methods** We reviewed the data of patients with lupus erythematosus between 2012 and 2017 in our department. Finally, 29 cases were diagnosed as LET. The clinical features, laboratory findings, treatment and responses were analyzed.

**Results** Ratio of male (10) to female (19) patients was 1:1.9. The mean age of presentation was  $45 \pm 12.8$  years (range, 19 to 75 years). The median time between onset of disease and diagnosis was 4.5 months (range, 3 days to 10 years). The lesions located on the face in 18 patients, and on the face as well as trunk or arms in 10 patients, on the arms in one patient. All of them, 19 patients presented with multiple lesions. Only 11 patients had mild itching or mild tenderness. Thirteen patients experienced with arthralgia, dry mouth or hair loss. Six patients reported photosensitivity, 15 patients had no photosensitivity and eight patients were not sure. Among the 26 patients examined for autoantibodies, ANA was positive in 18 patients, and SSA and/or SSB positive in 10 patients. Complements, other autoantibodies, biochemistry tests were normal. Histopathologically, all the 29 patients showed peri-adnexal and perivascular infiltrate of lymphocytes. Alcian staining showed mucin accumulation in the spaces in nine patients between the collagens. Sixteen patients were administered with hydroxychloroquine (HCQ) 300-400 mg/d, as monotherapy in eight patients and combination with thalidomide and/or oral steroid in eight patients. No patients developed involvement of other organs and systems during the follow-up.

**Conclusions** Sun-exposure areas such as face are LET predilection sites. LET occurs primarily in middle aged women. Most LET patients have a benign course. HCQ might be the better choice of systemic treatment.

## CS06-6

**Retrospective case-control study on dermatomyositis with interstitial lung disease in KMC**

Dan-Qi Deng

*The Second Affiliated Hospital of Kunming Medical University*

**Background** A retrospective case-control study was conducted by investigating the differences of clinical characteristic between in-patients of dermatomyositis (DM) with and without interstitial lung disease (ILD) during the 14-year-duration in order to deepen the understanding of ILD associated with DM, and improve the diagnostic and therapeutic quality.

**Methods** Medical records of patients hospitalized for DM in the 2nd Affiliated Hospital of Kunming Medical University from January 2002 to December 2016 were reviewed. Cases were divided into two groups by with ILD or not. General information, first-onset symptom, main symptom and sign, main laboratory and autoantibodies tests result, imaging data, skin and muscle biopsy result, bacterial/fungal infections characteristics, treatment plans were collected. The single-factor differences between the two groups were compared by statistical methods such as *t*-test, Mann-Whitney U test and chi-square test and Logistic regression analysis.

**Results** A total of 107 cases were enrolled in the study, of which 80 females (74.8%) and 27 males (25.5%) with a female to male ratio of 2.96:1. While 66 cases (61.7%) were non-ILD and 41 cases (38.3%) were with ILD. The average onset age of ILD group was  $49.83 \pm 11.45$ , which was higher than the non-ILD group of  $41.85 \pm 18.52$  ( $P < 0.05$ ). The incidence of bacterial/fungal infection rate in ILD group was 75.6% and the concurrent infection rate was 39%, which was significantly higher than the non-ILD group, whose number was 24.2% and 6.1% ( $P < 0.05$ ). 62.1% patients in non-ILD group were prescribed glucocorticoid (GC) alone, 31.8% patients were prescribed GC combined with immunosuppressants, while only 41.5% patients in ILD group were prescribed GC only, 56.1% patients were prescribed GC combined with immunosuppressants. Male patients ( $OR = 9.01$ , 95%  $CI$ : 1.652-49.143), elevated ESR levels ( $OR = 1.048$ , 95%  $CI$ : 1.008-1.090) and serum ferritin levels ( $OR = 1.007$ , 95%  $CI$ : 1.001-1.014) were risk

factors of DM-ILD.

**Conclusions** The ILD group patients seemed to have a higher onset-age. However, regression analysis failed to prove that the higher onset age was a risk factor of ILD. The severity rate of ILD group patients was higher than non-ILD group patients, and required antimicrobial therapy more often because of bacterial/fungal infection. The elevated ESR and serum ferritin were risk factors of DM-ILD. Male patient was also a risk factor of DM-ILD, the probability of ILD in male patients was 9.01 times over female patients.

CS06-7

### **Clinical research of combined leukotrienes receptor antagonist and total glucosides of paeony for treating henoch-schönleinpuroura with kidney damage**

Yi-Ming Wang

*Chengdu Second People Hospital*

**Background** To evaluate the safety and efficacy of combined leukotrienes receptor antagonist and Total Glucosides of Paeony for treating Henoch-SchönleinPuroura with Kidney Damage.

**Methods** 100 cases of Henoch-SchönleinPuroura were randomly divided into two groups, experimental group 50 cases, control group 50 cases. All cases adopt regular treatment, and the experimental group applied Montelukast and Total Glucosides of Paeony.

**Results** The total effective rate of the experimental group was better than that of the control group ( $P > 0.05$ ). There was significant difference in the serum LTB<sub>4</sub>, serumβ<sub>2</sub>-MG, urine mAlb and urine β<sub>2</sub>-MG between the two groups before and after treatment ( $P < 0.01$ ).

**Conclusions** Leukotrienes receptor antagonist combined Total Glucosides of Paeony have significant therapeutic effect, can effectively reduce kidney damage, reduce the incidence of nephritis, fast relieve symptoms, effectively shorten the course.

CS06-8

### **Osler's nodes in systemic lupus erythematosus: a case report**

Qing-Rong Ni

*Fourth Military Medical University Xijing Dermatology Hospital*

A 30-year-old man presented erythema on his face and both hands of 20 days' duration, and had developed over the previous 4 days. A 1-month history of fever was also presented, and with maximal temperature of 42°C. There was no associated joint pain. He had tried acetaminophen and then developed palpable, itching red patches on face and both hands 5 days later. On skin examination, constant painful erythematous patches covered with small, raised purplish nodules, which was compatible with Osler's nodes, over his face, neck, and both palms. The patients' trunk was also involved with diffusely, small papules. The remaining physical examination was unremarkable. Histological findings from biopsy on Osler's nodes in lesion showed necrotizing vasculitis of the dermal glomus, resulting in minute septic emboli. Endothelial swelling and perivascular infiltrated with inflammatory cells were also found, confirming the pathology of Osler's nodes. Microbiologic studies of the pustules were unrevealing. Laboratory studies showed positive serology of antinuclear antibody, anti-Smith, anti-SSA (highly positive), and anti-SSB (highly positive) antibodies. In direct immunofluorescence assay, there was IgM linear deposition in basement membrane. This patient fulfilled 8/11 criteria for the diagnosis of SLE, which included malar rash, photosensitivity, serositis, hematologic disorder, renal disorder, neurologic disorder, immunologic disorder and positive ANA. Osler's nodes support a diagnosis of infective endocarditis strongly, but may also be responsible for fever in SLE patients. SLE can present in a complex fashion, and cutaneous lesions, representing small-vessel involvement, are common. The possibility of SLE presenting in Osler's nodes thus should be considered. Our case is not supportive for infective endocarditis.

## CS06-9

**Dermatomyositis with secondary probable Evans syndrome in a 15-year-old girl: a case report**

Jian-Kang Yang

*Department of Dermatology, Xijing Hospital, Fourth Military Medical University*

Dermatomyositis is a chronic autoimmune disease affecting primarily the skeletal muscle and the skin. Evans syndrome is an autoimmune disease in which an individual's antibodies attack one's own erythrocytes and platelets. It has been found to be associated with collagen vascular diseases, especially systemic lupus erythematosus (SLE) and scleroderma. However, Evans syndrome with dermatomyositis is very rare. We report the case of a 15-year-old girl who presented with an erythematous rash, proximal muscle weakness and epistaxis. The only findings of note in the laboratory workup were increased creatine phosphokinase, 10695 IU/L. The platelet and hemoglobin levels decreased to  $27 \times 10^9/L$  and 69 g/L, respectively. Her blood film showed features of hemolytic anemia. Bone marrow examination showed mild hyperplasia of erythroid precursors. The patient was successfully treated with methylprednisolon in addition to methotrexate. Evans syndrome is characterized by the simultaneous or sequential occurrence of Coombs-positive hemolytic anemia and immune thrombocytopenia without an underlying origin. It may develop gradually and show a benign clinical course in most patients. Therefore, we suggest that patients with dermatomyositis, anemia and thrombopenia should always be checked for hemolysis if there is no other explanation. As the patient was receiving treatment with corticosteroids, it was impossible to perform the Coombs test to confirm this associated autoimmune etiology. Evans syndrome is a rare complication in DM, patients with DM and anemia should be evaluated for hemolysis.

## CS06-10

**Effect of AGEs on cathepsin K expression in UVA-irradiated dermal fibroblasts**

Jian-Kang Yang

*The Third Affiliated Hospital of Sun Yat-sen University*

**Background** Cathepsin K (CatK), a cysteine protease with the potent elastolytic activity, plays a predominant role in intracellular elastin degradation in human dermal fibroblasts (HDFs), and contributes to solar elastosis. Our previous studies have shown that cathepsin K (CatK) expression in human dermal fibroblasts (HDFs) is upregulated by acute UVA irradiation and downregulated by chronic UVA treatment. Yet its mechanism remains unclear. Recently, advanced glycation end products (AGEs) are found to accumulate in photoaged skin, and affect matrix metalloproteases' expression. Whether CatK expression is also mediated by AGEs in UVA-exposed fibroblasts is unknown. In this study, we aimed to investigate whether AGEs can affect the expression of CatK in UVA-irradiated human dermal fibroblasts.

**Methods** HDFs were first exposed to different dosages (10, 20, and 30 J/cm<sup>2</sup>) of UVA, and harvested 24h after irradiation. Then, fibroblasts were incubated with various concentration (200, 400 and 800 µg/ml) AGE-BSA for 24h. Finally, cells were co-treated with 20 J/cm<sup>2</sup> UVA and 400 µg/ml AGE-BSA. Western blot and qRT-PCR were performed to detect the expression of Catk.

Results mRNA and protein expression of CatK were significantly increased by either UVA irradiation or AGE-BSA treatments both in a dose-dependent manner. By contrast, combined treatment of UVA and AGE-BSA dramatically decreased CatK expression compared with UVA-exposed or AGE-BSA-incubated cells.

**Conclusion** AGEs, as a photosensitizer, could increase CatK expression in human dermal fibroblasts not receiving UVA irradiation, but inhibit its increase in UVA-exposed human dermal fibroblasts.

## CS07 Cosmetic Dermatology

### CS07-1

#### Laser treatment in scar management

Sang Ju Lee

*Yonsei Star Skin & Laser Clinic*

Scars are caused by the formation of new connective tissues that fill defects in the dermis and deep tissue by disease or damage, and are part of the normal healing process. Scars are caused by trauma such as burns and accidents, infectious diseases, acne, and surgery. Scars are also distinguished by outline, tension, color, texture, type, direction, size, and degree of harmony with surrounding skin. Most commonly used scars in dermatology include hypertrophic scars, keloid scars, atrophic scars, and prescar. Laparoscopic procedures have been developed and popularized in recent years, although laparotomy has been widely used. Recently, robotic surgery has replaced laparoscopic surgery. This is because not only the patients but also the medical staffs prefer the non-invasive procedure, which are less troublesome in everyday life and have a quick recovery and return to social life. These changes are also occurring in scar treatment. Several years ago, scar surgery was the most common method of scar treatment, and vascular laser, cryotherapy, and intralesional injections have been used adjunctively. Recently, various laser treatments have been developed and attempted, and laser scar treatment has been pioneering the field as a field of scar treatment. In addition, therapies that improve the appearance of the scar are being developed continuously as patients consider the scar not as a functional aspect but as an aesthetic area. The authors would like to present various laser treatments in scar management.

### CS07-2

#### A new whitening agent for the treatment of chloasma

Li He

*The First Affiliated Hospital of Kunming Medical University*

**Background** Melasma is an acquired, masklike, facial hyperpigmentation. While different treatments are currently being used, it is often refractory to treat. The objective was to evaluate the efficacy and safety of a new whitening agent containing Yunnan Camellia in the treatment of melasma.

**Methods** 90 patients with clinically diagnosed melasma were enrolled in this randomized, double-blind, placebo controlled study. They were randomly divided into three groups. Patients were treated with test formula in group A, arbutin cream as control in group B, placebo formula in group C for twice a day. Assessments included the use of mMASI (modified melasma area severity index) score, VISIA, Reflectance confocal microscopy (RCM), Dermoscopy, Mexameter18, LAB together with evaluations of efficacy and safety at T0, T4, T8, T12 weeks.

**Results** The new whitening formula significantly improved melasma after a 3-month-treatment period compared with placebo ( $P < 0.05$ ). No adverse reactions were reported throughout the study period.

**Conclusion** This study demonstrates that the new whitening formula is a safe and strong therapeutic method for treatment of melasma, which is worth of being generalized.

CS07-3

**MicroRNA-224-5p induced claudin-5 deficiency contributed defective permeability barrier in sensitive skin**

Li Yang, Wen-Juan Wu, Le-Chun Lyu, Ying Tu, Hua Gu, Mao-Qiang Man, Li He

*First Affiliated Hospital of Kunming Medical University***Background** The purpose of this study was to explore the role of miR-224-5p in the pathogenesis of sensitive skin.**Methods** RNA-seq analyses were used to identify gene differentially expressed in sensitive skin and normal skin. The results were verified using qRT-PCR and immunofluorescence. Changes in ultrastructure of epidermal intercellular junction in sensitive skin were assessed using electron microscopy. To investigate the impact of CLDN5 deficiency on the skin barrier, CLDN5 was knocked down using small interfering RNA (siRNA) in keratinocytes and organotypic skin model. The link between miR-224-5p and CLDN5 was determined using qRT-PCR, Western Blotting, Luciferase reporter gene assay and rescue test.**Results** We find that in comparison to normal skin, sensitive skin displayed a reduction in CLDN5 expression and elevation in miR-224-5p expression. Electron microscopy revealed that the intercellular junction was disrupted. Downregulation of CLDN5 in keratinocytes caused an increase of paracellular permeability. MicroRNA-224-5p directly interacts with the 3'UTR of CLDN5 in keratinocytes.**Conclusion** Our study shows that miR-224-5p leads to claudin-5 deficiency by targeting CLDN5 impairs diffusion barrier function, which may be a potential therapeutic target of sensitive skin.

CS07-4

**Seasonal variation of skin photoreaction and biophysical properties**

Chao Yuan, Yi-Yi Zhang, Li Ma

*Shanghai Dermatology Hospital***Background** Skin conditions are affected by external environment and may exhibit various biophysical changes. The purpose of this study is to explore the seasonal variations of minimal erythema dose (MED), minimal persistent pigmentation dose (MPPD) and skin biophysical properties through one year, and study the relationship between skin biophysical properties and photoreaction.**Methods** MED and MPPD detection were performed at the forearm of 22 healthy subjects in Shanghai, using the solar ultraviolet simulator. The skin surface biophysical parameters were measured by the Fourier transform infrared spectrometer (FTIR) before photo radiation. The MED and MPPD were evaluated at 6hr and 24hr after exposure respectively. The test procedures were repeated in four seasons in 2014-2015.**Results** The mean MED showed seasonal differences among four seasons, with lowest MED in winter ( $93.24 \pm 11.24$  mJ/cm<sup>2</sup>). The mean MPPD appeared to be highest in summer ( $29.74 \pm 4.55$  J/cm<sup>2</sup>) and lowest in winter ( $19.10 \pm 5.68$  J/cm<sup>2</sup>). The  $\beta$ / $\alpha$  ratio, FFA and sebaceous lipid (sebum) of the skin vary between different seasons. NMF of the skin were not statistically significant between different seasons. The MED or MPPD were negatively correlated with the amount of sebaceous lipid except in summer.**Conclusions** Skin could adapt to the changes of ultraviolet (UV) intensity indifferent seasons. The abilities to resist sunburn and suntan were strongest in summer and weakest in winter. The increment of dosage in UV light therapy should be adjusted according to the season. In different seasons, photo reactivity was enhanced with the increase of sebum.

## CS07-5

**Efficacy and safety of intense pulsed light in the treatment of inflammatory acne vulgaris with a novel filter**

Juan Du, Sun-Yi Chen, Zhong Lu

*Fudan University Affiliated Huashan Hospital*

**Background** Acne vulgaris is one of the most common skin diseases affecting young people. Intense pulsed light (IPL) has become a well-recognized method in the treatment of acne vulgaris. The aim of this study was to evaluate the clinical efficacy and safety of a novel IPL filter at wavelength of 400-600 nm and 800-1200 nm in the treatment of inflammatory acne lesions.

**Methods** Twenty-one patients with Pillsbury I-III facial acne vulgaris between July 2017 and January 2018 were enrolled in this prospective clinical study. Five sessions of IPL treatment were administered to the subjects at 4-week interval. Final assessment was performed one month after the final treatment.

**Results** One month post-treatment, over 75% subjects exhibited excellent or good response. Of the Pillsbury I-II patients, the effective rate reached 88.24%. The inflammatory lesions were dramatically decreased ( $25.23 \pm 2.76$  versus  $14.01 \pm 1.98$ ) and statistically evident ( $P = 0.031$ ). According to Hayashi assessment of acne severity, there was a significant improvement at follow-up visit ( $P = 0.022$ ). Moreover, patients reported significant improvements in self-evaluation.

**Conclusions** The novel IPL filter at wavelength of 400-600 nm and 800-1200 nm provides an effective option to treatment of inflammatory acne lesions, especially for Pillsbury I-II acne patients, with minimal reversible side effects, such as transient post-inflammatory pigmentation (PIH).

## CS07-6

**A novel fractional radio-frequency technology for the treatment of keratosis pilaris: a pilot study**

Yu-Xi Dong

*The First Affiliated Hospital of China Medical University*

**Background** Keratosis pilaris (KP) is a common keratinization disorder. Topical treatments are widely applied with limited effect. More physical therapies are introduced into treatment. The aim of this study was to evaluate the efficacy of fractional radio-frequency (RF) for the treatment of KP.

**Methods** Twelve patients with untreated KP on the upper outer arms and legs were enrolled in a randomized clinical trial. Three sessions of RF treatment were delivered once every month. One arm (or leg) was treated with RF at fluence of 70-85J/cm<sup>2</sup>, 1-cm<sup>2</sup> spot size and one pass, while the contralateral side served as control. Two dermatologists' clinical evaluations and patients' satisfaction were assessed between before treatment (baseline) and 12 weeks after the last treatment.

**Results** Eleven of twelve patients completed the study. Ten patients (90.9%) showed more than grade 2 (>25%) improvement in texture in KP lesions. Five patients (45.45%) showed more than 50% improvement in KP pigmentation and erythema. Eleven of twelve participants were satisfied (>25% of the Patients' self-assessment) with the procedure. No significant adverse effect was observed.

**Conclusion** Fractional radio-frequency technology has been shown safe and effective to improve KP in Chinese patients compared with control after three treatment sessions.

CS07-7

**Mottled hypopigmentation induced by Q-switched 1064 nm Nd: YAG Laser in the treatment of melasma: a two year follow-up study**

Hua-Xu Liu

*Shandong Provincial Dermatology Hospital*

**Background** To investigate the mottled hypopigmentation induced by the low-fluence large-spot-size Q-switched 1064 nm Nd: YAG laser treatment in melasma lesions.

**Methods** We performed a retrospective analysis of those 180 melasma patients who received the Q-switched 1064 nm Nd: YAG laser in 2013-2014 in three laser treatment centers. Each of the patients received at least 5 laser treatments, and those who presented with the mottled hypopigmentation were recorded and followed up for the revolution for 2 years. They were asked to stop the Q switched laser intervention once hypopigmentation occurred.

**Results** 180 melasma patients were enrolled in the study and 15 cases reported mottled hypopigmentation. After 2 years only one case (6.7%) of the hypopigmented lesions were cured, and two cases (13.3%) showed some improvements and 13 cases (86.7%) had no changes during the past two years.

**Conclusions** 8.33% cases will present with hypopigmentation after low fluence large-spot-size Q-switched 1064nm Nd: YAG laser intervention in melasma cases. And the mottled hypopigmentation after laser intervention can last for more than two years, which should be paid special attention.

CS07-8

**Cathepsin D contributes to the accumulation of advanced glycation end products during photoaging**

Qing-Fang Xu, Xin-Ya Xu, Yue Zheng, Yun-Fen Huang, Yu-Ying Li, Chun Lu, Wei Lai

*The Third Affiliated Hospital of Sun Yat-sen University*

**Background** The deposition of advanced glycation end products (AGEs) is accelerated in photoaged skin, but the underlying mechanisms remain elusive. Although lysosomal cathepsin D (CatD), B (CatB), L (CatL) and proteasomes are found to degrade internalized AGEs, it remains unknown which protease degrades internalized AGEs in human dermal fibroblasts (HDFs), and whether a decrease in intracellular degradation contributes to enhanced AGEs deposition in photoaged skin. The aim of this study was to investigate the specific proteases that contribute to intracellular AGEs degradation in HDFs and regulate AGEs accumulation in photoaged skin.

**Methods** Repetitive UVA irradiation was used to induce primary HDF photoaging. Uptake and degradation of AGE-BSA were verified and compared between photoaged and non-photoaged fibroblasts with flow cytometry, ELISA and confocal microscopy. Proteasomal and lysosomal activity, expression of CatD, CatB and CatL were also investigated between photoaged and non-photoaged fibroblasts. Further, the effect of protease inhibitors and CatD overexpression on AGE-BSA degradation was analyzed. The correlation between CatD expression and AGEs accumulation in sun-exposed and sun-protected skin of people from different age was studied with immunohistochemistry.

**Results** Fibroblasts underwent photoaging after repetitive UVA irradiation. AGE-BSA was taken up by both photoaged and non-photoaged fibroblasts, but its degradation was significantly decreased in photoaged cells. Although the activity of proteasome, CatB, CatL and CatD was significantly reduced and the expression of CatB, CatL and CatD was profoundly attenuated in photoaged fibroblasts, inhibiting proteasome, CatB and CatL did not affect AGE-BSA degradation in HDFs. However, inhibiting CatD activity dose-dependently decreased AGE-BSA degradation; CatD overexpression significantly increased AGE-BSA degradation. Importantly, AGEs accumulation in photo-damaged skin was inversely correlated with CatD expression.

**Conclusions** CatD plays a major role in intracellular AGEs degradation. Decreased CatD expression and activity impairs intracellular AGEs degradation in photoaged fibroblasts, which may contribute to accelerated AGEs deposition in photoaged skin. The present study provides a potentially novel molecular basis for antiphotaging therapy.

## CS07-9

**Epidermal barrier function and redox biochemistry are sensitive to exposure to air pollution**

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**Background** Prior studies have associated air pollutant exposure to age spots, wrinkles, skin sensitivity, and other conditions. However, the populations studied often produces many confounding factors. Herein, we report a cross-sectional study focusing on subjects with high natural exposure, aiming to unveil skin phenotype and biomarkers most sensitive to airborne pollutants.

**Methods** This is a single-blind study with 100 urban Shanghai (high pollution) taxi drivers and 66 rural Chongming (low pollution) taxi drivers. Skin hydration, sebum, as well as VISIA-CR image analysis were conducted. TEWL was measured before and after tape-stripping cheek. D-squame tapes were subjected to redox, inflammatory, and barrier biomarkers analyses.

**Results** Surprisingly, subjects with high pollution exposure showed lighter skin tone, less evident facial line wrinkles. There was also no difference in their pigment spot or pores. On the other hand, baseline as well post-insult TEWL were considerably higher in Shanghai subjects, indicating compromised barrier. There was no significant difference between the two groups regarding skin hydration level, which could have resulted from higher level of casual sebum found in Shanghai subjects. High pollutant exposure group demonstrated lower SCTE activity and TAOC, higher catalase activity in tape strips, as well as decreased cholesterol content, reduced vitamin E, and lower squalene oxides level in sebum.

**Conclusion** By highlighting the barrier function and redox biochemistry as more profoundly affected by air pollution exposure, the current study not only introduced a new perspective on air pollution's impact on skin, but also establish endpoint panels suitable for pollution protection.

## CS07-10

**Clinical application of hydroporation transdermal delivery system combined with new IPL technology**

Dan Jian

*Central South University Xiangya Hospital*

**Background** The hydroporation transdermal delivery system (My-jet system, Tav tech, Israel) is an efficient system in epidermal cleaning and transdermal delivery. It can not only work on skin cleaning but also on transdermal delivery of hormone drugs, anti-infective drugs or other therapeutic drugs. It can work on different skin lesions, such as acne, chloasma, rosacea as one of the auxiliary methods before and after treatment; We found that it can shorten the treatment course of patients, improve the clinical effect, especially combined with a new type of IPL(Profile BBL system, Sciton INC. U.S) which can be used as an IPL precondition pretreatment of an effective safe treatment means.

**Methods** In order to discuss the indications, efficacy and safety of the My-jet system, we reviewed almost 100 cases of the laser center of the South Central University at Xiang-Ya hospital in which the My-jet system was used alone or combined with the new intense pulsed light (BBL).

**Results** The transdermal use of My-jet system on metronidazole for controlling early inflammation of acne is quite fast and effective. For chloasma, with the use of My-jet system to deliver tranexamic acid combined with new intense pulsed light (BBL), the clinical result is fast and no case of aggravation. This can also be used as maintenance treatment to reduce the recurrence of Chloasma. It also can be used as an effective preoperative cleaning method for patients with rosacea or hormone-dependent dermatitis with cosmetic residue. In respect of side effects, there are some patients with temporary redness, skin dryness and so on.

**Conclusion** The combination treatment of My-jet hydroporation transdermal technology with new type of IPL(the BBL) can increase the efficacy and safety of related treatment.

## CS08 Dermatitis and Skin Allergy

### CS08-1

#### **Recent Progress in atopic dermatitis**

Norito Katoh

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A few decades ago, the pathogenesis of atopic dermatitis was not clear, and standard treatments based on evidence-based medicine had not been established. We did not reach any agreements about its pathogenesis or the treatments among physicians, because various physicians asserted varieties of pathogenesis and treatments. As a consequence, some patients looked on us with distrust, and we lost our confidence. The progress of research about the pathogenesis of atopic dermatitis in recent years enable us to explain the pathogenesis of atopic dermatitis as hyper-susceptibility of the skin due to reduced epidermal barrier function, both congenital and acquired, consequent epicutaneous sensitization, and allergic inflammation. The progress has made us think logically the strategy for the management of atopic dermatitis. More importantly, we can now explain the significance of treatments logically to patients and their caregivers. In this lecture, I will talk about recent progress in research about pathogenesis, and about conventional treatments recommended in clinical practice guidelines, and then will introduce some state-of-the-art treatments.

### CS08-2

#### **Skin microbiota and the metabolites in atopic dermatitis**

Wei Li

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Atopic dermatitis (AD) is the most common inflammatory skin disease worldwide, affecting up to 30% of children in western countries. Environmental factors contribute greatly to the rapid increase of the prevalence of AD during the past several decades; however, the exact role of the microbiota in AD is not fully understood. Our group has been conducting research on the community structure and function of the microbiota in AD. We found that different body sites, e.g. skin and gut, had differential reduction in microbial diversity, which was distinctly correlated with disease severity. There were hierarchical shifts in the community structure among different habitats. AD patients had site-specific alterations in microbes, which were related with site-specific alterations in the function pathways. Tryptophan (Trp) metabolism pathway was among the most significantly changed pathways in the skin microbiota, and the amount of Trp metabolites were decreased on skin surface of AD patients. Our study revealed the characteristics of the microbiota in different body sites of AD patients, which would contribute to the understanding of the mechanism of AD.

### CS08-3

#### **Drug-induced hypersensitivity syndrome (DIHS) accompanied by rhabdomyolysis**

Yasushi Ototake, Eri Morishita, Maki Sato, Masumi Kono, Kazuko Nakamura, Michiko Aihara, Takeshi Kambara

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A Fifty-year-old man was suffered from epilepsy due to subarachnoid hemorrhage and started to take phenobarbital 2 months before. He was admitted to our hospital because of systemic erythema and high fever. Physical examination also revealed facial edema and swelling of cervical lymph nodes. Blood examination revealed an increase in white blood cells and eosinophils, liver dysfunction and reactivation of human herpesvirus 6. Drug-induced lymphocyte stimulation test and patch testing showed a positive reaction to

phenobarbital. We diagnosed him as drug-induced hypersensitivity syndrome (DIHS) caused by phenobarbital. We started to treat him with systemic corticosteroid. Since his symptoms didn't improve, we added steroid pulse therapy. After the therapy, his symptoms attenuated. However, from the 10th hospital day lassitude and muscle ache was appeared. Blood examination revealed increase in creatine kinase (CK). Since heart disease was denied by laboratory examination and physiological function tests, we diagnosed this increase in CK as rhabdomyolysis. This rhabdomyolysis was improved without further treatment. We gradually reduced the corticosteroid, and at the 36th hospital day he was discharged from the hospital. DIHS was sometimes accompanied by myocarditis. However, DIHS accompanied by rhabdomyolysis was very rare, and there was no literature report. Since DIHS caused by phenobarbital tends to reveal severe symptoms, we should carefully treat these cases.

#### CS08-4

### **Heterozygote deficiency of the keratinocyte proline-rich protein enhances the skin barrier by increasing lysophosphatidic acid receptor expression**

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*Department of Dermatology, Graduate School of Medicine, the University of Tokyo*

The skin barrier plays important roles in various skin inflammatory diseases including atopic dermatitis, contact dermatitis, and psoriasis. Keratinocyte proline-rich protein (KPRP) exists in the granular layer of skin and contributes to the skin barrier. However, the role of KPRP in skin inflammation has not been elucidated. In this study, we examined the role of KPRP on skin inflammation in the imiquimod (IMQ)-induced psoriasis model and trinitro-chlorobenzene (TNCB)-induced contact hypersensitivity (CHS) model using KPRP hetero-knockout (KPRP+/-) and homo-knockout (KPRP-/-) mice. Skin symptoms and inflammatory cytokine expression were similar between KPRP-/- and wild-type (WT) mice in the IMQ-induced psoriasis model and TNCB-induced CHS model. Remarkably, KPRP+/- mice exhibited increased skin thickness compared with KPRP-/- and WT mice in the IMQ-induced psoriasis model, though inflammatory cell infiltrations and cytokine expressions in KPRP+/- mice were decreased relative to KPRP-/- and WT mice. Similarly, in the TNCB-induced CHS model, skin inflammation and inflammatory cytokine expressions decreased in KPRP+/- mice. These results suggest that protective factors against external stimuli may be enhanced in KPRP+/- mice to reduce skin inflammation. Therefore, to investigate protective factors enhanced in KPRP+/- mice, we analyzed by next-generation RNA sequencing using the epidermal tissue. In KPRP+/- mice, it was revealed that expression of lysophosphatidic acid receptor (LPAR) involved in the protection of external stimuli was increased compared with KPRP+/- and WT mice. By contrast, LPAR expression was similar between KPRP-/- and WT mice. Collectively, this study suggests that KPRP+/- mice are resistant to external stimuli by increasing expression of LPAR compensatively.

#### CS08-5

### **Clinical characteristics and genetic variations in atopic dermatitis patients with and without allergic contact dermatitis**

Solam Lee, Hye-young Wang, Eunjung Kim, Hyun Jee Hwang, Eunhee Choi, Hyeyoung Lee, Eung Ho Choi

*Department of Dermatology, Yonsei University Wonju College of Medicine, Wonju, Korea*

**Background** In patients with atopic dermatitis (AD), the risk of contact sensitization may increase because of the disrupted barrier and enhanced penetration of contact allergens. Therefore, it may be beneficial to screen concurrent allergic contact dermatitis (ACD) in AD patients. This study aimed to identify clinical characteristics and genetic variations of AD patients with concurrent ACD.

**Methods** In total, 281 AD subjects who underwent patch testing were included. Subjects with any positive result in patch testing were classified as "AD with ACD", while the others as "AD only". Their clinical characteristics and frequency of genetic variations in FLG 3321delA, FLG K4022X, KLK7, SPINK5, DEFB1, KDR, IL5RA, IL9, and

IL12RB1 were compared.

**Results** Seventy-one subjects (25.3%) were found to be AD with ACD. Female, older age, late-onset, self-reported personal or family history of ACD, and presence of prurigo nodularis were associated with concurrent ACD with AD. Age was useful for predicting concurrent ACD on the receiver operating characteristic curve. However, they showed no differences in the frequency of variations for the genes included in this study.

**Conclusions** No genetic difference was found between subjects with AD only and AD with ACD in this study. A personal or family history of ACD, late onset age and prurigo nodularis can support to suspect concurrent ACD. Moreover, patch testing of AD patients over 20 years old in males and 14 in females may enable concurrent ACD diagnosed with high sensitivity and specificity.

## CS08-6

### **Hyper eosinophilic syndrome associated with type I neurofibromatosis**

Yu-Qing Hu

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A case of hypereosinophilic syndrome (HES) associated with type I neurofibromatosis (NF1) was reported. A 44-year-old female presented with multiple neoplasms for 44 years and pruritic lesions for 4 years. Physical examination revealed multiple, soft, brown neoplasms. And discrete, round or oval, pigmented papules and patches all over the body can be seen. There was also lichenification with scales on double lower limbs. A palpable egg-sized lymph node with slight tenderness was in the axillary region. Laboratory tests showed eosinophilia ( $3.50 \times 10^9/L$ , 10.4%). A skin biopsy taken from the left forearm showed patchy and perivascular dermal infiltration of eosinophils into the lower dermis. Bone marrow biopsy showed the percentage of eosinophils increased (6.5%) and no lymphoma cells were detected. The diagnosis of hypereosinophilic syndrome associated with type I neurofibromatosis was made.

## CS08-7

### **Characterization of the autoimmune subtypes and immunologic features of chronic spontaneous urticaria**

Peng Geng

*Beijing University First Hospital*

**Background** Chronic spontaneous urticaria (CSU) is one of the most common clinical diseases in dermatology. Due to the different immune subtypes and pathogenesis, different patients with CSU need different treatment plans. For example, a study found that patients with autologous serum skin test (ASST) positive are different with negative patients when they response to omalizumab and cyclosporin A. Therefore, the study of autoimmune subtypes and pathogenesis plays an important role in the treatment of chronic spontaneous urticaria.

**Methods** Our research team cloned three receptor chains of FcεRI. However, the experimental results showed that only one of the chains could bind to IgG antibody. Subsequently, we cloned the alpha chain in eukaryotic cells. The correct expression of the receptor was verified by enzyme-linked immunosorbent assay (ELISA). ASST test was carried out in patients with chronic urticaria, the patients' serum was collected and grouped; and then recFcεRI alpha was used to detect the IgG antibody level of anti-FcεRI alpha in the patient's serum.

**Results** The FcεRI alpha receptor chain was cloned and expressed successfully. And through the receptor chain test, the average level of IgG antibody of anti-FcεRI alpha in the ASST positive patients was significantly higher than that of the ASST negative patients; and the antibody levels of the two were higher than that of the healthy controls.

**Conclusions** Our research team explored the IIB autoimmune subtype and pathogenesis in chronic spontaneous urticaria. And we established the typing and diagnosis of IIB autoimmune subtype.

CS08-8

**Patch test in Chinese patients with cosmetic allergy to cosmetic series and products**

Ying Zou

*Shanghai Dermatological Hospital*

**Background** There were increasing cosmetic adverse reactions in China, mostly cosmetic contact dermatitis (CCD), with the development of cosmetics industry. The aim of this study was to identify the allergens and products of cosmetics which responsible for CCD in China.

**Methods** Totally 569 subjects, including 342 CCD patients from dermatological clinic and 218 cosmetics consumers with allergic history, were patch-tested with a cosmetic series (C-1000 series including 56 allergens, Chemotechnique Diagnostics). And 154 patients patched with possible culprit cosmetics (total 653 products). Allergens were applied to the upper back using IQ Chambers for 48 hours, and the results were recorded at Day 3 to Day 5 according to ICDRG standard scoring system.

**Results** Two hundred and forty-six (43.93%) subjects showed positive reaction during patch testing. Clinic Patients with CCD were indicated much higher positive rate (59.94%, 205/342) than that of cosmetics consumers with allergic history (18.81%, 41/218). The leading allergens were methylisothiazolinone (18.39%), methylisothiazolinone + methylchloro-isothiazolinone (MCI/MI, 16.79%), thimerosal (6.79%), and the positive rates were significantly higher in patients (29.82%, 25.73% and 8.77%, respectively) than in cosmetic consumers (0.46%, 2.75% and 3.27%, respectively). MCI/MI elicited positive patch test reactions in 73.53% (75/102) of MI-positive patients. Of these patched with cosmetic products, 19 patients (12.34%) revealed totally 31 positive reactions, including 22 skin care products (70.97%), 5 color decorating (16.13%) etc.

**Conclusions** Preservative, especially methylisothiazolinone, MCI/MI, and thimerosal were the most common cosmetic allergens, and skin care products occupied the most allergic reaction of CCD in China. Clinical diagnosis was highly recommended for suspicious CCD patients. Future comparative investigation with large sample size should benefit the cosmetovigilance and market surveillance.

CS08-9

**Differentiation and polarization of T cells stimulated by TGM3**

Hui-Chun Su

*First Affiliated Hospital of Fujian Medical University*

**Background** To explore the differentiation and polarization of T cells stimulated by TGM3.

**Methods** T cells were co-cultured with MDDCs for 5 days and stimulated by TGM3 for 24h, and then FCM was used to detect the expressions of IL-4, IL-22, IL-17, IFN- $\gamma$  and Foxp3 in T cells. IL-4, IL-12, TNF- $\alpha$ , IL-17A, IL-10, IFN- $\gamma$  and IL-6 in cell supernatants were detected by the method of CBA.

**Results** Compared with the control, the expression levels and MFI of IFN- $\alpha$  in T cells of the TGM3 group were higher than those in the blank group. The expression levels of IL-10, TNF- $\alpha$  and IFN- $\gamma$  in TGM3 group were increased than Blank group, there was significant difference between the two groups (TGM3 group vs Blank group: IL-10, 1.20 (0.14-35.33) vs 0.27 (0-24.50),  $\chi^2=15.99$ ,  $P=0.005 < 0.001$ ; TNF- $\alpha$ , 1 (0.59-4.27) vs 0.84 (0.01-1.78),  $\chi^2=10.09$ ,  $P=0.039 < 0.05$ ; IFN- $\gamma$  51.13 (17.07-175.0) vs 16.18 (4.17-104.0),  $\chi^2=17.12$ ,  $P=0.0018 < 0.05$ ). The expression of IFN- $\gamma$  in TGM3 group was higher than that in TGM3 added with  $\alpha$ -CD209 (51.13 (17.07-175.0) vs (1.18-16.44),  $\chi^2=17.12$  ( $P=0.0018 < 0.05$ )).

**Conclusion** TGM3 can stimulate T cells polarization and differentiation into Th1 cell subsets.

## CS08-10

**Study on images of common facial inflammatory skin diseases and AI-assisted diagnosis**

Xiao-Ming Liu

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**Background** Nowadays, Artificial intelligence (AI) is making great strides in medical data analysis and can improve the efficient and effective of clinical diagnosis. Since dermatology is a subject based on morphology and AI has already demonstrated its power on image analysis, AI is well suited to assist dermatologists to analyze skin diseases. Among all skin problems, inflammatory diseases are most common. In this study, we aimed to build an AI-assisted diagnosis system for inflammatory skin diseases. A total of 30,000 facial skin images with inflammatory skin diseases were collected and manually annotated by dermatologists. Based on these data, studied by computer algorithms.

**Methods** Firstly, these images were ranked based on quality, including resolution, contrast, facial pose, and whether makeup-wearing or not. Then, an image annotation system was developed to help dermatologists to label data. Secondly, double-blind test would be performed based on 2 dermatologists' clinical diagnosis. These inflammatory skin diseases were categorized into acne rosacea, sensitive skin, acne, contact dermatitis, seborrheic dermatitis. The ages of these patients are mainly between 18-42, accounting for 94%. The skin types are also studied, where the proportion of mixing is 43%, neutral is 20%, oily is 18%, and dry is 19%. Patients who have acne rosacea, acne or seborrheic dermatitis turn to have mixing facial skin, while sensitive skin has neutral skin and contact dermatitis has dry skin. Using the results of double-blind test, AI models were built which has ability to detect various skin diseases. The predict accuracy of AI models achieves 97%.

**Conclusions** AI is well-qualified to assist dermatology to diagnosis the skin diseases. For some facial inflammatory diseases which have no clear criteria for classification, the diagnosis would combine the results of AI and the feedback of treatments. Additionally, proper image quality is important for obtaining an accurate diagnosis and effective treatments

*CS09 Fungal Infection*

## CS09-1

**Korean guideline for the diagnosis and treatment of onychomycosis**

Jin Park

*Chonbuk National University Hospital*

Onychomycosis, fungal infection of the nail, is one of the most common dermatological conditions affecting up to 10% of the population. It can cause disfigurement of the nail, pain, discomfort, and increased risk of bacterial infection, thus resulting in lower self-esteem and quality of life. The treatment of onychomycosis is troublesome due to the slow growth of nails, the need for long-term application of topical and/or systemic medications. This in turn, translates into low cure rates and frequent relapses. Since the treatment guidelines for onychomycosis have been released by organization from different countries, there have been several advances in management of onychomycosis. Recently, the executive committee for onychomycosis guideline of Korean society for medical mycology developed an evidence-based, up-to-date and practical algorithmic guideline for the management of onychomycosis to ensure proper diagnosis and treatment of onychomycosis in Korea. Herein, I would like to introduce the newer Korean guideline that allows clinicians to make proper assessment and treatment of onychomycosis.

CS09-2

**CARD9 deficiency and genetic susceptibility of dematiaceous fungal infection**

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Dematiaceous fungi may cause a wide spectrum of infections in humans, including phaeohyphomycosis, chromoblastomycosis, and mycetoma. The clinical manifestations and prognosis are different between phaeohyphomycosis and chromoblastomycosis. Phaeohyphomycosis is relatively severe and intractable, with a relatively early onset, chronic course, and poor prognosis. Therefore, it is of great importance to study the underlying genetic defects and the subsequent immunodeficiencies in these dematiaceous fungal infections. In the past decade, studies of primary immunodeficiencies and fungal susceptibility, using novel genetic tools, have brought big innovations in our understanding of fungal immunology. Among these studies, an increasing number of genetic defects (including *CARD9*) that impair Th17 responses have been found to predispose to CMC and other severe fungal infections. In particular, our study first linked autosomal recessive *CARD9* deficiency with dematiaceous fungal infections. *CARD9*, mainly expressed in myeloid cells, is a crucial adaptor molecule in the downstream signaling of several C-type lectin receptors (including dectin-2, dectin-3, mincle, and intra-cellular danger sensors). *CARD9* mediates anti-fungal immunity by forming a complex with BCL10 and MALT1 (CBM complex), or facilitating the interaction between Ras-GRF1 and H-Ras. It is therefore considered as a bridge that links innate and adaptive immunity in anti-fungal immunology. We summarized 10 cases with phaeohyphomycosis in China—7 cases with *Phialophora verrucosa* infections, and 3 sporadic cases with other fungal infections. Autosomal recessive *CARD9* mutations were identified in all the 10 patients, underscoring that *CARD9* deficiencies might be an important predisposing factor underlying early-onset, recalcitrant phaeohyphomycosis in otherwise healthy individuals. Through functional studies, we showed these mutations led to lack of *CARD9* protein expression in patients. Moreover, patient-derived *CARD9*-deficient cells showed a selective impairment of proinflammatory cytokine and chemokine production, NF- $\kappa$ B activation, and T helper type 2- and T helper type 17-associated responses upon fungus-specific stimulation, while phagocytosis and reactive oxygen species production were intact. Consistently, *Card9*-knockout mice were highly susceptible to dematiaceous fungal infections and exhibited immune deficiencies similar to those of patients, including diminished NF- $\kappa$ B and p38 MAPK activation in local and in vitro functional studies. Collectively, our data suggested that otherwise healthy patients with recurrent dematiaceous fungal infections should be examined for possible *CARD9* deficiency. This work clarifies the association between inherited *CARD9* deficiencies and dematiaceous fungal infections, and furthers current knowledge on the spectrum and pathophysiology of diseases resulting from *CARD9* deficiencies. It is our hope that personalized immunotherapeutic and gene therapy strategies using bioengineered technologies might improve the clinical outcomes of these patients in the future.

CS09-3

**Evaluation of relationships between onychomycosis and vascular diseases using sequential pattern mining**

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Onychomycosis (OM) is a common nail disease. Although controversial, vascular diseases are considered to be independent predictors of OM and vice versa. Sequential pattern mining (SPM) has not been previously used as a method of statistical analysis in dermatology but is an efficient method for identifying frequent association rules in multiple sequential data sets.

The aim of our study was to identify the relationship between OM and vascular diseases in the real world through a population-based study using SPM. We obtained population-based data recorded from 2002 to 2013 by the Health Insurance Research and Assessment Agency. The measures for SPM were based on the values of comorbidity and

duration. We estimated 3-year risk for progression from OM to vascular disease and vice versa using logistic regression. Patients with varicose veins and peripheral vascular disease had higher OM comorbidity (comorbidity: 1.26% and 0.69%, respectively) than those with other vascular diseases. Patients diagnosed with varicose veins and peripheral vascular disease were diagnosed with OM after 25.5 and 55.1 days, respectively, which was a shorter duration than observed for other diseases. OM patients were at higher risk for peripheral vascular disease (adjusted odds ratio [aOR]: 1.199, 95% confidence interval [CI]: 1.151–1.249) and varicose veins (aOR: 1.150, 95% CI: 1.063–1.245). Patients with peripheral vascular disease (aOR: 1.128, 95% CI: 1.081–1.177) were at higher risk for OM, while patients with varicose veins had no statistically significant risk for OM. Careful consideration of vascular disease is required for proper management of comorbidities in OM patients.

#### CS09-4

### Epidemiologic feature and clinical analysis of HIV/AIDS with *Penicilliosis Marneffeii* in Yunnan Province

Yu-Ye Li, Teng-Yan Li

First Affiliated Hospital of Kunming Medical University

**Background** To understand the epidemiologic features of HIV/AIDS with *Penicilliosis Marneffeii*. To explore the clinical characteristics of HIV/AIDS with *Penicilliosis Marneffeii* and the death related factors of patients.

**Methods** Collect the patient's epidemiological and clinical data. Inspection of related lab records and experiments. Logistic single factor and multivariate unconditional regression analysis were used to analyze the effect of related factors on death.

**Results** (1) Epidemiologic feature: 315 patients including 241 males and 74 females. The mean age of patients was  $35.48 \pm 9.75$  years old. Mainly for young patients aged 19 to 40 years. (2) Clinical features: Clinical manifestations: 92.7% patients had fever, 27.9% had characteristic rash, 25.1% had oral mucosal damage, 28.9% had digestive symptoms, 39.0% had respiratory symptoms. Laboratory examination showed that 84.1% patients with CD4+T lymphocytes  $<50$  cells/ $\mu$ l, 58.7% patients with white blood cells  $<4.0 \times 10^9$ /L, 58.7% patients with platelet  $<100 \times 10^9$ /L, 79.4% with anemia, and 31.7% of the three lines were reduced. (3) Logistic univariate analysis showed that age (middle-aged and elderly people), marital (non-spouse), respiratory symptoms, elevated alanine aminotransferase, and elevated aspartate aminotransferase were risk factors for death.

**Conclusions** The clinical manifestations of HIV/AIDS with *Penicilliosis Marneffeii* are complex. It can express itself as fever, hepatosplenomegaly, lymph nodes enlargement, anemia, but may also appear as skin rash, mouth, digestive system, respiratory system, the central nervous system and other system damage. For middle-aged, non-spouse, pulmonary interstitial changes, patients with elevated alanine aminotransferase should be given high priority.

#### CS09-5

### Integration of quantitative proteomic and transcriptomic analysis in macrophage stimulated by mannoprotein of *Candida albicans*

Hang-Hang Jiang, Rui-Qun Qi, Yu-Xiao Hong, Song Zheng, Xing-Hua Gao

The First Affiliated Hospital of China Medical University

**Background** *Candida albicans* is a dimorphic fungus that grows both as yeast and filamentous cells and can cause the infection candidiasis in human beings. Actually, it is a commensal organism, but it will become a major health problem in immunocompromised individuals. Polysaccharide extracted from cell wall of *Candida albicans* is the main antigen presenting molecules which will lead to a series of immunoreactions.

**Methods** To investigate the alteration in transcript and relative protein levels after polysaccharide stimulation, the method of transcriptome with Illumina Seq and proteome with iTRAQ 8 labels were conducted into the experiments. Then we used Western blotting and RT-PCR to confirm the results and screen several signaling pathways.

**Results** We used transcriptomic and proteomic analyses to identify 163 differential proteins and 66 differential genes.

All differential data were enriched in several Kyoto Encyclopedia of Genes and Genomes pathways: translation-related pathways, metabolic pathways, and biosynthesis of secondary metabolites.

**Conclusions** The congruency in protein and transcript levels demonstrated the alteration happens in a consistent way after mannoprotein stimulation which influenced major inflammatory signal pathways. Abundant data showed comprehensive quantitative transcriptome and proteome data of macrophage in both experiment group and control group

#### CS09-6

### **Dermoscopy and fungal fluorescence staining detect infant kerion caused by *Arthroderma otae* with successful treatment of itraconazole**

Bin Yin, Meng-Sha Ma, Li-Xin Fu, Qiao-Mei Sun, Wen-Ju Wang, Xue-Ying Liu

*Chengdu Second People Hospital*

An 8-month-old boy, presented with a 7-month history of an inflammatory suppurative circular alopecia with diffuse scaling on his scalp. Accumulated scales around hair roots, black dots, cigarette-ash-shaped hairs and barcode-like hairs with horizontal white bands were observed by dermoscopy. Mycological direct examination with fungal fluorescence staining showed high numbers of ectothrix spores and endothrix hyphae of the hair. *Arthroderma otae* (teleomorph of *Microsporum canis*) was identified by culture and sequence analysis. The patient was cured by treatment with systemic Itraconazol in combination with topical application of 1% naftifne–0.25% ketaconazole cream for 10 weeks. This case highlights the importance of using both dermoscopy and fungal fluorescence staining, an effective and precise method, for facilitating the diagnosis of infant hair shaft infection caused by dermatophytes.

#### CS09-7

### **Silencing SOCS1 in dendritic cells protects from systemic *Candida albicans* by enhancing Th1-cell differentiation**

Dong-Mei Shi, Wei-Da Liu

*Jining First People Hospital*

**Background** Enhancing the immunity conferred by dendritic cells (DCs) to fungal infection represents a promising strategy in the number of immunocompromised individuals. In a previous study, we demonstrated that suppressor of cytokine signaling 1 (SOCS1) silencing can promote the maturation of DCs and induce an immune response against *Candida albicans* (*C. albicans*) *in vitro*. Herein, the effectiveness of SOCS1 suppression administered by SOCS1-siRNA-treated DCs is further evaluated in systemic *C. albicans* infection mouse model.

**Methods** Female mice prior to treatment with siSOCS1 DCs or control DCs were inoculated with *C. albicans* via the lateral tail vein and monitored for 28 days. Uninfected and infected (with *C. albicans* cells) mice were euthanized at days 1, 4 or 7 post-infection and the following analyses were performed: tissue fungal burdens; FACS analyses on spleen cells; histopathological analyses of the kidney; quantification of cytokines and chemokines in the blood serum by Luminex array.

**Results** The SOCS1-silenced DCs increase mouse survival and significantly decrease fungal colonization in the kidneys. We confirm that the serum IFN- $\gamma$  levels in SOCS1-silenced-DCs-treated mice are higher than in all other infected groups at the early stages of infection, which correlates with a higher differentiation of IFN- $\gamma$ +CD4+T cells (Th1) in the spleen. Meanwhile, the differentiation of IL-4-producing CD4+T (Th2) or IL-17-producing CD4+ T cells (Th17 cells) remain unaffected under the same treatment, suggesting that SOCS1-silenced DCs significantly affect the IFN- $\gamma$ -producing CD4+T cells (Th1). However, at the late stages of infection when the differentiation of Th1, Th2 and Th17 cells decreases in SOCS1-silenced-DCs-treated mice, all the serum cytokines (IFN- $\gamma$ , IL-4 and IL-17) are also reduced. In summary, treatment of mice with SOCS1-silenced DCs can protect mice from systemic infection during the early stages and thereby increase overall survival.

**Conclusions** We conclude that the increase in Th1 response in early stages avoids the cascade inflammatory response in later stages that is known to place such a large fungal load on the kidneys and cause subsequent death.

## CS09-8

**Comparative genomics and transcriptomics analyses of the fungal pathogen *Prototheca zopfii***

Xuan-Hao Zeng

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The mobility of human protothecaosis is rising worldwide in recent years, but the current study of *Prototheca zopfii* which is the most common pathogen to cause protothecosis has been blocked by the deficiency of gene information. *Prototheca zopfii* 18125 is isolated from the lymph gland of the first granulomatous lymphadenitis caused by *Prototheca*. *Prototheca zopfii* 50779 is isolate from the cerebrospinal fluid of a patient with meningitis. Using the next generation techniques, we have published the genome sequences of *Prototheca zopfii* 18125 and the mRNA transcriptome of *Prototheca zopfii* 50779, *Prototheca zopfii* 18125, and *Prototheca zopfii* N71. The results suggested that there was significant difference between the pathogenicity stains and environmental stain of *Prototheca zopfii*. The gene enrichment results showed that the translation process in pathogenicity stains had a significant down-regulation compared with environmental stain. We also found that genes as COX-2, PEX-12 related to oxidative phosphorylation had a significant up-regulation, which might be related to the pathogenicity of *Prototheca*. Our results could also be the basic foundation of the future studies in *Prototheca*.

## CS09-9

**Establishment of a diagnostic system for cutaneous infectious granuloma**

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*First Hospital of Beijing University*

**Background** Cutaneous infectious granuloma is a group of diseases mainly caused by *Mycobacterium tuberculosis* or atypical mycobacteria; parasites, or fungi, with similar histopathological and clinical manifestations. Due to the low sensitivity of culture, the etiological diagnosis is extremely difficult. Our aim was to establish a set of methods that could improve the diagnosis.

**Methods** A total of 137 patients with suspected infectious granulomatosis in our hospital from December 2015 to March 2018 were treated with skin biopsy. The samples were examined by histopathology and special staining, microbiological microscopy and culture, fresh tissue DNA extraction and multiple PCR amplification (including fungi, *Mycobacterium tuberculosis*, atypical mycobacteria, and *Leishmania*), and sequencing.

**Results** (1) The 90 cases of 137 suspected infectious granuloma were defined by histopathology, which showed tissue cells, neutrophils, and multinucleated macrophages infiltration. (2) The 68 cases in 90 infectious granuloma were detected pathogens. The positive rate was 75.6% (68/90), which was much higher than that of culture 25.6% (23/90). (3) Among the 68 positive detection of pathogens, there were 33 fungi, 30 atypical mycobacteria, 4 *Leishmania*, and 1 *Mycobacterium tuberculosis*. (4) Of the 33 cases of fungal infection, 23 cases were suspected by culture, and 10 were diagnosed by molecular diagnosis. The positive rate of fungal culture was 69.7% (23/33), and the fungi were *Sporothrix* sp., *Arthroderma otae*, *Aspergillus* sp., *Fonsecaea monophora*, *Phialophora verrucosa*, and *Mucor irregularis*. (5) The 30 cases of atypical mycobacteria were diagnosed by PCR amplification, sequencing, PPD/T-SPOT.TB test, and the effect of experimental anti-atypical mycobacteria treatment. This set of methods greatly improved the diagnostic rate 57.7% (30/52), compared with that without molecular diagnosis.

**Conclusions** The comprehensive diagnostic system including histopathology, microbiological microscopy and molecular diagnosis established by this study, could greatly improve the pathogens detection rate, provide a pathogen direction for personalized treatment of infectious granuloma, and greatly shorten the treatment periodicity. However, the pathogens of *Mycobacterium* infection have not yet been fully identified to the level of species.

## CS09-10

**Ecological, phenotypic and phylogenetic analysis of *Cryptococcus gattii* in Southeastern China**

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*Cryptococcus gattii* is an important pathogenic yeast for mammals including human, which caused an outbreak in Northwest America since 1999. Recently, patients infected by a similar genotype of *C. gattii* isolates with high-virulent have been identified in Japan, but few studies have been explored in China until today. Our study showed that a suitable ecological niche for *C. gattii* isolates in Southeast China are *Eucalyptus* spp. trees in Yunan province. The population genetics showed that VGI genotype strains dominated in Eastern China, but VGI genotype and VGIIb genotypes were more common in Southern China. The data indicated to us that asexual clonal expansion is the main mode by *C. gattii* isolates reproduced in China, which differed significantly from reports of North America. Phylogenetic analysis based on whole-genome data indicated that all *Cryptococcus gattii* isolates could be considered part of the same clade, which again suggested they were close relatives and might readily spread through China among the *Eucalyptus* trees that has been transplanted to China since the 19th century. In addition, *C. gattii* isolates in China had a susceptibility to the existing antifungal drugs, which also were consistent with their genetic background. No mating or resistance to antifungal drugs was observed in our study.

*CS10 Genetic Disorders*

## CS10-1

**Hereditary hypopigmentary disorders: a better understanding from a genetic view**

Tamio Suzuki

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Many specific gene products are sequentially made and utilized by the melanocyte as it emigrates from its embryonic origin, migrates into specific target sites, synthesizes melanin(s) within a specialized organelle, melanosome, transfers pigment granules to neighboring cells, and responds to various exogenous cues. A mutation in many of the respective encoding genes can disrupt this process of melanogenesis and can result in hypopigmentary disorders. In other words, congenital pigmentary disorders are due to mutation(s) in various genes that cause defects in melanin synthesis, formation of the melanosomes, their transfer within the melanocytes, as well as melanocyte maldevelopment. Here, I present some topics found in our study on hereditary hypopigmentary disorders.

## CS10-2

**HLA-B\*13:01 screening to Prevent Dapsone Hypersensitivity Syndrome**

Hong Liu

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**Background** Dapsone hypersensitivity syndrome (DHS), as a life-threatening condition, is the most serious adverse reaction associated with dapsone intake and one of the major causes of death in leprosy patients. HLA-B\*13:01 allele has been identified as the genetic determinant of DHS in Chinese population. This study aimed to determine the clinical efficacy of prospective HLA-B\*13:01 screening to reduce the incidence of DHS.

**Methods** HLA-B\*13:01 genotyping was performed using quantitative polymerase chain reaction (qPCR) method. HLA-B\*13:01 carriers were suggested to eliminate dapsone from multi-drug therapy (MDT) and HLA-B\*13:01 non-carriers took MDT. All the subjects were followed up for two months to monitor the adverse events. Immunological tests were done to distinguish DHS from leprosy reactions and reactions to other drugs. Historic

incidence of DHS was used as controls to evaluate the clinical efficacy of prospective HLA-B\*13:01 screening.

**Results** We recruited a total of 1272 newly diagnosed leprosy patients for HLA-B\*13:01 genotyping from 21 provinces throughout China during the period of February 2015 to November 2017. The 216 (17.0 %) subjects were found to carry HLA-B\*13:01 allele and treated by excluding dapson from MDT. The 1056 (83.0%) subjects were HLA-B\*13:01 negative and were treated with standard MDT. None of the subjects in the HLA-B\*13:01 negative group received a diagnosis of DHS. In contrast, based on the historic incidence, 11 patients of DHS would be expected. No significant correlation was found between other adverse events and HLA-B\*13:01 status.

**Conclusions** The prospective screening of HLA-B\*13:01 allele before commencing leprosy treatment and elimination of dapson from MDT for HLA-B\*13:01 carrier could significantly reduce the incidence of DHS in Chinese population.

### CS10-3

#### **Neurofibromatosis type 1-associated serious hemorrhagic events successfully treated with steroid pulse therapy**

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*University of Tsukuba*

Clinical features of neurofibromatosis type 1 (NF-1) involve a wide range of vascular abnormalities, and neurofibromin deficiency leads to excessive production of pro-angiogenic factors or pro-inflammatory factors including interleukin-6 (IL-6). Although the prevention of such vascular events is essential for these patients' quality of life, there is little information on feasible measures. We described a patient with NF-1-associated hemorrhagic events who was successfully treated with steroid pulse therapy. A 79-year-old female Japanese NF-1 patient was admitted to our hospital in shock due to the hemorrhage from plexiform neurofibroma on her right upper knee. Computed tomography and angiography revealed a large hematoma with active arterial bleeding from the branch of the right popliteal artery, and transarterial embolization therapy was successful. However, on day 19, she developed recurrent bleeding from the ruptured tumor, and the extremely fragile vasculature hampered further vascular intervention, but she refused to undergo hemipelvectomy for bleeding control. Expecting hemostatic or anti-inflammatory effect, we administered intravenous methylprednisolone pulse therapy (1 g/day×3 days), and this achieved prompt symptom recovery with decreased serum IL-6 levels. After surgical debridement and hematoma removal, granulation tissue was formed within a week, and she was discharged from our hospital, independently ambulatory, on day 85. Given the effectiveness and accessibility of corticosteroids, we propose steroid pulse therapy as a feasible, cost-effective alternative option for radical surgery in serious hemorrhagic events associated with NF-1 vascular abnormalities.

### CS10-4

#### **Permanent alteration of *Abcc6* in vivo CRISPR-Cas9 genome editing**

Da-Long Zhi

*Fourth Military Medical University Xijing Dermatology Hospital*

**Background** Pseudoxanthoma elasticum, a heritable ectopic mineralization disorder, is caused by mutations in the *Abcc6* gene primarily expressed in the liver and the kidneys. The fundamental question on pathogenesis of pseudoxanthoma elasticum, whether lack of *Abcc6* expression in liver or kidney is the primary site of molecular pathology in peripheral tissues, has not been addressed. The goal of this study was to assess whether genome editing using a clustered regularly interspaced short palindromic repeats (CRISPR)/CRISPR-associated system can efficiently introduce loss-of-function mutations into the endogenous *Abcc6* gene *in vivo*.

**Methods** We used adenovirus to express a CRISPR guide RNA targeting *Abcc6* in mouse liver, where the gene is specifically expressed.

**Results** We found that four days of administration of the virus, the mutagenesis of *Abcc6* in the liver was found and

the protein of *Abcc6* in the liver was decline. We also found that one month of administration of the virus, pyrophosphate (PPi) level was reduced in the CRISPR-*Abcc6* mice and depicted ectopic mineralization in the dermal sheath of vibrissae in muzzle skin.

**Conclusions** Genome editing with the CRISPR/CRISPR-associated 9 system disrupted the *Abcc6* gene *in vivo* with high efficiency and reduced PPi levels in mice, and depicted ectopic mineralization in the skin. This approach might have therapeutic potential for the prevention of pseudoxanthoma elasticum disease in humans

## CS10-5

### **Novel *MBTPS2* mutation in a Chinese pedigree with ichthyosis follicularis, alopecia, and photophobia syndrome**

Zhou Yang

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Ichthyosis follicularis, atrichia, and photophobia (IFAP) syndrome is a rare X-linked congenital disorder with the full phenotype in male patients and milder manifestations in female carriers. Some patients also have ectodermal dysplasia, intellectual disability, seizures, skeletal deformities, short stature, ear or eye anomalies and multiple system lesions. IFAP syndrome is caused by deficiency in *MBTPS2*, an intramembrane zinc metalloprotease essential for cholesterol homeostasis and ER stress response. We observed an IFAP pedigree of 3 generations in a Chinese family with novel *MBTPS2* mutations. The male proband presented with mild cutaneous manifestations, such as noninflammatory follicular hyperkeratosis, nonscarring alopecia and photophobia. The affected female patients had hairless patches on scalp and ichthyosis on limbs. Genetic analysis identified a novel missense mutation in exon 11. This report enlarges the phenotypic and genotypic spectrum of *MBTPS2* mutations.

## CS10-6

### **Non-invasive prenatal diagnosis for Neurofibromatosis type 1 of paternal mutation by next-generation sequencing**

Jian-Ying Liang

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**Background** With the revolution of next-generation sequencing (NGS) techniques, non-invasive prenatal diagnosis (NIPD) by cell-free fetus DNA (cffDNA) obtained from maternal plasma in first and second trimester using NGS technique showed a safer and earlier advantage than conventional invasive prenatal diagnosis. However, the application in genodermatosis was seldom reported. We described our attempt of NIPD by NGS in a neurofibromatosis type 1(NF1) family.

**Methods** A next-generation sequencing (NGS) assay was used to detect the presence of the paternal mutation in cell-free circulating DNA (cfDNA) extracted from maternal plasma at 9 and 16 weeks' gestation.

**Results** Counts of the C (reference) and T (mutated) alleles for the NF1 c.1627C>T/Gln543Ter mutation in cfDNA using NGS showed that the paternal T (mutated) alleles were reliably detected at either 9 or 16 weeks' gestation. For 9 weeks cfDNA sample, total numbers of T (mutated) alleles were 16877 copies while counts of the C (reference) alleles were 228,146 copies, the mutation ratio was 0.0689 in maternal plasma. For 16 weeks cfDNA sample, T (mutated) alleles were 918 copies and C (reference) alleles were 9023, the mutation ratio was 0.0923. The NIPD result was confirmed by sanger sequencing using DNA from the amniotic fluid cells and the induced labor fetus.

**Conclusions** To our knowledge, this is the first non-invasive prenatal diagnosis in genodermatosis on the Chinese mainland. The application is based on the paternal mutation and an accurate solution of maternal mutation detection needs to be groped for and assessed. Our study confirmed the feasibility of NIPD by NGS in monogenic genodermatosis.

CS10-7

**Exome Sequencing in a Chinese Family Identifies *TTC9* Mutation associated with Keratitis-Ichthyosis-Deafness (KID) syndrome**

Xiao-Hua Wang

*Southern Medical University Dermatology Hospital*

**Background** Keratitis-ichthyosis-deafness (KID) syndrome is a rare congenital ectodermal dysplasia that is characterized by ichthyosiform hyperkeratosis of the skin, neurosensory hearing loss, and vascularizing keratitis. We presented two patients from the same family (aged 37 and 12 years, respectively) with the classic phenotypic triad. Both patients suffered from total hearing loss and vascularizing keratitis since childhood, two classic features of KID syndrome.

**Methods** We carried out whole-exome sequencing of 4 individuals from a KID-syndrome family, in which there were two affected KID family members and two non-affected family members.

**Results** In this study, we identified a novel nonsynonymous mutation, c.486G>C.p.Glu162Asp in the *TTC9*.

**Conclusion** The results from our study revealed a novel gene *TTC9* to be the genetic determinant of a KID syndrome family, and provided new insights into the etiology of this rare disease.

CS10-8

**GWAS follow-up study discovers a novel genetic signal on 10q21.2 for atopic dermatitis in Chinese Han population**

Xin-Ying Cai

*First Affiliated Hospital of Anhui Medical University*

**Background** Atopic dermatitis (AD) is a chronic inflammatory skin disease. Our group has conducted the first AD-GWAS in Chinese Han population and identified two new susceptibility loci. We performed a follow-up study based on our initial published AD-GWAS datasets in an independent larger cohort of Chinese Han ethnicity to look for additional genetic signals for AD.

**Methods** Sixty-nine top single nucleotide polymorphisms (SNPs) with  $P < 1 \times 10^{-3}$  were selected from the previously overlooked susceptibility variants, and genotyped in an independent cohort of 4619 cases and 10,789 controls using the Sequenom Massarray system. Association analysis was performed using PLINK 1.07 software. Joint analysis was carried out in the combined GWAS and replication samples. Bioinformatic analysis was performed to predict the possible causal gene.

**Results** Seven SNPs showed association evidence with AD in the independent replication cohort ( $P < 0.05$ ). When the genotypic data from the primary GWAS and the replication stage were combined, we found that the significance of association at rs224108 (10q21.2) exceeded the genome-wide threshold ( $P_{\text{combined}} = 1.94 \times 10^{-9}$ ,  $OR = 1.21$ ), and another SNP rs11150780 (17q25.3) showed suggestive association with AD ( $P_{\text{combined}} = 6.06 \times 10^{-7}$ ,  $OR = 1.18$ ). SNP rs224108 located 15kb upstream of ADO. Bioinformatics analysis strongly suggested that the genetic association effect at rs224108 may be due to its impact on the transcriptional regulation of ADO in keratinocyte primary cell.

**Conclusion** Our follow-up study confirmed a novel susceptibility variant on 10q21.2 associated with atopic dermatitis in Chinese Han population.

CS10-9

**Clinical and histopathological analysis of Blau Syndrome and Early-onset Sarcoidosis**

Yi Zheng

*The Second Affiliated Hospital of Xi'an Jiaotong University*

**Background** Blau Syndrome (BS) and early-onset sarcoidosis (EOS) are characterized by arthritis, dermatitis and uveitis in clinic and non-caseating granuloma in pathology. These two autoinflammatory diseases have been proved to be caused by the mutation of *NOD2/CARD15* gene which lead to nuclear factor  $\kappa$ B (NF- $\kappa$ B) activation disorders. The multiple organs could be affected and clinical symptom of BS could be variety, so how to recognize the diseases in early onset is very important for the better prognosis.

**Methods** We presented six cases of BS/EOS to analyze their clinical features, histopathology and mutation of *NOD2/CARD15*.

**Results** Of our six cases, including two girls and four boys, the signs occurred from 3 to 18 months. Three cases had dermatitis only; two cases have dermatitis and arthritis, one has triad symptoms of dermatitis, uveitis and hypertension; four cases presented generalized papules; and two cases presented erythema. All skin biopsy revealed non-caseating granuloma or epithelioid granuloma in dermis. *NOD2/CARD15* gene screening indicated three cases with mutation p.R334W (c.1000C>T); one case had a double mutation with a novel mutation H313R (c.938A>G) and a reported mutation R471C (c.1411C>T); one case showed negative results; and one case rejected the test.

**Conclusions** Dermatitis could be the first sign of BS patients presenting with generalized papules or erythema. The triad could proceed from one to another or absence sometimes. Gene analysis could help to diagnose earlier and avoid further worsening.

CS10-10

**Establishment of a sample database and clinical management system of hereditary epidermolysis bullosa in the West China Hospital**

Guo-Qin Liu

*West China Hospital of Sichuan University*

**Background** Epidermolysis bullosa (EB) is a group of rare monogenic inherited disease, which is characterized by the development of blisters after minor mechanical friction or trauma. It often accompanys with birth or shortly after that. EBs often dead in the first two years. It seriously affects the quality of life, and for serious condition even to death. This study aimed to establish a standardized sample database and management system of EB patients in West China Hospital, witch can help the diagnosis, treatment, clinical care, and prenatal care of EB.

**Methods** Collect the clinical information, make skin biopsy for histopathology direct immunofluorescence (DIF) and Transmission electron microscope (TEM), take gene sequencing analysis test. Make diagnosis depend on the clinical features and histopathology (HE+DIF) and TEM and gene sequencing. Clinical management: regular clinical follow-up, health education, daily skin care guidance, psychological counseling, expectant treatment, multi-disciplinary joint clinical follow-up, and prenatal consultation.

**Results** From 2011 to 2018, our sample database collected 30 cases for preliminar diagnosis, and 22/30 cases were made in definite diagnoses (with TEM and/or gene sequencing diagnosis). The 30/30 cases had clinical informations, 28/30 cases had histopathologic HE scores. The 9/30 cases took DIF, 24/30 cases took TEM. Gene sequencing: 15/30 cases (EBS 1/15, JEB 3/15, DEB 10/15, and Kindler syndrome 1/15). One family had a healthy newborn with EB-causing gene carriers after prenatal genetic screening. We found some new mutations. Standardized management enabled families to learn skin care skills and that then improved the quality of their lives. The establishment of a sample database was conducive to the clinical study of EB.

**Conclusions** The discovery of new mutation sites has enriched the gene genetic map of EB. The standardized management has improved the awareness of patients and their families about EB, which then reduced the sufferings. The prenatal consultation reduced the genetic risk of EB children by birth control, and reduced the burdens of family and social.

## CS13 Pigmentary Disorders

### CS13-1

#### **Melasma: updates and perspectives**

Kyoung-Chan Park

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Melasma is an acquired hypermelanosis characterized with asymmetric brown-colored irregular reticulated macules on sun-exposed areas, especially face. Asian women in their thirties and forties are vulnerable to have the disease. The pathogenesis of melasma is not fully elucidated yet, but chronic ultraviolet (UV) exposure, female hormone stimulation and predisposed genetic background could play a role in the occurrence of melasma. The management of melasma is highly challenging due to inconsistent treatment results and frequent relapses. However, recent knowledge revealed that melasma is not only a disease of melanocyte but also a photoaging skin disorder. Herein, we discuss the histopathologic findings of melasma, including solar elastosis, altered basement membrane, increased vascularization, and an increase in mast cell count, to validate that melasma is a photoaging disorder and its therapeutic implications. We further discuss latest updates and perspectives with respect to melasma treatment.

### CS13-2

#### **Blocking the oxidative stress-induced CXCL16-CXCR6 chemotaxis to develop new targeted treatments for vitiligo**

Chun-Ying Li

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Vitiligo is an autoimmune skin disease characterized by progressive depigmentation due to the loss of epidermal melanocytes. Currently, available treatments for vitiligo utilize a non-targeted approach with moderate efficacy. The key event in the development of vitiligo is the infiltration of melanocyte-specific cytotoxic CD8<sup>+</sup> T cells in the skin, which is mediated by multiple chemokines. Oxidative stress is a key player during disease initiation and progression. Nevertheless, little is known about the effects of oxidative stress on the chemokine signals and the following immune events. Our studies have demonstrated that the chemokine pair CXCL16-CXCR6 mediates recruitment of CD8<sup>+</sup> T-cell and the autoimmune destruction of melanocytes in response to oxidative stress in lesions of patients with vitiligo. Furthermore, the CXCL16 expression in human keratinocytes induced by oxidative stress is, at least in part, caused by 2 unfolded protein response (UPR) pathways: PERK-eIF2 $\alpha$  and IRE1 $\alpha$ -XBP1. Moreover, blocking the UPR-induced CXCL16-CXCR6 interaction alleviates CD8<sup>+</sup> T-cell migration. Our study identifies a critical role of UPR-induced CXCL16 production under oxidative stress in the pathogenesis of vitiligo. Blocking the UPR-CXCL16-CXCR6 axis might develop a promising new targeted therapy for vitiligo.

### CS13-3

#### **Natural course of nevus depigmentosus: long-term follow-up of 92 cases**

Jae Min Sung, Ji Young Yang, Soo Hyun Kwon, So Min Kim, Jung Min Bae, Hee Sun Chang, Hyub Kim, Hee Young Kang, Eun-So Lee, You Chan Kim

*Department of Dermatology, Ajou University School of Medicine, Suwon*

**Background** Nevus depigmentosus (ND) is a common nevoid abnormality which manifests as well-circumscribed hypopigmented patch. Although it is known to be stable in its relative size and distribution, there is no long-term follow-up study yet. The aim of this study was to delineate the natural course of ND.

**Methods** Ninety-one patients diagnosed with ND from March 1998 to July 2016 at Ajou University Hospital, St.

Vincent's Hospital, and Sosom Dermatologic Clinic were included. Their medical charts and photos were retrospectively reviewed and a clinical survey was done.

**Results** The most common site of ND was the neck, followed by the back and the face. Mean percentage of body surface area affected by ND was 1.9%. They were followed-up over a median period of 7.3 years (range 0.1-43.8 years). Out of 92 patients, 62 did not receive any treatment. They reported no change of the lesions in 87%, expansion in 10%, and shrinkage in 3%. Twenty-nine patients received treatments such as narrowband ultraviolet-B and excimer laser.

**Conclusion** ND generally has a non-progressive course, but may shrink or expand in exceptional cases.

#### CS13-4

### Combination of 308-nm excimer laser with topical pimecrolimus for the treatment of childhood vitiligo

Hui-Lan Yang

*Guangzhou General Hospital of Guangzhou Military Command*

**Background** To investigate the effect of treating childhood vitiligo by 308-nm excimer laser combined with topical pimecrolimus.

**Methods** A total of 49 patients with symmetrical lesion bilaterally distributed on the face, trunk, and hand were enrolled in this right/left comparative, single-blinded trial, they were randomly divided into two groups: group A, lesions received excimer laser twice per week with combination of 1% pimecrolimus cream twice daily; group B, lesions received excimer laser twice per week only. All subjects were evaluated after the 15th and 30th laser treatment sessions.

**Results** No statistically significant difference of efficacy between the two groups at the rate of repigmentation appeared after the 15th treatment session ( $Z = 3.272$ ,  $P = 0.059$ ), while the significant difference appeared after the 30th treatment sessions ( $Z = 4.379$ ,  $P = 0.001$ ), at the end of 30 weeks of treatment, 71% of patients from group A achieved Grade 3 or 4 repigmentation compared with 50% in group B. Severe adverse reactions were not observed in the experiment.

**Conclusions** The 308-nm is effective, safe, with minimal side-effects for childhood vitiligo. Combination of topical pimecrolimus and excimer laser is statistically better than excimer laser alone.

#### CS13-5

### Necroptosis is a novel way of melanocyte death in oxidative stress-related vitiligo pathogenesis

Bo-Wei Li

*Fourth Military Medical University Xijing Dermatology Hospital*

**Background** To determine whether melanocyte dies in alternative way of programmed cell death named necroptosis under oxidative stress in vitiligo pathogenesis other than apoptosis.

**Methods** We used confocal microscopy to observe necroptotic markers in melanocytes of vitiligo lesional skin. Real-time PCR, western blot, CCK-8 assay, flow cytometry, immunocytofluorescence, and immunoprecipitation were performed to explore mechanism of necroptosis in human immortalized normal melanocyte cell line PIG1 and vitiligo melanocyte PIG3V under  $H_2O_2$  stimulation.

**Results** We found that phosphorylation of RIP3 and MLKL, the biomarkers of necroptosis, were prominently up-regulated in melanocytes of vitiligo lesions, which were hardly detected in healthy skins. Then, we proved that oxidative stress induced marked necroptosis in PIG1 and PIG3V. In addition, inhibition of either RIP1 or MLKL significantly protected melanocytes against  $H_2O_2$ -induced cell death by lessening oxidative damage. More importantly, we found PIG3V was more vulnerable to oxidative stress-induced necroptosis, as the interaction of RIP1 with RIP3 and the translocation of p-MLKL to cell membrane happened earlier in PIG3V. What's more, mitochondrial ROS partially involved in necroptosis of melanocytes under  $H_2O_2$  treatment.

**Conclusion** We identified that necroptosis was a novel way of melanocyte death in oxidative stress-induced vitiligo pathogenesis, pointing out that targeting necroptosis may be a potential approach for vitiligo treatment.

### CS13-6

#### **Mussel adhesive protein inhibits post-inflammatory hyperpigmentation through wound healing and attenuation of inflammation**

Zi-Qi Liu

*Fudan University Affiliated Huashan Hospital*

**Background** To investigate the therapeutic effect of mussel adhesive protein (MAP), a novel biomedical material, on post-inflammatory hyperpigmentation (PIH) and its underlying mechanism.

**Methods** Twenty Chinese patients (Fitzpatrick skin types III-IV) with stable vitiligo underwent suction blister grafting were enrolled in the study. Post-operatively, MAP spray or 0.05% fluticasone propionate cream was applied to one selected side of donor site for the first 7 days. Assessment on the development of PIH and wound healing process were obtained on week 1, week 4 and week 12 post-operation. The mechanism of MAP's effect on PIH was further studied in UV-irradiated HaCaT cell model.

**Results** Short-time topical application of MAP after acute injury exerted notable inhibitory effect on post-inflammatory hyperpigmentation comparable to steroid cream, manifested by significant reduction of melanin and erythema index (measured by Maxemeter,  $P < 0.05$  compared with control group) and papillary contrast (measured by reflectance confocal microscopy,  $P < 0.05$ ) on week 12. Additionally, topical application of MAP significantly accelerated wound recovery on week 1 ( $P < 0.01$ , compared to control group and steroid group). *In vitro* study revealed that MAP protected HaCaT cells from UVB-induced cell death and apoptosis. It also decreased the expression of UVB-induced inflammatory cytokines (IL-1 $\alpha$ , IL-6) and melanogenic molecules ( $\alpha$ -MSH).

**Conclusion** Topical application of mussel adhesive protein effectively inhibits post-inflammatory hyperpigmentation through promotion of wound healing and attenuation of inflammation.

### CS13-7

#### **Plasma miRNAs profiles in Uygur patients with nonsegmental vitiligo**

Xiao-Jing Kang

*Xinjiang Uygur Autonomous Region People's Hospital*

**Background** To examine the plasma expression profiles of miRNAs in nonsegmental vitiligo (NSV) of Uygur patients.

**Methods** Plasma miRNA expressions profiles in 12 patients with NSV and 12 healthy controls were performed by microRNA arrays. ROC curve was performed for evaluating the early diagnosis value. We further predicted the putative target genes for the dysregulated miRNAs using the online bioinformatic algorithms (TargetScan, Miranda and PicTar) and carried out functional annotation including GO enrichment and KEGG pathway analysis for miRNA predicted targets. A network analysis by Cytoscape 3.4.0 was carried out.

**Results** TEN miRNAs showed different expression levels between two groups. The top three miRNA for early diagnosis was miR-223-3p, miR-6089 and miR-6125, the value of AUC was 0.847, 0.840 and 0.840, respectively. The top 30 differential miRNAs target genes and possible molecular functions mainly included cargo loading into vesicle, apoptotic process, endoplasmic reticulum calcium ion concentration, *etc.* The top 30 of KEGG pathway enrichment analysis mainly included metabolic pathways, mTOR signaling pathway and SNARE interactions in vesicular transport. A network analysis showed a complex regulatory pattern between the differential miRNA and its target genes.

**Conclusion** Plasma miRNA are related to the pathogenesis of Uygur NSV. And miR-223-3p, miR-6089 and miR-6125 might be the potential promising biomarkers for Uygur NSV.

CS13-8

**Analysis of the effect of different doses of oral tranexamic acid in treating melasma: a multicenter prospective study**

Chen-Yu Zhu

*Chinese Academy of Medical Sciences Peking Union Medical College Hospital***Background** To analyze the therapeutic effect of different doses of oral tranexamic acid (TA) in treating melasma.**Methods** Patients with severe melasma were randomized to receive TA at a daily dose of 500 mg, 750 mg, 1000 mg, or 1500 mg. Clinical photos and VISIA photos of the patients were taken at baseline, 4 weeks, 8 weeks, 6 months, 1 year, and 2 years. The melasma area and severity index (MASI) and the melanin index were measured. Blood routine and coagulation functions were examined at each time point. The photos were divided into five levels: apparent improvement, slight improvement, unchanged, and deterioration.**Results** Clinical photos showed that all the four doses of TA were effective in treating melasma, and the efficacies were correlated with treatment time and dosage. However, there were no significant differences in the MASI or the melanin index between the four doses. The treatment was generally safe for most patients. The side effects included mild upset stomach and decreased menstruation.**Conclusion** Oral TA was safe and effective in treating melasma. The patient satisfaction was high, and most patients could withstand long-term treatment.

CS13-9

**Novel heterozygous missense mutation in the exon 6 of the *POFUT1* gene in Dowling-Degos disease**

Ying-Da Wu

*Chinese Academy of Medical Sciences Dermatology Hospital***Background** Dowling-Degos disease is a rare autosomal dominant disorder, characterized by post-pubertal reticulate hyperpigmentation, particularly affecting the flexural areas and other great skin folds. Mutations in *KRT5*, *POFUT1* and *POGLUT1* genes have been established as causative genetic defects for the development of DDD. Here, we identified the gene mutation of a Chinese family with DDD featured with generalized DDD and AI-like features.**Methods** Informed consents and peripheral blood samples were obtained from the all subjects (8 pedigree members and 100 unrelated control individuals), in accordance with the *Declaration of Helsinki* principles. Genomic DNA was extracted from the peripheral blood leucocytes samples. All coding regions and flanking sites of the DDD related genes (*KRT5*, *POFUT1* and *POGLUT1*) were amplified by polymerase chain reaction using previously published primers, and Sanger sequencing was performed.**Results** As a heterozygous codon mutation c. 945T >G (p. Y315fs) in exon 6 of the *POFUT1* was identified, the diagnosis of DDD was confirmed. This mutation was not detected in unaffected family members and 100 normal individuals. This novel missense mutation c. 945T >G (p. Y315fs) locating in the conserved domain but not a biting site, ending up with the coding of just 11 binding sites and generating a largely non-functional truncated protein. The c. 945T>G mutation introduce the premature termination of O-fucosyltransferase-1's polymerization.**Conclusion** A novel *POFUT1* mutation was verified as the DDD-causing mutation.

## CS13-10

**Impaired Activation of SIRT3 contributes to oxidative-stress induced mitochondrial dysfunction: a possible mechanism underlying the degeneration of melanocytes in vitiligo**

Xiu-Li Yi

*Fourth Military Medical University Xijing Dermatology Hospital*

**Background** To investigate the molecular mechanism of SIRT3 in antagonising the oxidative damage of melanocytes.

**Methods** The expression of 8-OHdG, Sirt3 and Ace-SOD2 in both vitiligo tissue and healthy skin tissue were detected by immunofluorescence. Then we detect the expression of Sirt3 in melanocytes treated by H<sub>2</sub>O<sub>2</sub>. After knocking out Sirt3 in NHEM and over-expression Sirt3 in vitiligo melanocytes PIG3V, we detected the cell apoptosis, the level of endometrial ROS, mitochondrial membrane potential, mitochondrial dynamics and the expressions of apoptotic molecules under oxidative stress. Then we knocked out Sirt3 and rescue the expression of OPA1, and investigate the cell apoptosis level and mitochondrial fuction.

**Results** We found that both the expression and activity of SIRT3 was significantly decreased in melanocytes of vitiligo skin lesions, compared with normal healthy controls. The expression and deacetylated activity of the Sirt3 in NHEM cells were significantly increased under oxidative stress. Futhermore, we found that knocked out Sirt3 in NHEM cells could significantly increase the cell apoptosis, the level of mitochondrial ROS and mitochondrial fission under oxidative stress. Moreover, the expression of apoptotic molecules was significantly up-regulated, and the release of cytochrome c to cytoplasm obviously increased. Mechanistically, we showed that Sirt3 could deacetylate OPA1 and increase its function in regulating mitochondrial fusion, thus reducing the release of cytochrome c to cytoplasm and cell apoptosis induced by oxidative stress.

**Conclusions** Taken together, our results have provided evidences that impaired activation of Sirt3 may contribute to oxidative-stress induced mitochondrial dysfunction and subsequent melanocyte degeneration in vitiligo.

*CS14 Psoriasis*

## CS14-1

**Role of IL-17-producing cells in the pathogenesis of psoriasis**

Tomotaka Mabuchi

*Tokai University, Japan*

The IL-23/IL-17 signaling pathway is a key mediator in the development and maintenance of psoriasis. In response to IL-23, IL-17-producing cells secrete IL-17 and IL-22 that act on keratinocytes. In this pathway, IL-23 stimulates proliferation of IL-17-producing cells, and then IL-17 facilitates local inflammation and activates keratinocytes. IL-22 induces keratinocyte hyperproliferation. Based on this role of IL-23/IL-17 signaling pathway in the pathogenesis of psoriasis, many effective biologic agents, including anti-IL-23 antibodies, anti-IL-17 antibodies, and anti-IL-17 receptor antibody were developed. Now, they are widely used in clinically. Although Th17 cells are main source of IL-17 in the pathogenesis of psoriasis, many other cells also produce IL-17. We reported that  $\gamma\delta$  low-expressing T cells are essential producers of IL-17 in an IL-23-mediated murine model of psoriasiform dermatitis, now, it is well-known that  $\gamma\delta$  T cells are one of the other sources of IL-17. Because of the subset and role of  $\gamma\delta$  T cells are different between mice and human beings, the role of  $\gamma\delta$  T cells in the pathogenesis of human psoriasis is still unclear. Innate lymphoid cells (ILCs) are innate immune cells which don't have antigen specific B or T cell receptor. They have some functions analogous to helper T cells. Group3 ILCs (ILC3) are the innate counterpart to Th17 cells, thus, ILC3 instead of  $\gamma\delta$  T cells are thought to be essential producers of IL-17 in human psoriasis. On the other hand, the presence of IL-17-producing  $\gamma\delta$  T cells in human psoriatic skin lesion is reported; even in human psoriasis  $\gamma\delta$  T cells may play a role. In this lecture, I will review the role of IL-17-producing cells, especially for Th17 cells,  $\gamma\delta$  T cells, and ILC3 in the pathogenesis of psoriasis.

## CS14-2

**Study on the efficacy and mechanism of matrine and its combination of acitretin for psoriasis**

Wei-Wei Jiang

*Peking University the Third Hospital*

**Background** To study the therapeutic effect and mechanism of matrine in the treatment of psoriasis, and explore whether it may be related to the induced autophagy and to study whether the combination of matrine and acitretin can induce synergism.

**Methods** To collect the clinical serum specimens of psoriasis patients with the method of matrine, acitretin, and the combination of matrine and acitretin. Then detecting the change of concentration of cytokine IL - 17, IL - 23 and TNF- $\alpha$  with ELISA at 0, 2, 4 weeks treatment. At the same time, recorded their adverse reactions and abnormal laboratory test index. To develop psoriasis-like HaCaT cell line, detecting the cell proliferation, cycle, and apoptosis with MTS and flow cytometry after stimulated by 0, 0.2, 0.4, 0.8, 1.6 mg/ml of matrine. The cell autophagy was observed by transmission electron microscopy. The total protein was extracted, and the expression of autophagy correlated protein and its associated signaling pathway was detected by Western-Blot. The results was analysed that whether there were synergistic or superimposed effects on the above results in the combination group.

**Results** Matrine was effective in the treatment of psoriasis. The results of MTS showed that matrine inhibited cell proliferation. The results of flow cytometry showed that the matrine can lead to cell cycle inhibition and apoptosis. After the treatment of matrine in HaCaT cell lines, electron microscopy showed a significant increase in autophagy. The expression of autophagy associated protein LC3II/LC3I was significantly increased and p62 was significantly reduced. The pathway effector protein p-mtor and p-akt were significantly increased. The above changes were more obvious in the combination group.

**Conclusions** Matrine is proved to be effective in the treatment of psoriasis clinical specimens and *in vitro*. Its mechanisms may be related to induce autophagy, and this effect may be related to the regulation of pi3k-akt-mtor signaling pathway. In the treatment of psoriasis, combination matrine and acitretin may play a synergistic effect while reducing the side effects.

## CS14-3

**Fn14 deficiency ameliorates psoriasis-like skin disease in a murine model**

Ling-Ling Peng

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**Background** Tumor necrosis factor (TNF)-like weak inducer of apoptosis (TWEAK) is a multi-functional cytokine that acts through its receptor fibroblast growth factor inducible 14 (Fn14). Recent studies demonstrated that the TWEAK/Fn14 signals participate in the development of psoriasis. The purpose of this study was to further explore the effect of Fn14 inhibition on experimental psoriasis.

**Methods** Psoriasis-like skin disease was induced in the wild-type and Fn14-knockout BALB/c mice.

**Results** We found that Fn14 deficiency ameliorates psoriasis-like lesion in this model, accompanied by less inflammatory cell infiltration and proinflammatory cytokine production in lesional skin. The cutaneous expression of TNF receptor type 2 also decreased in the Fn14-deficient mice. Moreover, the topical application of TWEAK exacerbated psoriatic lesion in the wild-type but not in the Fn14-deficient mice. Furthermore, TWEAK promoted the expression of IL-8, keratin 17, and epidermal growth factor receptor (EGFR) but inhibited the expression of involucrin in psoriatic keratinocytes *in vitro*. Interestingly, such effect of TWEAK was abrogated by an EGFR inhibitor (erlotinib).

**Conclusions** TWEAK/Fn14 signals contribute to the development of psoriasis, and involve the transduction of the EGFR pathway. Fn14 inhibition might be a novel therapeutic strategy for patients with psoriasis.

## CS14-4

**Immunological memory exists in the recurrent lesion and nonrecurrent skin after remission in psoriatic patients**

Zhu Shen

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**Background** Psoriasis usually recurs in previously affected areas, so a pathogenic memory has been proposed, but the nature is not completely known. Tissue-resident memory T (TRM) cells are non-recirculating memory T cells that persist long-term in epithelial tissues, including the skin. Because they can localize in the skin for many months, we speculate that TRM may contribute to this recurrent pathology. The aim of the present study was to compare the differences of quantity proportion and secretion ability of cytokines of the TRM cells between recurrent and nonrecurrent lesions following remission, as well as to explicit the possible survival signal for these TRM cells in psoriatic lesion.

**Methods** RNA-Seq, Gene Ontology and KEGG analysis, real-time PCR, flow cytometer analysis/sorting, and western blot were used to explore the immunological memory.

**Results** Compared with normal skin, there were shared common genes significantly upregulated (>2 folds,  $P < 0.001$ ) by recurrent and nonrecurrent lesions after remission, including CD69. CD8+CD69+ TRM cells existed in both lesions, and they could secrete IL-17A and IL-22 after stimulation. Levels of IL-15, secreted by keratinocytes in psoriasis epidermis, in nonrecurrent lesions remained as high as in neighboring recurrent lesions, and recombinant human IL-15 could induce CD69 on TRM cells.

**Conclusions** CD8+CD69+ TRM cells persist in clinically resolved psoriatic lesions whether it recurs or not, and they can produce IL-17A and IL-22 with critical effect on psoriatic recurrence. Furthermore, we have indicated the IL-15 pathway may play a crucial role in the survival of CD8+CD69+ TRM cells in psoriatic lesions.

## CS14-5

**Decrease of Galectin-3 in keratinocytes: a potential diagnostic marker and a critical contributor to the pathogenesis of psoriasis**

Zhen-Rui Shi

*Sun Yat-sen Memorial Hospital, Sun Yat-sen University*

**Background** To investigate a protein expressed by keratinocytes that is specifically involved in the development of psoriasis.

**Methods** The expression of Galectin-3 and inflammatory mediators was examined by immunohistochemistry staining and/or RT-PCR. Imiquimod-induced psoriasis model and skin-graft model with Galectin-3 knockout mice (Gal3<sup>-/-</sup>) were adopted to investigate how epidermal Galectin-3 lead to psoriatic manifestations.

**Results** Expression of Galectin-3 was enormously decreased in epidermis in lesional skin, but not decreased in non-lesional skin in psoriasis patients, nor was in the other skin diseases known as psoriasiform dermatitis with clinical and histological characteristics similar to psoriasis. In imiquimod-induced psoriasis model, Gal3<sup>-/-</sup> mice developed severe skin inflammation with significant increase of epidermal thickness and formation of neutrophilic microabscess in epidermis, and was rescued simply by intracutaneous injection of recombinant murine Galectin-3 protein. Moreover, skin graft taken from Gal3<sup>-/-</sup> mice developed psoriasis-like skin inflammation after transplanted onto wildtype mice. The intracellular inhibition of Galectin-3 expression spontaneously impaired keratinocytes differentiation, apoptosis and migration, increased the expression of S100A7-9, CXCL-1, 8 and CCL20, and enhanced the chemotaxis capacity to neutrophils *in vitro*. By blocking neutrophils migration through intraperitoneal injection of SB225002, the psoriasis-like skin inflammation induced by imiquimod was significantly reduced in Gal3<sup>-/-</sup> mice.

**Conclusions** The deficiency of Galectin-3 in epidermis is psoriasis-specific among diseases of psoriasiform dermatitis and ample to promote psoriasis development by recruiting neutrophils into epidermis, which offers promising diagnostic and therapeutic resolutions for psoriasis.

## CS14-6

**Up-regulated E3 Ligase Trim21 contributes to keratinocytes proliferation and inflammation in psoriasis**

Lu-Ting Yang

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**Background** Psoriasis is an autoimmune inflammatory disease characterized by epidermal hyperproliferation, aberrant differentiation and inflammation. Our previous studies identified Trim21 to be an E3 ligase in ubiquitination of K17, which promoted STAT3 nuclear entry in keratinocytes in psoriasis. However, the pathogenic role of Trim21 and its regulatory mechanism remains unclear. This work was to investigate the role of Trim21 in the pathogenesis of psoriasis.

**Methods** CCK8 (Cell Counting Kit) and EdU (5-ethynyl-2'-deoxyuridine) were used to detect the impact of Trim21 on keratinocyte proliferation. Real-Time PCR (RT-PCR) analysis of chemokines CCL3, CCL5, CCL20, CXCL9, CXCL11 and psoriasis-related cytokines IL-17, IL-22, IFN- $\gamma$  were examined to test the role of Trim21 in keratinocytes inflammation. Moreover, potential upstream upregulators of Trim21 were tested by western blot and RT-PCR.

**Results** Knockdown of Trim21 significantly decreased the proliferation of immortalized human keratinocyte HaCaT cells. Stable upregulation of Trim21 increased the proliferation of HaCaT cells. Furthermore, knockdown of Trim21 significantly reduced the production of CCL3 ( $P < 0.001$ ), CCL5 ( $P < 0.05$ ), and CXCL11 ( $P < 0.001$ ). Among psoriasis-related cytokines, only IFN- $\gamma$  could induce the upregulation of Trim21 in a dose-dependent and time-dependent manner.

**Conclusions** Our results suggest that inflammatory cytokine IFN- $\gamma$  contributed to the upregulation of Trim21 in psoriasis epidermis. This upregulated Trim21 further induce hyperproliferation and inflammation of keratinocytes, contributing to the pathogenesis of psoriasis.

## CS14-7

**MiRNA-17-92 promotes proliferation and chemokine production of keratinocytes: implication for the pathogenesis of psoriasis**

Sen Guo

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**Background** Aberrant proliferation of keratinocytes and the secretion of chemokines from keratinocytes contribute to many inflammatory skin diseases like psoriasis. MiRNA-17-92 (miR-17-92) is a miRNA cluster that regulates cell growth and immunity, but the role of miR-17-92 in keratinocytes and in skin diseases has not been well investigated. This study aimed to elucidate the role of miR-17-92 in keratinocyte biology as well as its expression profile in psoriasis.

**Methods** A plasmid for miR-17-92 overexpression was transfected into normal human keratinocytes, and then the ability of proliferation and chemokine production of keratinocytes as well as responsible target genes were examined. Moreover, the samples of psoriasis lesions were collected and used for analysis on aberrant miR-17-92 expression in psoriatic keratinocytes, of which the regulatory mechanism was also investigated by using cytokines-treated normal human keratinocytes.

**Results** MiR-17-92 promoted the proliferation and cell cycle progression of keratinocytes via suppressing CDKN2B. Furthermore, miR-17-92 facilitated the secretion of CXCL9 and CXCL10 from keratinocytes by inhibiting SOCS1, which enhanced the chemotaxis for T lymphocytes formed by keratinocytes. In addition, we detected increased expression of miR-17-92 in psoriatic lesions and the level of lesional miR-17-92 was positively correlated with the disease severity in psoriasis patients. At last, miR-17-92 was increased in keratinocytes by cytokines through the activation of STAT1 signaling pathway.

**Conclusions** Our findings demonstrate that cytokine-induced overexpression of miR-17-92 promotes the proliferation and the immune function of keratinocytes, and thus may contribute to psoriasis development. MiR-17-92 may be a potential therapeutic target for psoriasis.

CS14-8

**CD8 $\alpha\alpha$ +T cells contribute to psoriasis by producing pro-inflammatory cytokin**

Yang-Yang Zhang

*Department of Dermatology, Xijing Hospital, Fourth Military University***Background** To identify the phenotype of CD8+T cells and investigate its function in psoriatic patients.**Methods** We performed immunofluorescent staining to observe the phenotype of CD8+T cells in psoriatic lesions, including CD8 $\alpha$ , CD8 $\beta$ , CD3, CD56, CD11c, CD103, CD45RA, CCR7, Foxp3, CD25, CD122. Then these markers were also detected in circulating CD8+T cells of psoriatic patients by flow cytometry. Further, we performed co-culture of CD8+T cells with CD4+T cells to demonstrate its pro-inflammatory role in psoriatic patients. Finally, to provide more evidence, we detected the expression of pro-inflammatory cytokines in CD8+T cells, including IL-17A, IFN- $\gamma$  and TNF- $\alpha$ .**Results** CD8+T cells, predominantly the CD8 $\alpha\alpha$ + phenotype, infiltrated in psoriatic lesions. CD8 $\alpha\alpha$ +T cells expressed the tissue resident marker CD103 in psoriatic epidermis but not in dermis. In addition, these CD8 $\alpha\alpha$ +T cells were memory subsets by CD45RA-CCR7-. More importantly, unlike CD8 $\alpha\alpha$ +T cells in mice gut, CD8 $\alpha\alpha$ +T cells did not express Foxp3, CD25 and CD122 in psoriatic lesions. Further, we found CD8 $\alpha\alpha$ +T cells from psoriatic patients enhanced the function of CD4+T cells. In line with these results, psoriatic CD8 $\alpha\alpha$ +T cells produced elevated levels of pro-inflammatory cytokines than healthy controls, including IL-17A, IFN- $\gamma$  and TNF- $\alpha$ .**Conclusion** Our study suggested that CD8 $\alpha\alpha$ +T cells contribute to the development of psoriasis by producing pro-inflammatory cytokines.

CS14-9

**Acitretin Down-regulates the Number of MDSCs in the Treatment of Psoriasis Vulgaris**

Pan-Pan Liu

*Department of Dermatology, Xiangya Hospital, Central South University***Background** Monocytic myeloid-derived suppressor cells (M-MDSCs) were elevated in psoriatic patient peripheral blood with functionally impaired, and may contribute to the development of psoriasis. Acitretin considered to be used to inhibit proliferation and promote differentiation of keratinocytes in the treatment of psoriasis, but little is known about the role of acitretin to immune cells. The aim of this study was to investigate the mechanism of acitretin on M-MDSCs in psoriasis.**Methods** The concentration of M-MDSCs and the expression of PD-1/PD-L1 of bone marrow, spleen, peripheral blood, and skin lesions in imiquimod (IMQ)-induced mouse model of psoriasis and acitretin-treated IMQ-induced mouse model were measured by flow cytometry analyses. Acitretin treated splenic MDSCs *in vitro* and the proliferation of MDSCs was measured by CFSE assay.**Results** The concentration of M-MDSCs of bone marrow, spleen, peripheral blood, and skin lesions in imiquimod-induced mouse model was significantly higher than normal mouse. In imiquimod-induced mouse model, acitretin improved the skin phenotype and reduced epidermal thickness, and the PASI score, the concentration of M-MDSCs of spleen and peripheral blood, and the expression of PD-1/PD-L1 on splenic M-MDSCs were significantly decreased, whereas the concentration of M-MDSCs of skin lesions was increased when compared to control group. Furthermore, acitretin significantly inhibited the proliferation of M-MDSCs *in vitro*.**Conclusions** Abnormal activation of M-MDSCs plays a key role in the pathogenesis of psoriasis. Acitretin inhibited the proliferation of M-MDSCs in the treatment of psoriasis vulgaris.

## CS14-10

**Study on the interferential and regulative role of chemokine-like factor 1-C-terminal peptides in psoriasis**

Yi Zheng

*Beijing Chaoyang Hospital affiliated to Capital Medical University*

**Background** Psoriasis is a common chronic autoimmune skin disorder in which T cell infiltration plays a critical role in initiation and maintenance of psoriatic inflammation. Many chemokines participate during the course of T cell homing to skin. Chemokine-like factor 1 (CKLF1) is a new cytokine displaying remarkable chemotactic activities on neutrophils, monocytes and lymphocytes. To find out whether CKLF1 is involved in T cell recruitment and C19 has protective effect in psoriasis.

**Methods** In this study, CKLF1 expression in psoriatic lesions and peripheral blood lymphocytes was investigated by immunohistochemistry and flow cytometry. T cell chemotaxis of CKLF1 was also evaluated by chemotaxis assay. We also explored the roles of CKLF1-derived peptides C19, C27 in the pathogenesis of psoriasis.

**Results** Notably, CKLF1 expression increased significantly in lymphocytes infiltrating in psoriatic lesions and peripheral blood lymphocytes of psoriasis vulgaris patients. C19 could inhibit CD4+ T cells migration induced by endothelial cells. Moreover, the primary umbilical vein endothelial cells exhibited higher proliferation ratio under C27 stimulation and C19 could attenuated this effect. In addition, such effect of C27 was mirrored by imiquimod application in BALB/c mice that were intradermal injected with the two peptides. However, introduction of C27 peptide enhance the acanthosis and neutrophils and CD3+ T cells infiltration. This effect can be inhibited by C19 intervention.

**Conclusion** This study demonstrates CKLF1 may be involved in psoriasis by taking part in T lymphocytes infiltration and C19 may be an ideal peptide for the improvement of psoriasis.

## CS14-11

**HMGB1 inhibitor effectively alleviates psoriasis-like lesions and inflammatory cytokines in K14-VEGF transgenic mouse**

Li-Xin Fu

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**Background:** High mobility group box-1 (HMGB1), a pro-inflammatory cytokine, is closely associated with the pathogenesis of psoriasis. In our previous study, we explored the association of HMGB1 with psoriasis vulgaris (PV) firstly, and indicated that PV patients had increased the serum levels of HMGB1 and altered HMGB1 distribution in skin lesions. In this study, we investigated the therapeutic effects of anti-HMGB1 monoclonal antibody (mAb) in K14-vascular endothelial growth factor (VEGF) transgenic homozygous mice.

**Methods** We continuously injected anti-HMGB1 mAb or (PBS) i.p. once every two days for three times.

**Results** We found that anti-HMGB1 mAb could effectively ameliorate the clinical skin lesions. It was shown that histopathologic changes and improvements in K14-VEGF transgenic homozygous mice after three treatments. Moreover anti-HMGB1 mAb also decreased the number of the cellular infiltration of CD3+T cells, MPO+neutrophils, and CD11c+DCs, and down-regulated the expression of IL-6, TNF- $\alpha$ , IFN- $\gamma$  and IL-17 in psoriasis-like lesions of mice skin.

**Conclusion** Our data suggest that HMGB1 blockade might be a promising molecular target for the psoriasis therapy.

## CS15 Sexually Transmitted Diseases

### CS15-1

#### **Sexually transmitted viral diseases (genital herpes and human papilloma virus infection)**

Eun-So Lee

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Sexually transmitted diseases (STDs) are infections transmitted from sexual activity including vaginal, oral, and anal sex. The causes of STDs are bacteria, parasites, yeast, and viruses. There are more than 20 types of STDs. Venereology, which is concerned with the study and treatment of STDs, often is combined with dermatology. Therefore, dermatologists should be aware of STDs. Among dozens of STDs, I will discuss two STDs caused by virus, which is genital herpes and human papilloma virus infection.

1. Genital herpes: Genital herpes can be caused by two types of HSV: HSV-1 and HSV-2. Recurrent genital herpes are caused mostly by HSV-2, however, HSV-1 accounts for increased proportion of anogenital herpetic infection. Most genital herpes infections are transmitted by persons who are asymptomatic or unaware that they have the infection. Management of genital HSV emphasizes on the chronic nature of the disease. Moreover, persons with genital herpes need to be tested for HIV infection. Antiviral chemotherapy is the mainstay of management because it offers clinical benefits to most symptomatic patients. Systemic antiviral drugs can partially control the signs and symptoms of genital herpes when used to treat first clinical and recurrent episodes or when used as daily suppressive therapy. However, these drugs neither eradicate latent virus nor affect the risk, frequency, or severity of recurrences after the drug is discontinued. Three antiviral medications, acyclovir, valacyclovir, and famciclovir, provide clinical benefit for genital herpes as randomized trials have indicated. Clinical benefit of topical antiviral therapy is minimal and this use is discouraged.

2. Human papilloma virus infection: Among 100 types of human papillomavirus infection (HPV) identified, at least 40 of HPV can infect the genital area. Most HPV infections are asymptomatic or unrecognized and are self-limited, therefore, most sexually active persons become infected with HPV at least once in their lifetime. Oncogenic, high-risk HPV (e.g., HPV types 16 and 18) infection causes most cervical, penile, vulvar, vaginal, anal, and oropharyngeal cancers, whereas nononcogenic, low-risk HPV (e.g., HPV types 6 and 11) infection causes genital warts. Nononcogenic HPV types 6 or 11 cause 90% of anogenital warts, however, HPV types 16, 18, 31, 33, and 35 are also occasionally found in anogenital warts and usually as co-infections with HPV 6 or 11). These HPV infections can be associated with foci of high-grade squamous intraepithelial lesions, particularly in persons who have HIV infection.

In treatment of anogenital warts, the aim is removal of the wart and amelioration of symptoms, if present. If untreated, anogenital warts can resolve spontaneously, remain unchanged, or increase in size or number. Available therapies for anogenital warts might reduce, but probably do not eradicate, HPV infectivity.

There are several HPV vaccines: a bivalent vaccine (Cervarix) that prevents infection with HPV types 16 and 18, a quadrivalent vaccine (Gardasil) that prevents infection with HPV types 6, 11, 16, and 18, and a 9-valent vaccine that prevents infection with HPV types 6, 11, 16, and 18, 31, 33, 45, 52, and 58. The bivalent and quadrivalent vaccines offer protection against HPV types 16 and 18, which account for two thirds of all cervical cancers, whereas the quadrivalent HPV vaccine also protects against HPV types 6 and 11, which cause most of genital warts.

### CS15-2

#### **Neurosyphilis: A neglect and persistent challenging complicated disease**

Ping-Yu Zhou

*Shanghai Skin Disease Hospital*

Despite the incidence of syphilis has recently increased worldwide, yet the neurosyphilis is under evaluated particularly in developing countries by the evidence that the late, irreversible neurosyphilis is increasing. Although neurosyphilis is often referred to as a tertiary or late stage of *Treponema pallidum* (TP) infection, it is believed that

early stage syphilis is often associated with an invasion of the central nervous system (CNS) by the pathogen. Given the facts that the treatment and follow-up of neurosyphilis and syphilis without CNS involvement were different. The recommended first-line treatment for syphilis is benzathine penicillin G, and benzathine penicillin G failed to prevent neurosyphilis relapse; while the recommended treatment for neurologic syphilis is intravenous aqueous crystalline penicillin G potassium. Without a “test for cure,” syphilis requires monitoring by quantitative nontreponemal tests for serologic evaluation for treatment failure, for neurosyphilis, follow-up CSF examinations would be performed until CSF findings become normal. As we know the delayed diagnosis and treatment of neurosyphilis could finally lead to irreversible damage, which will cause life time dementia, bodily functions lost, ultimately leading to death. Therefore it is very important to put neurosyphilis in mind to minimize the delay diagnosis and treatment of neurosyphilis. Neurosyphilis remains a worthy target for biomedical and clinical research. There are still important unanswered questions about the organism, the pathogenesis, and appropriate management strategies.

### CS15-3

#### Early congenital syphilis

Hong-Shuai Wang, Jun Li

*Chinese Academy of Medical Sciences Peking Union Medical College Hospital*

A 4-month-old baby girl was admitted to our hospital with 1-month-period erythemas and scales on her limbs. Physical examination revealed multiple irregular-shaped erythemas on her extremities, buttock and vulva, and lamellar scales on both hands and feet (Panel A-B). She was otherwise healthy. Rapid plasma regain test (RPR) showed a titer of 1:256, treponema pallidum hemagglutination test was positive, and fluorescent treponemal antibody absorption test was positive. Early congenital syphilis was diagnosed, and the patient was treated with benzathine penicillin. The skin lesions relieved 1 month later and RPR titer decreased to 1:4 on the follow-up 3 months after antibiotic treatment. Syphilis is a sexually transmitted disease caused by *Treponema pallidum*, which can also be spread congenitally. Early congenital syphilis refers to patients whose clinical manifestations appear before the age of 2. The rash of congenital syphilis usually is oval and maculopapular but becomes copper-colored with desquamation mostly in the palms and soles.<sup>1</sup> The result of serum nontreponemal serologic titer of infant, fourfold higher than the mother's titer, is confirmatory for the diagnosis of congenital infection.<sup>2</sup> Infants and children aged  $\geq 1$  month who have reactive serologic tests for syphilis and confirmed or likely congenital syphilis should receive aqueous crystalline penicillin G.

### CS15-4

#### Characteristics and geographical distribution of HIV/AIDS among adults over 50 years old in Ruili City from 1989 to 2016

Si-Le Li, Zhou-Lin Li, Er-Da Zheng, Chen-Bo Wang, Bang Liu, Xia Peng, Hong Li

*Kunming Medical University*

**Background** The study aimed to assess the characteristics and geographical distribution of HIV/AIDS among adults over 50 years old in Ruili city from 1989 to 2016, in order to providing a theoretical basis for prevention and control of the crowd of HIV/AIDS in future.

**Methods** Data of cases for HIV/AIDS among adults over the age of 50 (including 50) in Ruili City Dehong State from 1989 to 2016 were retrieved from the National Comprehensive System for Prevention and Control of AIDS. Microsoft Excel 2007 was used for the related data entering and MapInfo 7.8 software was applied to make visualization of the epidemiologic map.

**Results** A total of 9326 HIV/AIDS cases were reported in Ruili city between 1989 and 2016, among them 587 cases were found among the age of 50 to 50 years above (6.3%). And cases of 405 males and 182 females were found in the elderly, the ratio for male to female was 2.24:1. The average age was the group from  $57.1 \pm 6.74$  years, and the age was mainly concentrated in the group of age 50-59 years, the lowly-educated, the married, farmers and the Han

Nationality. The number of newly reported cases had been on an upward trend since 2000. Besides, the route of transmission had changed from injection of drug to transmission of heterosexual. A spatial analysis on the distribution characteristics for the 260 people living in Ruili City was conducted. Before 2000, the cases were scattered distributed. By 2016, the prevailing trend of cases distribution was gathered to Mengmao Town as main center. Before 2000, there were cases of drug injection founded in only four townships of Mengmao, Nongdao, Wanding, and Huyu. And there were only cases of heterosexual transmission founded in Mengmao Town. Cases for caused by injecting drug and heterosexual transmission were mainly concentrated in the town of Mengmao Town, and other townships were scattered distributed by the end of 2016.

**Conclusions** The epidemic of HIV infection among People of age over 50 (including 50) in Ruili has been on an upward trend and has spread from urban centers to six townships in the city. Heterosexual transmission has become the main route of transmission in the Local areas. So, the targeted measures for HIV/AIDS prevention and control should be adopted according to the epidemiological characteristics of the elderly

### CS15-5

#### **Effects of 5-aminolevulinic acid photodynamic therapy for condylomata acuminata on local immunity**

Fang Xie, Hai-Sheng Yu, Dong Wang, Yan-Ming Li, Hai-Ying Wen, Jiang-Bo Du, Wei Ba, Xian Meng, Jie Yang, Heng-Jin Li, Cheng-Xin Li, Li-Guo Zhang, Hua Zhao, Xiang-Dong Fang

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**Background** 5-aminolevulinic acid photodynamic therapy (PDT) for condylomata acuminata is effective, safe and can also prevent recurrence of the disease. Currently, it is believed that PDT can induce immune responses during the course of treatment, but the mechanism is not completely understood. This study aimed to confirm the effect of PDT for condylomata acuminata on local immunity and to investigate the recruitment and significance of immune cells in lesional areas by immunohistochemistry staining at different time points after treatment.

**Methods** Biopsies were taken in twenty subjects with histologically proven condylomata acuminata at baseline and 4 hours later and 24 hours later after PDT. CD3, CD4, CD8, CD123 and CD1a infiltrating immune cells were evaluated by immunohistochemistry staining. Changes in mRNA levels of IFN- $\gamma$ , IFN- $\alpha$ , IFN- $\beta$ , ISG-15, Mx-2, TLR9 and IRF7 were analysed and revealed by real-time quantitative PCR analysis in 8 patients.

**Results** Compared to normal foreskin, tissue from condylomata acuminata lesions exhibited increased numbers of CD3+ and CD8+ cells, no significant difference in CD4+ cells or CD123+ pDCs. 24 hours after PDT, dense CD3+ T lymphocytes infiltrated and migrated to the superficial dermis in the lesions of condylomata acuminata patients. After PDT the number of CD4+ cells increased, accompanied by an increasing trend of CD123+ pDCs, the number of CD1a+ LCs in the epidermis gradually decreased, and the number of DCs in the epidermis gradually increased. The number, distribution, and morphology of CD8+ cells did not change significantly after PDT. The mRNA expression levels of IFN- $\gamma$ , IFN- $\alpha$ , IFN- $\beta$ , ISG-15, Mx-2, TLR9, and IRF7 showed an increasing trend. After PDT, compared to the patients with no significantly increased IFN- $\alpha$  and IFN- $\beta$  after a PDT session, patients with significant increases needed fewer sessions of PDT for treatment.

**Conclusions** After treatment, immunity is locally augmented in lesions. The clinical efficacy of PDT treatment for condylomata acuminata may be related to the increased levels of IFN- $\alpha$  and IFN- $\beta$  after treatment.

### CS15-6

#### **Blinding ocular syphilis in China: A retrospective cohort study**

Xin Gu, Ping-Yu Zhou

*Shanghai dermatological hospital*

**Background** The prompt diagnosis and proper treatment of ocular syphilis is fundamental to avoid long-term consequences. We identified patients presenting with syphilis to establish risk factors for ocular syphilis and

blindness and reviewed the features of blindness caused by ocular syphilis due to delayed diagnosis and treatment.

**Methods** We report risk factors for ocular syphilis among patients seen at the Shanghai Skin Disease Hospital from October 2009 to October 2017. We identify patients with ocular syphilis resulting in blindness and report the clinical characteristics, laboratory findings, follow-up results, and treatment effectiveness of these patients. For patients with syphilis related blindness we measured the change in visual acuity as the main outcome measure.

**Results** A total of 8310 new cases of syphilis were seen during the study period of which 213 had ocular disease and 50 had blindness due to syphilis. Age and higher RPR titers were associated with ocular involvement but there was no association with HIV status. Fifty patients had at least one eye affected by ocular syphilis which met the WHO definition of blindness (67 eyes with blindness) prior to treatment for syphilis. The most common ocular diagnosis was optic atrophy (27 of 50 patients). The majority of cases of blinding syphilis were associated with definite ( $n=42$ ) or presumptive ( $n=7$ ) neurosyphilis. At the end of follow-up vision had improved in 24 of 67 eyes (35.8%), though 9 eyes still met the definition of blindness. The remaining 43 eyes did not improve after treatment and thus 52 eyes were finally classified as permanent vision loss. Treatment of uveitis was associated with the most improvement in visual acuity, whilst patients with optic atrophy had the worst outcomes.

**Conclusions** Our data demonstrate ocular syphilis is an uncommon but important manifestation of syphilis which may result in blindness. Treatment outcomes for ocular syphilis are poor if detected late; early recognition and diagnosis is vital to avoid permanent visual loss.

## CS15-7

### Levels of NF-L and pNF-H in cerebrospinal fluid and blood of patients with neurosyphilis

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*Beijing Ditan Hospital Capital Medical University*

**Background** This study aimed to detect levels of neuronal damage markers (NF-L and pNF-H) in cerebrospinal fluid (CSF) and blood of patients with neurosyphilis and explore their clinical significance and related factors.

**Methods** Levels of NF-L and pNF-H in CSF and blood among all 92 patients before anti-neurosyphilis treatment were detected by ELISA, Comparison of levels of NF-L and pNF-H were done among 25 patients before and after anti-neurosyphilis treatment.

**Results** (1) Level of blood NF-L in patients with symptomatic neurosyphilis, asymptomatic neurosyphilis (ANS) and syphilis was 207.89 (146.70, 1897.86) pg/ml, 188.53 (91.41, 3434.74) pg/ml and 204.1 (90.9, 594.91) pg/ml, respectively, and symptomatic neurosyphilis group was higher than ANS group ( $P < 0.001$ ); level of CSF NF-L was 5806.25 (409.25, 41616.68) pg/ml, 217.59 (33.48, 2020.43) pg/ml and 266.32 (117.83, 679.43) pg/ml, respectively, and symptomatic neurosyphilis group was higher than ANS group ( $P < 0.001$ ) and syphilis group ( $P < 0.001$ ); level of CSF pNF-H were 986.46 (117.26, 9018.81) pg/ml, 43 (0, 196.53) pg/ml and 48.71 (0, 199.05) pg/ml, respectively, and symptomatic neurosyphilis group was higher than ANS group ( $P < 0.001$ ) and syphilis group ( $P < 0.001$ ). (2) CSF NF-L level was correlated with blood NF-L level ( $r = 0.257$ ,  $P = 0.018$ ), syphilis stage ( $r = 0.564$ ,  $P < 0.001$ ), CSF RPR titer ( $r = 0.540$ ,  $P < 0.001$ ), sCD163 ( $r = 0.803$ ,  $P < 0.001$ ), and CD14 ( $r = 0.802$ ,  $P < 0.001$ ). (3) CSF pNF-H level was correlated with blood pNF-H level ( $r = 0.387$ ,  $P < 0.001$ ), syphilis stage ( $r = 0.593$ ,  $P < 0.001$ ), CSF RPR titer ( $r = 0.514$ ,  $P < 0.001$ ), sCD163 ( $r = 0.662$ ,  $P < 0.001$ ), CD14 ( $r = 0.761$ ,  $P < 0.001$ ). (4) After neurosyphilis treatment, level of CSF NF-L ( $P = 0.006$ ) and CSF pNF-H ( $P = 0.007$ ) both decreased.

**Conclusions** (1) CSF NF-L and pNF-H levels increased significantly among symptomatic neurosyphilis patients, which indicates more severe neurological damage of these patients than that in ANS patients and non neurosyphilis patients, which may be useful for the diagnosis and evaluation of symptomatic neurosyphilis. (2) Levels of CSF NF-L and CSF pNF-H were both correlated with syphilis stage, serum RPR titer and CSF RPR titer, they increased with the progress of syphilis and the rise of serum and CSF RPR titer. (3) CSF NF-L and CSF pNF-H levels were significantly decreased after anti-neurosyphilis treatment, which will be possible as candidates of biological marker to evaluate effect of anti-neurosyphilis in symptomatic neurosyphilis patients.

## CS15-8

**Strong immunogenicity of *Neisseria gonorrhoeae* MtrE surface expressed Loop 2 fusion protein *in vitro***

Rui Han, Si-Yuan Sun, Hao Cheng, Stijn van der Veen

Zhejiang University School of Medicine, Sir Run Run Shaw Hospital (SRRSH)

**Background** The human-specific bacterial pathogen *Neisseria gonorrhoeae* (*N. gonorrhoeae*) poses a threat for healthcare due to the rise in multidrug resistance. The development of an effective vaccine has remained elusive due to the antigenic and phase variability of surface expressed proteins. To identify novel conserved surface proteins as vaccine candidates, an *in silico* approach was used to predict potential surface exposed antigens, which were subsequently analyzed for dendritic cells stimulation and T-helper (Th) cells polarization to evaluate their immunogenicity.

**Methods** The Loop 2 was expressed in fusion protein with IMX315, which contains adjuvant activity. MtrE and both Loop 2-containing fusion protein were purified and used to stimulate mouse bone marrow derived dendritic cells. Mouse Bone marrow derived dendritic cells (BMDC) were stimulated followed by FACS analysis. Naïve T cells were isolated from mouse splenocytes and co-cultured with stimulated DC, and then the supernatants were collected for ELISA assay.

**Results** MtrE was identified as one of the most conserved proteins. MtrE contains a 13-amino acid surface exposed loop (Loop 2) that could be exploited for vaccine development. The Loop 2 fusion protein increased CD80, CD86, and MHCII expression of DC, and the production of interferon- $\gamma$  and TNF $\alpha$  by naïve T cells significantly.

**Conclusions** Current study suggested Loop 2-IMX315 fusion protein promotes maturation and antigen presenting function of DC remarkably and elicits strong Th1 polarization. The Loop 2-IMX315 fusion protein is a promising novel conserved antigen candidate for vaccine development against *N. gonorrhoeae*.

## CS15-9

**Regulatory role of estradiol to IL-36-JAK-STAT through REA/HDACs in pathogenesis mechanism of asymptomatic gonorrhoea**

Rong-Yi Chen, Shuang Liu, Fang Zhang, Hui-Zhi Yang, Zhi-Hua Wu

Affiliated Hospital of Guangdong Medical University

**Background** Women with asymptomatic gonorrhoea (AG) contribute to the transmission of gonorrhoea and HIV, causing infertility and endangering public health. Our previous studies have confirmed that estradiol (E2) recruits REA/HDACs complex to inhibit mucosal immunity. E2 is one of the major factors contributing to gonococcus infection in mice. IL-36 is a new cytokine with functions of proinflammatory and E2 treatment can down-regulate IL-36 expression. Based on these findings, we hypothesize that E2 recruiting REA (recruit repressor of estrogen receptor activity)/HDACs complex to inhibit IL-36-JAK-STAT pathway and mucosal immunity and cause AG.

**Methods** In this study, we use polymorphonuclear leukocytes (PMNs) challenged by *Neisseria gonorrhoeae* (*N. gonorrhoeae*) and E2 *in vitro*, to investigate the regulatory role of estradiol to IL-36-JAK-STAT through REA/HDACs in pathogenesis mechanism of gonorrhoea. The expression of il-1 $\beta$ , il-6, il-8, il-36 $\beta$ , Tnf- $\alpha$  mRNA were detected by Realtime PCR, The phosphorylation of Jak3, Stat2, Akt were detected by Western blot. Using coimmunoprecipitation assays, we found that E2 Inhibits IL-36 Transcription by recruiting the ERA/REA Complex when gonococcal infection.

**Results** The expression of il-1 $\beta$ , il-6, il-8, il-36 $\beta$ , Tnf- $\alpha$  were upregulated significantly PMNs with *Neisseria gonorrhoeae* challenged in 6h, whereas those cytokines were downregulated in PMNs with E2 treatment. Using coimmunoprecipitation assays, we found that anti-ERA Ab did not pull down REA in the absence of E2. In contrast, anti-ERA Ab pulled down REA in the presence of E2. These results demonstrate that E2 upregulates REA expression and recruits REA via ERA to the EREs, thus inhibiting il-1 $\beta$ , il-6, il-8, il-36 $\beta$ , Tnf- $\alpha$  expression and the phosphorylation of Jak3, Stat2, Akt.

**Conclusions** The phenomenon that major gonococcal infections in female, are asymptomatic, our research provided

direct evidence that E2 inhibit IL-36-JAK-STAT pathway and plays an important regulatory role in the interaction of PMNs and *N. gonorrhoeae*, which may contribute to women's asymptomatic gonococcal infection.

### CS15-10

#### **Tea polyphenols inhibits cell growth and induces apoptosis on HPV16 subgenes immortalized human cervical epithelial cells**

Quan Chen, Zi-Yin Mo, Hua-Ping Li, Ri-Dong Yang, Hui-Lan Zhu

*Guangzhou Institute of Dermatology*

**Background** This study aimed to explore the effect of tea polyphenols (TP) on HPV16 Subgenes Immortalized Human Cervical Epithelial Cells (H8 cells).

**Methods** After 24, 36, and 48 hours of incubating H8 cells with different concentrations of tea polyphenols, cell proliferation was detected by CCK-8 assay. After 24 hours of incubation, H8 cells were investigated for apoptosis and cell cycle by flow cytometry.

**Results** TP inhibited H8 cells proliferation in a concentration-dependent manner, while the concentration of 12.5ug/ml of TP can inhibits H8 cells proliferation in a time-dependent manner. After incubated with different concentrations of TP for 24, 36 and 48 hours, the apoptosis rate of H8 cells was increased. Compared with the control group, the proportion of cells in G1 phase ( $55.960\pm 0.72\%$ ,  $54.120\pm 3.201\%$ ,  $65.300\pm 1.51\%$ ) was increased after treatment with TP at a concentration of 6.25, 12.5, 25ug/ml, G2 phase ( $3.170\pm 1.821\%$ ,  $4.940\pm 1.46\%$ ,  $4.653\pm 4.263\%$ ) was decreased after treatment with TP.

**Conclusions** The cell proliferation was inhibited. The apoptosis and the cell cycle arrest were induced by TP on H8 cells.

### *CS16 Therapies*

#### CS16-1

#### **Treatment of focal infection in several inflammatory skin diseases**

Toshiyuki Yamamoto

*Fukushima Medical University*

Several inflammatory skin diseases are developed or worsened after upper respiratory tract infection, tonsillitis, odontogenic infection, and so on. Among them, palmoplantar pustulosis is most closely related to focal infection, and cutaneous lesions and even associated joint manifestations are dramatically improved by tonsillectomy or dental caries treatment.

Palmoplantar pustulosis is sometimes confused with palmoplantar psoriasis; however, psoriasis is, except for guttate-type, not improved by tonsillectomy. In addition, tonsillectomy occasionally results in great success in the treatment of IgA vasculitis, urticaria, erythema nodosum, and nummular eczema.

In Japan, tonsillectomy and odontogenic treatment are positively carried out. In this talk, I introduce treatment of focal infection performed in Japan and would like to ask the current approach in China and Korea.

CS16-2

**TWEAK/Fn14 signals mediate burn wound repair**

Yue-Min Xia

*The Second Affiliated Hospital of Xi'an Jiaotong University*

**Background** Tumor necrosis factor-like weak inducer of apoptosis (TWEAK) acts by engaging with fibroblast growth factor inducible 14 (Fn14) to regulate inflammatory responses, fibrosis, and tissue remodeling, which are central in the repair processes of wounds. This study aimed to explore the potential role of the TWEAK/Fn14 pathway in the healing of cutaneous burn wounds.

**Methods** Third-degree burns were introduced in the wild-type and Fn14-deficient BALB/c mice, followed by evaluation of wound areas and histologic changes. The downstream cytokines including growth factors were also examined in lesional skin. Moreover, human dermal microvascular endothelial cells (DMECs) and dermal fibroblasts were analyzed in vitro upon TWEAK stimulation.

**Results** The healing of burn wounds was delayed in Fn14-deficient mice and was accompanied by the suppression of inflammatory responses, growth factor production, and extracellular matrix synthesis. Moreover, TWEAK/Fn14 activation enhanced the migration and cytokine production of both DMECs and dermal fibroblasts, as well as myofibroblastic differentiation of dermal fibroblasts. Interestingly, topical application of TWEAK accelerated the healing of burn wounds in the murine model.

**Conclusion** TWEAK/Fn14 signals mediate the healing of burn wounds, possibly involving TWEAK regulation of the function of resident cells.

CS16-3

**Low-dose thalidomide treatment for a generalized cutaneous Rosai-Dorfman disease**

Jia-Yi Ying

*Fudan University Affiliated Huashan Hospital*

Rosai-Dorfman disease (RDD), also called sinus histiocytosis with massive lymphadenopathy (SHML), is a benign proliferative disorder of histiocytes, firstly recognized as a distinct entity by Rosai and Dorfman in 1969. Approximately 43% of RDD cases have associated extranodal involvement, with skin being the most affected area (11%). Cutaneous Rosai-Dorfman disease (cRDD) without lymph node involvement is rare, accounting for only 3% of the reported RDD cases. We report a rare cRDD case of generalized rashes in both cutaneous and subcutaneous areas. Furthermore, on histopathology examination, we found Matrix metalloproteinase (MMP)-7 staining positive plasmacytes might help perivascular RDD cells invade vascular walls which led to a relatively aggressive clinical process. This case revealed a relatively good response of cRDD to oral thalidomide of 150 mg/d, which was much lower than formerly reported (300 mg/d).

CS16-4

**Lichen aureus with hands and feet involvement responding well to tripterygium glycosides**

Jing Sun

*Peking University People's Hospital*

A 37-year-old man presented with a 3-year history of multiple rust-brown macules and patches on his both hands and feet. Based on clinical, histopathological features and laboratory tests, a diagnosis of lichen aureus was established. After treated with oral tripterygium glycosides (TG) tablets 20 mg three times per day in our hospital, the patient was satisfied with the treatment outcome.

## CS16-5

**Successful treatment of infliximab in a patient with Reiter's syndrome: a case report**

Xing-Xiao Lin

*Fourth Military Medical University Xijing Dermatology Hospital***Background** This study aimed to evaluate the therapeutic effect of infliximab in a patient with Reiter's syndrome.**Methods** A 27-year-old male patient who complained of red plaques and arthralgia for 9 years, coupled with increased secretion of urethra was referred to our hospital. The lesion first showed on his abdomen and balanus without pain 9 years ago. In the meanwhile, he suffered from a painful and swelling left knee and waist joint. Soon after, asymptomatic secretion of urethra was noticed. Physical examination revealed multiple erythemas on his trunk, arms and legs. The conjunctiva of his eyes was congested. He had a deformity of the left fingers. The lesion biopsy was performed and indicated psoriasis. HLA-B27 was positive. The STD lab test excluded sexual transmitted diseases. According to the manifestation and lab findings, Reiter's syndrome was diagnosed. Given his clinical condition and progression repeatedly, infliximab was prescribed. The first infusion containing a dose of 5 mg/kg and repeated 2 and 6 weeks later, and subsequently every 8 weeks. Now he has finished 5 courses of treatment.**Results** The patient's joint symptoms, erythema, urethritis relieved significantly after the second infusion. Now he has finished 5 courses of treatment.**Conclusion** Infliximab is an effective treatment for Reiter's syndrome.

## CS16-6

**Febrile ulceronecrotic Mucha-Habermann disease in an 11-year-old boy responding to lymphoplasmapheresis and methotrexate**

Ben Wang

*Central South University Xiangya Hospital***Background** Febrile ulceronecrotic Mucha-Habermann disease (FUMHD) is a rare fulminant variant of pityriasis lichenoides et varioliformis acuta (PLEVA) characterized by a rapidly progressive course with predominant ulceronecrotic lesions associated with fever and systemic manifestations. The case presentation is aim to provide some optional methods for treatment.**Methods** Here we report the case of an 11-year-old boy with FUMHD in China.**Results** The patient presented with large areas of ulcerative and necrotic lesions, high fever and some systemic symptoms of sepsis. The extremely horrible lesions spread all over the body, involving the face, trunk, limbs and flexures. A diagnosis of FUMHD was made based on clinical and histological features. The patient was treated with twice lymphoplasmapheresis treatments, potent antibiotics, high-dose methotrexate and low-dose glucocorticoids, as well as topical antibacterial cream and biological dressing. The skin lesions responded extremely well to lymphoplasmapheresis and methotrexate, with almost complete healing after 48 days.**Conclusions** Lymphoplasmapheresis is a new effective method for FUMHD treatment and methotrexate is still classic treatment for FUMHD. Our case could provide some new thoughts for the immune skin diseases.

## CS16-7

**Clinical efficacy and safety of using Minocycline in the treatment of unstable vitiligo**

Jin Wang

*Chengdu Second People Hospital***Background** This study aimed to observe the clinical efficacy and evaluate the safety of using minocycline in the treatment of non-segmental vitiligo.

**Methods** A total of 48 patients with non-segmental vitiligo were divided randomly into two groups. The combination therapy group (23 patients) were treated with minocycline capsule, compound glycyrrhizin capsule in oral administration and 308-nm excimer light local irradiation, and conventional therapy group (25 patients) were treated with compound glycyrrhizin capsule in oral administration and 308-nm excimer light local irradiation. Both treatments were given for 24 consecutive weeks, and follow-up 6 months after completion of treatment. Then, Mean Vitiligo Area Scoring Index (VASI), repigmentation rate as well as Mean Vitiligo Disease Activity Score (VIDA) were used to comparatively assess the tested patients before and after the treatment in the form of photos.

**Results** Both groups showed a significant decline in mean VASI, mean VIDA and a obvious increase in repigmentation rate. The difference between the mean VASI and repigmentation rate in the two groups is statistically significant ( $P < 0.05$ ). However, mean VIDA scores was not statistically significant ( $P > 0.05$ ) at the end of treatment period.

**Conclusions** The combination therapy with minocycline reduced the mean VASI and increased the repigmentation rate of patients with unstable vitiligo. What's more, it was safe, effective and had a low adverse reaction. However, the combination therapy with minocycline failed to inhibit disease progression.

## CS16-8

### Successful treatment of SAPHO syndrome with thalidomide: a case report

Qian-Nan Xu

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**Background** SAPHO (synovitis, acne, pustulosis, hyperostosis, and osteitis) syndrome defines an association of inflammatory cutaneous disorders with osteoarticular manifestations and represents a clinical and therapeutic challenge.

**Methods** A 19-year old male with acne conglobata and a diffuse involvement of the anterior chest wall and sacroiliac joints. The patient was treated with nonsteroidal anti-inflammatory drugs and corticosteroids. But the patient still stated persistent pain in the lower limb and consistent acne explosion. We then treated the patient with thalidomide.

**Results** After 6 months' treatment the patient's skin got better and the patient felt the pain in the lower limb is alleviated.

**Conclusion** Thalidomide might be another potential drug to use in the treatment of SAPHO syndrome.

## CS16-9

### Livedoid vasculopathy: clinical features and treatment as experienced in 24 Chinese patients

Sui-Ying Feng

*Chinese Academy of Medical Sciences Dermatology Hospital*

**Background** Livedo vasculopathy (LV) is a chronic cutaneous disorder characterized by recurrent, painful ulceration ending in stellate scars.

**Methods** We have conducted a retrospective study of clinical features and treatment response of LV in 24 Chinese patients.

**Results** LV occurred more frequently in women (male: female ratio=1:3). The peak age at onset of disease ranged from 14 to 20 years, younger than previously published data. 87.5% of the patients (21/24) showed significant summer exacerbation with ulcer formation. Out of 24 patients tested, 14 (14/24, 58%) had positive antiphospholipid antibody. Seven out of 13 patients were tested to be hypersensitive to multivalent insect antigens. Combinative anti-inflammatory therapy with steroids and tetracycline plus antiplatelet / profibrinolytic drugs promote quick healing of ulcer and reduce recurrence. The younger age at disease presentation and significant summer exacerbation are two novel clinical features observed in this study.

**Conclusions** These findings suggest that apart from procoagulation other risk factors may contribute significantly to the pathogenesis of LV. Although antiplatelet / profibrinolytic drugs are deemed as a first line therapy for LV,

anti-inflammatory medications such as steroids and tetracycline, from our experiences, are indispensable, especially for acute, ulcerative stage of disease.

## CS16-10

### **Propranolol as an antiangiogenic agent for the treatment of Parkes-Weber syndrome**

Jian-Yun Lu

*Central South University Xiangya Third Hospital*

Parkes-Weber syndrome (PWS) is a rare arteriovenous malformation (AVM) characterized by multiple arteriovenous fistulae and bony and soft-tissue hypertrophy involving one side of the extremity in general. The prognosis of PWS is poor due to high flow from extensive arteriovenous fistulae in the effected limb. Propranolol is a non-selective blocker of the  $\beta$ -adrenergic receptor that has been used for treatment of infantile hemangiomas. The vasoconstrictive and anti-angiogenic effects of propranolol led us to explore its potential applications in other vascular malformations, such as PWS. We here report on a 19-year-old female with a diagnosis of PWS presenting with a large skin lesion underlying AVMs and increase in girth of her right lower limb. The patient was treated by oral propranolol for 5 months and the outgrowth of the lesion had nearly fully regressed. The activation profiles of various kinases involving mitogen-activated protein kinases (MAPK) pathway were also investigated. We found PI3K, ERK, AKT and JNK were aberrantly activated in the ectatic blood vessels in the lesion sites. We concluded that oral propranolol can be a new management option for PWS, and MAPK signaling pathway contributes to the progression of PWS.

## CS17 Miscellaneous

### CS17-1

#### **Cutaneous extranodal NK cell lymphomas in Korea**

Mi Woo Lee

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Extranodal natural killer/T-cell lymphoma (ENKTL) is a distinct entity according to the World Health Organization. About 60% to 90% of patients with ENKTL present with nasal obstruction, sinusitis, and epistaxis caused by a destructive mass in the midline facial tissues. However, some of ENKTL presents primarily in extranasal sites (eg, skin, intestine). Extranodal ENKTL was first described in 1992 by both Chan et al. and Kern et al. This entity shows many morphologic, immunophenotypic and genotypic similarities to nasal ENKTL. Depending on the primary site of involvement, cutaneous ENKTL can be divided into 2 distinct subsets: (1) primary cutaneous ENKTL that initially presents in the skin, or (2) nasal ENKTL accompanied by secondary spread to the skin. We evaluated the clinical features, histopathologic features and prognosis of cutaneous ENKTL cases in our institution. There were no significant differences in terms of the clinical features of the cutaneous lesions between primary and secondary involvement, except the extent of these lesions. Although statistical significance was not demonstrated, nasal ENKTL with cutaneous involvement was more likely to present with generalized skin lesions than primary cutaneous ENKTL. The most common clinical manifestations of cutaneous ENKTL include solitary or multiple subcutaneous nodules and cellulitis or abscess-like lesions on extremities. The clinical morphology of cutaneous ENKTL is varied and additional feature includes ulceration, patches, and facial swelling. Cutaneous ENKTL shows a broad spectrum of histopathologic findings, characterized by tumor cells with angiodestructive and panniculitis-like patterns. Vasculitis-like infiltration of atypical lymphoid cells, epidermotropism and hemophagocytosis are other histopathologic findings of cutaneous ENKTL. In some cases, the diagnosis of cutaneous ENKTL is difficult to make when biopsy specimens show subtle perivascular infiltration of atypical lymphoid cells without remarkable angiodestructive and panniculitis-like patterns. There is a histopathologic spectrum of cutaneous ENKTL that is dependent on clinical morphology. The density of tumor cells and depth of cellular infiltration characterize the clinical morphology of cutaneous ENKTL. Although the clinicopathological features were similar regardless of two

groups, survival outcomes and prognostic factors differed depending on the primary tumor site of cutaneous ENKTL. Primary cutaneous ENKTL demonstrated a less aggressive clinical course and better survival outcomes.

### CS17-2

#### **Transcription factor and aberrant epigenetic modifications in lupus T cells**

Ming Zhao

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Systemic lupus erythematosus (SLE) is an autoimmune disease with multi-system and multi-organ damage of body seriously harmful to human health. The genetic factors, hormone and environmental factors contribute to the pathogenesis of SLE. Our previous studies have identified the aberrant epigenetic modifications such as DNA hypomethylation and histone hyper-acetylation in CD4<sup>+</sup> T cells of SLE, which lead to overexpression of autoimmune related genes and the self-reactivation of T cells. However, the mechanism of aberrant epigenetic modifications still remains unclear. Transcription factors (TFs) play an important role in regulating genes transcription. And TFs can mediate epigenetic modifications through recruiting epigenetic modifiers. In our study, we focused on the role and mechanism of TF RFX1 in regulating the aberrant epigenetic modifications in lupus T cells. First, we found that RFX1 expression was down-regulated and IL17A expression was enhanced in SLE CD4<sup>+</sup> T cells compared with normal controls. RFX1 expression levels were negatively correlated with IL17A levels in SLE patients. Knockdown of RFX1 in normal CD4<sup>+</sup> T cells increased the expression of IL17A, in contrast, overexpression of RFX1 in SLE CD4<sup>+</sup> T cells repressed the expression of IL17A. The bioinformatic analysis showed that the promoter of IL17A contains RFX1 binding sites. The luciferase reporter analysis, ChIP-qPCR and EMSA experiments confirmed that RFX1 inhibited IL17A transcription through binding the promoter of IL17A genes. Next, we found that RFX1 can recruit epigenetic modifiers HDAC1, SUV39H1 and DNMT1 to the promoter region of IL17A. Knockdown of RFX1 can up-regulate the histone H3 acetylation level, and down-regulate H3K9 tri-methylation level and DNA methylation level of IL17A gene. In contrast, overexpression of RFX1 can decrease the histone H3 acetylation, and increase H3K9 tri-methylation level and DNA methylation level of IL17A gene. In addition, we found that RFX1 expression was down-regulated significantly during Th17 cell differentiation. IL-6, a key cytokine inducing Th17 differentiation, can repress RFX1 expression through increasing the phosphorylated STAT3 protein. Last, we constructed the CD4<sup>+</sup> T cells conditional knockout mice (RFX1<sup>f/f-cre</sup>) and found that RFX1 defect in CD4<sup>+</sup> T cells of RFX1<sup>f/f-cre</sup> mice can promote the induced differentiation of Th17 cells and aggravate the pathological changes of EAE model and pristane-induced lupus model. In summary, we demonstrated the RFX1 can inhibit IL17A expression under the epigenetic mechanisms and the down-regulation of RFX1 is one of the important mechanisms that cause the increased differentiation of Th17 cells and IL-17 levels in SLE patients. Our findings established a foundation for clarifying the epigenetic mechanisms in the pathogenesis of SLE and provided a novel therapeutic target for SLE.

### CS17-3

#### **Clinical experience of the treatment using negative pressure wound therapy (NPWT): a study of 34 cases**

Akihito Maki, Hiroshi Kato, Ai Horio, Motoki Nakamura, Akimiti Morita

*Nagoya City University*

**Background** Negative Pressure Wound Therapy is one of the wound management techniques, which increases blood flow to the wound area and draws out excess fluid from the wound. The infection and air leak are the main problems which we discontinued this technique.

**Methods** Totally 34 patients (23 males and 11 females, average age: 60.9 years) was recruited for this study. NPWT was performed for them for a wide variety of wound (skin ulcer, burn, diabetic ulcer and surgical traumatic skin-defect). The relationships between treatment continuation of NPWT and the parameters such as site, levels of albumin/hemoglobin, and presence of diabetes/infection were analyzed.

**Results** In conclusion, many cases using NPWT for buttocks tended to be interrupted by infection and air leak ( $P < 0.001$  Log-rank test). Patients with low level of albumin or hemoglobin could not continue NPWT for infection ( $P = 0.055, 0.074$ , Log-rank test).

**Conclusion** These findings suggested that maintaining NPWT is difficult in wounds surrounded by irregular surface and that nutritional management before starting NPWT is important.

CS17-4

### **Dermatologic disorders in patients with multiple myeloma: a retrospective cohort study from Korean experience**

Yu Ri Woo, Seung Hwan Baek, Yu Jin Jung, Jong Sic Kim, Ji Hong Ihm, Miri Kim, Hyun Jeong Park

*Yeouido St. Mary's Hospital, College of Medicine, the Catholic University of Korea*

**Background** Multiple myeloma (MM) is a common hematologic malignancy characterized by the presence of the clonal proliferation of tumor cells. Studies on various dermatologic disorders in Asian patients with MM have not been conducted. This study aimed to analyze the prevalences, characteristics, overall survivals, and risk factors of various dermatologic disorders in patients with MM.

**Methods** A retrospective cohort study using medical records from January 1, 1998, to December 31, 2017, in Korean patients with MM was conducted. Of the 1438 patients with MM, 354 patients were identified to have one or more dermatologic disorders and further evaluated.

**Results** Among various dermatologic disorders, the herpes zoster infection was revealed to be the most common dermatologic disorders in Korean patients with MM. The development of herpes zoster was found to be a good prognostic factor for OS (hazard ratio, 0.62; 95% CI, 0.44-0.86). The occurrence of plasmacytoma was found to be a poor prognostic factor for OS (hazard ratio, 3.13; 95% CI, 1.76-5.56).

**Conclusions** The development of some dermatologic disorders heralds the prognostic importance in patients with MM. A better understanding of prevalences, clinical characteristics, and risk factors of various dermatologic disorders in patients with MM might help to identify the clinical course and prognosis of the disease and to provide the proper management for the patients.

CS17-5

### **First diagnosed nodal marginal zone lymphoma in excessive insect bite reaction: a case report**

Si Jiang

*Zhongnan Hospital of Wuhan University*

**Background** This study aimed to explore the relationship between excessive insect bite reaction and hematological malignancy.

**Methods** A case report of 48-year-old male patient was closely monitored along with the thorough review of literature. The patient was first diagnosed for the skin lesions, recurring rash accompanied with pruritus over trunk and extremities for more than one year, severe in later six months; through physical examination, skin biopsy, lymph node biopsy, immunohistochemistry and genetic testing, diagnosed eventually with Nodal Marginal Zone Lymphoma (NMZL) with excessive insect bite reaction.

**Results** Hematologic malignancies must be screened and guarded in cases of excessive insect bite reactions.

**Conclusions** The pathogenesis of hematological malignancies with excessive insect bite is still unclear; however excessive insect bite reaction can be an early sign of a hematologic malignancy for which clinicians need to be very cautious.

## CS17-6

**RNA-seq analysis reveals unique transcriptome signatures in dermatomyositis**

Ke Xue

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**Background** This study aimed to investigate the transcriptional difference between dermatomyositis with distinct autoantibodies.

**Methods** We performed high throughput sequencing technologies in 15 dermatomyositis. These dermatomyositis patients were segregated into three subsets based on distinct autoantibodies present in their sera. Including five patients that anti-melanoma differentiation associated gene 5 antibody (MDA-5) positive with interstitial lung disease (ILD), and five patients that anti-transcriptional intermediary factor 1- $\gamma$  (TIF1- $\gamma$ ) antibody positive with tumor, and five patients that both two antibodies are negative with neither interstitial lung disease nor tumor. We extract RNA from the peripheral blood mononuclear cells of these patients. BGI-seq 500 RS was using for sequencing.

**Results** Gene ontology analysis and pathway enrichment analysis reveal cytokine activity, receptor binding and protein binding molecular function were specifically dysregulated in MDA5 positive patients. Glycosaminoglycan binding and antioxidant activity were specifically dysregulated in TIF1- $\gamma$  positive patients. Both patients' subsets were compared with no antibody positive patients. We then focus on the immune pathway between three subsets. And we found NETosis pathway was specifically dysregulated in TIF1- $\gamma$  positive patients.

**Conclusion** These different transcriptome information may be useful for clinical evaluation and therapeutics of dermatomyositis in the future.

## CS17-7

**A rare case of eosinophilic granuloma associated with adult xanthogranuloma**

Li-Yun Zheng

*First Affiliated Hospital of Anhui Medical University*

Histiocytosis is a rare disease consisting of a group of entities with varying manifestations. Eosinophilic granuloma (EG) and adult xanthogranuloma (AXG) belong to this group, and different categories include Langerhans cell and non-Langerhans cell histiocytosis. We report the case of a 47-year-old female with lesions in both middle ears who complained of hearing problems and headaches. Multiple CT images, histological features, and immunohistochemical results supported the diagnosis of EG finally. General examination of all vital systems showed normal results. Two operations and multiple radiotherapy sessions were performed consecutively. She is now being followed on an ambulant basis, and there has been no recurrence. However the patient exhibited associated adult xanthogranuloma arising on her orbital rim and neck with bilateral superficial upper eyelid lesions and painless enlargements after 3 years. The clinical presentation, histological features and immunohistochemical results supported this diagnosis. She was recommended to undergo surgical excision, but she instead chose conservative treatment with topical steroid cream once a day. She is now being followed, and there have been no changes to date. To the best of our knowledge, this is the first case of EG associated with adult xanthogranuloma. Whether there is a correlation between the pathogenesis of the two diseases is uncertain; further study is necessary.

## CS17-8

**Application of photodynamic therapy in some refractory skin diseases**

Shuang Zhao

*Central South University Xiangya Hospital*

**Background** The incidence of skin diseases is increasing with the change of the environment and some other factors

in recent years. Most of the refractory skin diseases are difficult to treat due to recurrent attacks, especially those located at the privileged sites such as vulva. While some rare diseases or ubiquitous diseases are intractable because of the indistinct boundary or special location. For part of the refractory skin diseases, we treated with photodynamic therapy combined with surgery and laser treatment.

**Methods** (1) routinely traced the boundaries of the tumor expanded by 3 mm, and removed the tumor completely with surgical blades to reticular layer of corium, full hemostasis by electrocoagulation. (2) photodynamic therapy immediately after the operation: according to the area of skin lesion, 20% ALA was prepared with special gel and external application on skin lesions, then 635 nm semiconductor laser irradiation was applied after avoiding light 4h with the output power of 100 mW/cm<sup>2</sup> and irradiation energy of 50-60 J/cm<sup>2</sup>. All patients were treated by ALA-PDT treatments once a week with a total of 3 times. (3) Evaluation of curative effect: dermatoscope (once a month) combined with pathology (biopsy and pathology are needed after following up for 6 months to evaluate the curative effect. Recure: no tumor cell. Ineffective: presence of residual tumor cells or disease aggravation. Efficiency =the number of cured cases/ total cases ×100%. (4) follow-up: once a month after the first treatment with a total of 6 months, recording all the detailed untoward effect every time.

**Results** (1) a total of 68 patients were followed up, including angiolymph hyperplasia with eosinophilia, virus warts at the nostril / ear, cutaneous angiosarcoma, scrotal lymphangioma, generalized solar keratosis, porokeratosis. (2) After 3 or more times of combined photodynamic therapy, some patients recovered and some improved partially. (3) Some patients had a local burning sensation; some had mild to moderate redness after irradiation. A few patients had obvious pain and postoperative infection. The wound healing time in some patients was prolonged.

**Conclusions** Photodynamic therapy has been widely used in the treatment of various skin diseases nowadays. As a new treatment, especially for some refractory skin diseases that routine treatment unable to control, there is an open window is opened that we can try photodynamic therapy combined with operation or laser treatment

CS17-9

## Demographic factors and prevalence of rosacea in dermatology outpatients in Shanghai

Qian-Li Yang

*Fudan University Affiliated Huashan Hospital*

**Background** This study aimed to examine the prevalence of rosacea in Shanghai and to determine if the prevalence of rosacea changes according to age, gender, skin colour, body mass index, and some chronic systemic diseases.

**Methods** In total, 1237 consecutive subjects attending dermatology outpatient clinics in Shanghai were invited to fill out a questionnaire on their demographical information, medical history, and face symptoms. The subjects were then classified to have rosacea using the criteria of Chinese Medical Doctor Association, or no-rosacea. The prevalence of rosacea was calculated for the entire study population and in subgroups stratified according to age of examination, gender, skin colour, body mass index, and history chronic systemic diseases. Multivariate logistic regression analyses were performed to assess the impact of these factors on rosacea prevalence.

**Results** The prevalence of rosacea in subjects attending dermatology outpatient clinics in Shanghai is 21.18%. The prevalence is highest among those 20 to 40 years of age. Rosacea has higher prevalence in women than in men, and higher in those with lighter skin colour than in those with dark. Obesity does not have much of influence on rosacea presentation. Finally, hyperlipidemia, depression, and anxious might be associated with the prevalence of rosacea.

**Conclusions** Prevalence of rosacea can show great variations according to age, sex and skin color. Some chronic systemic diseases may be related with rosacea. However, the data were gathered according to patients' self-reports only and the sample size was relatively small in some groups after stratification for, skin type.

CS17-10

**Cutaneous Rosai-Dorfman with acne-like appearance: a case report**

Hong-Mei Zhou

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**Background** The present study aimed to describe a case of cutaneous Rosai-Dorfman disease (CRDD) with acne-like appearance.

**Methods** The clinical data, histopathological findings and immunohistochemistry staining in one rare case of Cutaneous Rosai-Dorfman were analyzed and related literatures were reviewed.

**Results** A 28-year-old man presented with a 3-month history of multiple lesions on his face, head scalp. Physical examination revealed a number of clustered or satellite firm, yellowish red papules, some of them coalesced into plaques with an irregular surface. No fever, malaise, reduced appetite, weight loss or lymphadenopathy was observed. Regular laboratory analyses, including complete blood count, biochemical tests and serum lipoprotein profile were all in normal range. There was no signs indicate systemic involvement. A biopsy specimen from a red papule showed a dense, dermal mixed infiltration, which composed of many foamy cells embedded in aggregates of lymphocytes, scattered plasma cells and neutrophils. Emperipolesis was seen. Immunohistochemical staining revealed S-100 (+), CD68(+), CD1a(-), PAS(-), acid-fast (-). A diagnosis of CRDD (cutaneous Rosai-Dorfman disease) was made. The patient received oral methylprednisolone, methotrexate and achieved remission.

**Conclusions** The clinical manifestations of CRDD include single or multiple yellow-red to brown or purple papules, nodules and/or plaques, with the face being the most frequently affected site. Cutaneous lesions demonstrate a dense dermal infiltrate of histiocytes with scattered lymphocytes, plasma cells and neutrophils. Emperipolesis is a constant finding. The histiocytes stain positively for S100, CD68, but negatively for CD1a. The clinical course of the disease varies and therapeutic options include surgery, cryotherapy, retinoids, dapsone or high-dose thalidomide, oral or intralesional corticosteroids, low-dose methotrexate, and imatinib should be evaluated.

## Poster

### PO01 Appendages' Diseases

PO01-003

#### **Skin-colored to yellowish subungual flat plaque in a 16-year-old girl**

Hyung Jin Park, Ye-Jin Lee, Chan-Yang Lee, Hye-Jin Ahn, Ki-Heon Jeong, Mu-Hyoung Lee, Min Kyung Shin

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Common benign masses in the subungual space include glomus tumor, subungual exostosis, keratoacanthoma, epidermal cyst and mucoid cyst. These are usually accompanied by pain and cause onychodystrophy. Malignant tumors such as squamous cell carcinoma and malignant melanoma also could occur in subungual space. A 16-year-old female presented to our department with a 2-year history of asymptomatic subungual flat plaque on the second finger. Physical examination revealed a well-demarcated 0.5 x 0.7-cm-sized, irregularly shaped, skin-colored to yellowish flat plaque on the left second finger with onycholysis. She was treated with a topical gel mixture of bethamethasone and calcipotriol and an intra-lesional steroid injection under the initial impression of onychodystrophy. After 5 months of treatment, the lesion showed no progress, so nail bed punch biopsy was performed after partial nail plate removal. Histopathological examination revealed a mild papillomatosis, many koilocytotic atypia of the epidermis, and dilated capillary vessels in the upper dermis, consistent with a viral wart. Human papilloma virus genotyping by real-time PCR confirmed HPV type 53 infection. Herein, we report a rare case of subungual wart caused by HPV type 53.

PO01-007

#### **Efficacy and safety of tofacitinib in patients with recalcitrant alopecia totalis**

Yong-Yon Won, Joong-Woon Choi, Ye-Jin Lee, Bark-Lynn Lew, Woo-Young Sim

*Department of Dermatology, Kyung Hee University hospital at Gang-dong, Kyung Hee University School of Medicine*

**Objective** To evaluate the safety and efficacy of tofacitinib, in a series of patients with recalcitrant AT.

**Methods** This was a prospective open label study using tofacitinib for recalcitrant AT patients. Biopsy samples were taken from all patients' scalp at the time of enrollment. Patients received 5mg tofacitinib twice daily for 6months and responders continued to take it for another 6months. The end points was assessed at 6months by the percent change in Severity of Alopecia Tool (SALT) score. Responders were defined as patients with scalp hair regrowth of  $\geq 25\%$  change in SALT score at 6months.

**Results** Ten recalcitrant AT patients were included. Three patients were judged as responders showing 25% to 50% regrowth at 6months. The mean age of onset (responders: 17 years, non-responders: 10.2 years) and duration of current AT (responders: 4 years, non-responders: 12 years) showed most extensive difference between responders and non-responders. Biopsy revealed follicular peribulbar inflammation in three cases, two of which were responders (66.6%). A marked reduced number of hair follicle was observed in 3 cases of non-responders (42.8%) and 1 case of responders (33.3%).

**Conclusions** In this study, the patients with more preserved and immunologically active hair follicles showed better efficacy in tofacitinib. Conversely, it was also confirmed that it was not effective for AT with long duration and markedly reduced hair follicles. In conclusion, tofacitinib is a relatively safe and effective drug for severe AA, except for recalcitrant AA with a long duration.

PO01-008

**Dermoscopic findings in acute and diffuse total alopecia**

Yong-Yon Won, Joong-Woon Choi, Ye-Jin Lee, Bark-Lynn Lew, Woo-Young Sim

*Department of Dermatology, Kyung Hee University hospital at Gang-dong, Kyung Hee University School of Medicine***Purpose** To evaluate the characteristics of acute diffuse and total alopecia (ADTA) using dermoscopy.**Methods** Patients with ADTA diagnosed by clinical and histological findings were examined by dermoscopy at their first visit of our clinic. Every patients were taken overall clinical photography. We also photographed 10 hairless areas with a digital camera connected to dermoscopy.**Results** In 14 patients, 140 scalp lesions were examined by dermoscopy. The age of the patients varied from 11 to 61 years, and the median age was 34.2 years. In 140 lesions, yellow dots and black dots were observed in 98 lesions (70%) and 103 lesions (73.5%), respectively. Broken hairs and short vellus hairs were seen in 92 lesions (65.7%) and 82 lesions (58.5%), respectively. Tapering hair appeared in 33 lesions (23.5%).**Conclusion** In the results of this study, yellow dots, black dots, broken hairs, short vellus hairs and tapering hairs were observed in ADTA as well as the previously reported AA studies. However, these findings were observed at a higher rate than AA, especially in the findings of broken hair, black dot, and short vellus hair. The simultaneous increase in the number of broken hair and black dot, suggesting sudden hair loss, and short vellus hair, suggesting regrowth of hair, is consistent with the clinical symptoms of ADTA. In other words, the increase of short vellus hairs on the dermoscopy that accompanies clinically severe hair loss is the greatest feature of ADTA.

PO01-013

**Clinical findings of onychophagia in Korean patients: A single centre experience**Dongyoung Roh<sup>1,2</sup>, Woo-Il Kim<sup>1,2</sup>, Min-Young Yang<sup>1</sup>, Won-Ku Lee<sup>1,2</sup>, Tae-Wook Kim<sup>1,2</sup>, Sung-Min Park<sup>1,2</sup>, Hyun-Joo Lee<sup>1</sup>, Gun-Wook Kim<sup>1</sup>, Hoon-Soo Kim<sup>1</sup>, Hyun-Chang Ko<sup>1,2</sup>, Byung-Soo Kim<sup>1</sup>, Moon-Bum Kim<sup>1</sup>*1. Department of Dermatology, School of Medicine, Pusan National University, Busan, Korea**2. Department of Dermatology, Pusan National University Yangsan Hospital, Yangsan, Korea***Background** Onychophagia, defined as habitual nail biting, is a common disorder affecting 20~30% of the population. It can cause various changes of nail units. However, there have been no studies analyzing nail changes due to onychophagia. The aim of this study was to identify clinical characteristics of nail changes due to onychophagia in Korea.**Methods** This study included 36 onychophagia patients who visited Pusan National University Hospital (Busan and Yangsan) over a 15-year period (2002-2017). We reviewed medical records and clinical photographs retrospectively.**Results** All ten finger nails were affected in 38.9% of patients. Left thumbnail was the most predominantly affected site (80.6%), followed by right thumbnail (75%). In clinical findings, nail bed shortening was the most common presentation (66.7%), followed by rough nail plate (47.2%), transverse groove (33.3%), brittle and splitting nail (25%), splinter hemorrhage (22.2%), longitudinal melanonychia (22.2%), wash-board nail (16.7%), and pterygium (5.6%). 83.3% of patients had periungual complication such as periungual exfoliation (69.4%), absent of ragged cuticle (58.3%), and paronychia (19.4%).**Conclusion** To our knowledge, this study is the first study investigating clinical characteristics of onychophagia. The result of this study could be helpful when encountering onychophagia.

PO01-017

**Clinical and histopathological characteristics of linear alopecia of the scalp in Korea: A single centre experience**Hak-Jun Kim<sup>1,2</sup>, Hyang-Suk Ryu<sup>1</sup>, Gun-Wook Kim<sup>1</sup>, Hyun-Chang Ko<sup>1,2</sup>, Hoon-Soo Kim<sup>1</sup>, Byung-Soo Kim<sup>1,3</sup>, Moon-Bum Kim<sup>1,3</sup>

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**Background** A distinctive clinical pattern of alopecia is very important for the differential diagnosis among various alopecia. However, dermatologists may have difficulty making correct diagnosis when alopecia occurred in a linear pattern because their clinical presentation might be extremely rare. The aim of this study was to identify the clinical and histopathological characteristics of linear alopecia of the scalp in Korean patients

**Methods** This retrospective study included patients with linear alopecia of the scalp presenting at the Pusan National University Hospital (Busan and Yangsan) during a 15-year period (2002-2017). In all the patients, biopsies were performed and final diagnosis was made based on clinical and histopathologic findings. We reviewed medical records, clinical photos, and histopathological slides.

**Results** Twenty-one patients with linear alopecia of the scalp were included in this study. The most common dermatoses was En Coup de Sabre (7/21, 33.3%), followed by alopecia areata (5/21, 23.8%), lupus erythematosus (2/21, 9.5%), pseudopelade of Brocq (2/21, 9.5%), non-specific scarring alopecia (2/21, 9.5%), triangular alopecia (1/21, 4.8%), trichotillomania (1/21, 4.8%), and traction alopecia (1/21, 4.8%).

**Conclusion** The result of this study could be helpful for dermatologists when encountering linear alopecia of the scalp.

PO01-022

**Disseminated keratosis follicularis squamosa**

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Keratosis follicular squamosa (KFS) is a rare acquired keratinizing disorder. It was first reported by Dohi and Momose in 1903. It has been frequently reported in Japan, but has not been sufficiently described in the English literature. Now we report two Chinese cases of disseminated KFS. Physical examination revealed small scattered patches up to 10 mm in diameter, whose margins were slightly detached from the underlying epidermis, similar to "lotus leaves on the water" as described by Dohi. The distribution of the affected sites included back, abdomen, buttocks and limbs. There are no previously reported cases of non-Japanese KFS involving such extensive areas as our patients to the best of our knowledge. In a word, KFS is a well-known disease in Japan with a predisposition to occur in Japanese people, but it has not been well described in the English literature. This is the second report of disseminated KFS and first in non-Japanese. Further study is needed to clarify the prevalence and pathogenesis of KFS from other ethnic groups.

PO01-031

**A case of Trichorrhexis Nodosa and scanning electron microscopy study**

Guanzhao Liang, Weida Liu

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**Purpose** Our aim is to share an experience of diagnosis of Trichorrhexis Nodosa which is a rare hair disorder.

**Method** It was diagnosed by the characteristic features from the clinical observation, light microscope and scanning electron microscope.

**Results** It was found that there are so many dust-like knots on the hairs and brush-like hair fracturing was obviously seen under both light microscope and scanning electron microscope. A diagnosis of generalized distal Trichorrhexis Nodosa was made and we gave her suggestions to avoid the practices that may be the possible causes. After one year follow-up, the hair was observed to recover to normal again.

**Conclusion** patients with a history of white or yellowish nodules on the hair, increasing fragility of the hair, and inability to reach normal hair length should be concerned about their daily hair care habits, environmental or chemical exposures and the hair should be away from the possible physical or chemical trauma.

PO01-033

### **Epidemiologic and clinical features of hidradenitis suppurativa in Korea: A nationwide multicenter study**

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Hidradenitis suppurativa (HS) is a chronic, relapsing, inflammatory skin disorder. Although several epidemiologic studies have been conducted in western countries, such data regarding Asian populations are scarce. We sought to investigate the demographic and clinical features of HS in Korea. Total of 438 patients, diagnosed as HS from May 2007 to April 2017, were enrolled and electronic medical record of each patient was reviewed. Male patients were predominant with male to female ratio of 2.5: 1. Mean age of disease onset was 23.9 years and most patients had no family history. Most frequently affected area was the buttock, followed by axilla and groin. Acne and diabetes mellitus were the most prevalent associated diseases and no patients with inflammatory bowel diseases were observed. Identified severity risk factors were obesity (OR 2.829;  $P = 0.044$ ), involvement of axilla (OR 2.019;  $P = 0.005$ ), perineum (OR 5.062;  $P = 0.003$ ) and buttock (OR 2.288;  $P = 0.001$ ). Male sex, smoking history tended to be associated with more severe diseases although they were not statistically significant. Treatment response was associated with obesity (OR 5.224;  $P = 0.004$ ), involvement of axilla (OR 0.293;  $P = 0.001$ ), buttock (OR 0.362;  $P = 0.003$ ) and atypical locations (OR 0.289;  $P = 0.002$ ), and number of affected regions (OR 0.461;  $P = 0.038$ ). Female sex, patients with late onset of the disease and less severity tended to show better treatment response although they were not statistically significant. Our results will provide clinical characteristics of HS patients in Asia and help to broaden understanding of HS.

PO01-001

### **Prostanoids and hair follicles**

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Prostanoids, including prostaglandins (PGs) and thromboxane A<sub>2</sub> (TXA<sub>2</sub>), are a family of lipid-derived autacoids that modulate many physiological systems and pathological contexts. Prostanoids are generated by sequential

metabolism of arachidonic acid by the cyclooxygenase to PGH<sub>2</sub>, which is converted to PGD<sub>2</sub>, PGE<sub>2</sub>, PGF<sub>2</sub>α, PGI<sub>2</sub> and TXA<sub>2</sub> by their specific synthase. Recent evidence suggests that prostanoids play a role in regulating hair growth. For example, the PGF<sub>2</sub>α analogue is Food and Drug Administration–approved and routinely used to enhance the growth of human eyelashes. PGE<sub>2</sub> has also been proposed to protect from radiation-induced hair loss in mice. However, PGD<sub>2</sub> inhibits hair growth and thus represents a negative counterbalance to PGE<sub>2</sub> and PGF<sub>2</sub>α's positive hair growth effects. This review summarizes insights into the metabolism of prostanoids and the expression pattern of prostanoid receptors in hair follicles. Specifically, we focus on their different and even opposing effects on hair growth and the underlying mechanisms, which has potential clinical relevance for the treatment and prevention of hair disorders.

## PO01-002

### Child with early phase of extrinsic atopic dermatitis: A case report

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A 3-year-old Chinese boy was referred to our department for itching everyday. He began to develop an eczematous rash at the age of 4 months. The rash initially involved his cheeks, without treatment, most of the facial rashes could disappear. But the skin rashes recurred for about 3 years, presented with erythema and skin color papules on the trunk and extremities, forming oozing and crusting lesions after the patient scratching himself. Despite the use of topical corticosteroids, his skin rashes continued to flare. Recently, the itching increased and became a sleep deterrent. During examination, the patient scratched continuously whenever undressed. The patient had no personal allergic rhinitis or asthma. He had no other chronic medical conditions and was not on any medication. Regarding family history of other atopic conditions, his father had acute urticaria and angioedema.

The patient is well developed. Physical examinations of cardiac, lung and abdominal were unremarkable. Skin examination demonstrated generalized eczematous skin with erythema, papules, lichenification and xerosis, with greater involvement of his anterior part of chest, lateral chest walls, flexural areas of his upper and lower extremities. Some of the lesions were covered with fine branny scales (Figure 1). His nails and hair were normal. Routine laboratory studies of complete blood count (CBC) showed a mild elevated lymphocyte rate (57.9%) and monocyte rate (10.7%). Urine test indicated that microalbuminuria is positive and urine specific gravity was 1.030. The serum immunoglobulin E (IgE) level (8.56IU/ml) is normal. Serum allergen tests showed only positive for egg. Other laboratory tests, including those for hepatic and renal function were normal. A skin biopsy from left hypochondrial region showed focal mild hyperkeratosis accompanied parakeratosis, moderate acanthosis and spongiosis. Epidermal hyperplasia looked like psoriasis. The epidermis protruding was not on the same level. Dermal perivascular had lymphocytes infiltration. His SCORAD score is 35.

Atopic dermatitis (AD) is a chronic inflammatory skin disease. The high incidence occurred in infancy, childhood and young adult. High prevalence rate of AD has been observed in a number of countries. In Shanghai, China, the incidence of AD is 8.3% between the ages of 3-6 years (male 8.5%, female 8.2%), and the incidence was significantly higher in urban children than those in rural or undeveloped areas (10.2% vs. 4.6%,  $P < 0.05$ ). The pathogenesis of AD is not fully elucidated, but studies indicate that genetic, immunologic and environmental factors may be involved. These factors may cause a dysfunctional skin barrier and the dysregulation of immune system. Some factors may be involved in its aggravation, such as food allergies, colonization of microorganisms and indoor air pollutants. Diagnosis is always made according to the clinical criteria. Skin biopsy may be performed only to rule out other skin conditions. The differential diagnosis of AD include seborrheic dermatitis, discoid (nummular) eczema, contact dermatitis, frictional lichenoid dermatitis, scabies, zinc deficiency, acrodermatitis enteropathica, netherton syndrome and some immune deficiencies. The treatment for AD include emollients, corticosteroids, calcineurin inhibitors, antibiotic, vitamin D, immunomodulation agents, immunosuppressants, phototherapy and systemic drugs. The basic treatment for AD is to avoid irritants and promote proper hydration of the skin.

AD has been categorized into two types, intrinsic AD (iAD) and extrinsic AD (eAD). Intrinsic AD always shows normal serum IgE levels, no serum specific IgE, no association with respiratory diseases and negative skin prick testing to common aeroallergens or food allergens. Serum total IgE value less than 150 or 200 kU/L has been proposed to indicate iAD. While eAD is related to environment, food and inhalant allergens or high levels of IgE. If

this patient was diagnosed with iAD, the only distinction was the serum allergen test, which showed positive for egg. Therefore, the patient's diagnosis was the early phase of extrinsic atopic dermatitis.

The patient hadn't been diagnosed of AD before. He intermittently used different kinds of corticosteroids to control the lesions and itching. However, this treatment could not stop the relapse of AD, on the contrary, the patient's condition worsened gradually and the itching increased. Pruritus is a key symptom and together with sleep disturbance, significantly affects the quality of life of patients. Severe AD may lead to significant morbidity due to skin infections and atopic comorbidity. The prognosis of AD is mainly determined by early diagnosis and appropriate treatment. Therefore, it is very important to recognize eAD at early phase, especially in the patient without other atopic diseases or no personal or familial history of allergic diseases.

We report detailed clinical history and laboratory features of a 3-year-old Chinese boy with an early phase of extrinsic atopic dermatitis.

PO01-004

### **Longitudinal melanonychia to treatment with hydroxychloroquine in systemic lupus erythematosus**

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*Peking University People's Hospital*

The differential diagnosis of longitudinal melanonychia affecting multiple nails consists of an iatrogenic cause like drug-induced hyperpigmentation, physiological, repetitive trauma, underlying systemic disease. Drugs (including chemotherapy, antimalarials, minocycline, antivirals) may induce both transverse and longitudinal bands. Our patient was diagnosed with a drug-induced longitudinal melanonychia caused by hydroxychloroquine.

We present the case of a 48-year-old woman who was diagnosed with systemic lupus erythematosus in March 2000. Prednisone was started at 40 mg/day in a descending pattern, with good clinical response. Hydroxychloroquine was started at a dose of 200 mg/day. After the illness being in a stable condition, prednisone was reduced to 10 mg/day, hydroxychloroquine was at a dose of 100 mg/day in July 2002. But the patient developed longitudinal bands of similar characteristics on the nails of the ten fingers on both hands after 3 years on the drug, and no other mucocutaneous pigmentations were seen. Through the dermoscopy, there are a large number of longitudinal bands with brown pigment. Ruling out other causes of longitudinal melanonychia, including Cushing syndrome, this event was attributed to treatment with hydroxychloroquine.

Adverse effects related to the hydroxychloroquine are generally mild and reversible. Melanonychia are an uncommon side effect of hydroxyurea. In our case, hyperpigmentation did not appear, but nail affection is typical. Skin pigmentation tends to remit slowly in the months after drug suspension, but nail lesions may last for years. This case demonstrates that an iatrogenic (drug-induced) cause should be considered in the case of longitudinal melanonychia affecting multiple nails.

PO01-005

### **Baicalin facilitates anagenic hair growth through regulating immune privilege of hair follicle in C57/BL6 mice**

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**Objective** To evaluate the effect of baicalin on immune privilege restoration of hair follicle.

**Methods** The model of anagen of hair follicles were established by depilating hairs on the dorsa of C57/BL6 mice. The treatments were given daily for 17 days by dropping 100  $\mu$ l of reagents solution (100  $\mu$ mol of baicalin) onto the hair-depilated dorsa of mice. The morphological changes of developing hair follicles were evaluated through photographs of mouse dorsa, the amount and the length of hair shafts, as well as the H&E stained sections of hair follicles. The protein and mRNA levels of  $\alpha$ -MSH, TGF- $\beta$ 1, IGF-1 in the tissue of mouse skin were measured using

IHC staining, ELISA assay, and RT-PCR technique, respectively.

**Results** The amount and the length of the hair shafts were significantly increased in the baicalin group compared to the control group. The expressions of the three kinds of cytokines were significantly increased in the skin tissues of the baicalin group compared to the control group.

**Conclusion** It suggests that baicalin facilitates hair growth by stimulating the local secretions of  $\alpha$ -MSH, TGF- $\beta$ 1, IGF-1 to intensify IP restoration of hair follicles in anagen.

PO01-006

### **Efficacy of compound betamethasone combined with compound glycyrrhizin in the treatment of severe active alopecia areata: a randomized controlled study**

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**Background** Severe types of alopecia areata (totalis, universalis and severe patchy) have poor prognosis. Systemic glucocorticoid is effective for severe active alopecia areata (AA), but the side effects and high recurrence rate are inevitable. Compound glycyrrhizin is effective for mild to moderate AA with the role of immunoregulation.

**Objective** To evaluate the efficacy and safety of the concurrent treatment of compound betamethasone with compound glycyrrhizin in severe active alopecia areata.

**Methods** 101 severe active AA patients were randomly given intramuscular compound betamethasone 1mg q3w for 12 weeks, with or without oral compound glycyrrhizin 75 mg tid for 12weeks, followed an additional 6 months off treatment. The severity of alopecia tool (SALT) and hair-pulling test were used to evaluate the severity and activity.

**Results** The 12-week control rate(hair-pulling test turn negative) of the combination treatment group (81.82%) is significantly higher than that of compound betamethasone group (65.12%). The 24-week efficacy rate (more than 50% regrowth) of the combination treatment group is 80.00%, and is significantly higher than that of compound betamethasone group (54.76%). The 36-week efficacy rate of the combination treatment group is 78.13%, and is significantly higher than that of compound betamethasone group (51.85%). The recurrence rate of the combination treatment group (43.90%) is significantly lower than the betamethasone treatment group (72.41%). No severe adverse event was noted.

**Conclusion** The combination treatment of compound betamethasone with compound glycyrrhizin showed better efficacy and durability of responses than single steroid treatment in severe active alopecia areata.

PO01-009

### **A collision tumor: Nevus lipomatosus cutaneous superficialis and steatocystoma simplex**

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Nevus lipomatosus cutaneous superficialis (NLCS) is a rare hamartomatous. Histologically, it is characterized by the presence of mature ectopic adipocytes in the superficial dermis. Steatocystoma simplex is another rare skin lesion. Histologically, it is a cyst lined by stratified squamous epithelium, with sebaceous lobules present along the cyst wall. To the best of our knowledge, NLCS coexistent with steatocystoma has not been reported till date. Here, we report a case of NLCS coexistent with steatocystoma presented in one single lesion from a 3-year-old Chinese boy on the face. A 3-year-old boy presented with a soft, digit-like hyperplastic lesion on the jaw at 6 months after birth. The lesion was 0.5×1.0cm in size, soft, skin colored, and non-tender, no symptoms except for an unsightly appearance. Pathological examination indicated that there were lobules of fat cells embedded among the collagen bundles at the papillary dermis. The individual fat cells was mature and of normal size. The lobules were not encapsulated and did not communicate with the subcutaneous fat tissue. Histopathological examination also showed a cyst lined by stratified squamous epithelium and containing sebaceous glands in its wall. Accordingly, NLCS coexistent with

steatocystoma simplex was diagnosed. This situation leads us to consider the relationship and pathogenesis of the two diseases.

## PO01-010 Eccrine chromhidrosis

Lina Xu, Jian-Jun Qiao, Hong Fang

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A 16-year-old girl with stained undershirt and discoloration on skin and fingernails was referred to our outpatient department. The situation had 1 month duration especially after exercise complains without notable cause. Therefore, she visited directly without disgestion of any medication.

Physical examination revealed spots of the skin located at abdomen, thighs, and trunk. Meanwhile, her fingernails discolored orange to different degree which could not be removed by wet cotton swab. The color of urine, tears, saliva and feces was normal. Laboratory examination showed increased liver function tests (total bile acid 31 $\mu$ mol/l, blood's uric acid 370 $\mu$ mol/l, and urobilinogen +). Blood, urine, renal, thyroid, tumor marker tests and ultrasonography of liver, gallbladder, spleen, and pancreas were normal. Dermoscopy of the lesions showed darkish-ebony pigment distributed along the dermatoglyphic ridges in a classic manner of eccrine chromhidrosis. Hereto, A follow-up in-depth history of a special fetish for takeout "Chinese bowel noodles" indulged even daily was explored, which might be worthy particularly noticed.

Further skin scraping/culture and biopsy was refused, however which was indeed indispensable, thus stranding us from excluding the exogenous and other etiology, despite its conspicuous clinical diagnosis of chromhidrosis. Otherwise, intake materials related to eccrine chromhidrosis could not be readily excepted.

Chromhidrosis is a rare condition producing colored sweat from apocrine or eccrine glands. Furtherly, eccrine chromhidrosis is an exceedingly rare condition in which water-soluble pigments secreted via eccrine sweat glands. Red eccrine chromhidrosis of tomato-flavored prepacked food, yellow eccrine chromhidrosis of bisacodyl and blue-green eccrine chromhidrosis of Homeopathic medicine were reported. Moreover, other eccrine chromhidrosis due to diseases in the setting of hyperbilirubinemia, such as acute hepatitis, gallbladder adenocarcinoma and cholestasis, and recently sickle cell disease (hemoglobin SS).

In our patient, a fetish for takeout "Chinese bowel noodles" should not be immediately denied without hesitation as her initiator, not only because it is the sole dubious point but also because her turned normal completely in 4 months and no recurrence hitherto within 1.5 years without any treatment except prohibiting that food intake. From this perspective, although our failing to confirm her exact etiology unfortunately by spectrophotometry, microorganism and biopsy, an eccrine origin of chromhidrosis was highly doubted.

Removing precise causes showed gradually relieve and completely cured. For instance, stop intake of tomato-flavored prepacked food, bisacodyl, homeopathic medicine and probably our highly doubtful takeout "Chinese bowel noodles". Remission or cure of hyperbilirubinemia primary or secondary to other disorders could get resolution of eccrine chromhidrosis. Herein we propose an investigative algorithm to diagnose this rare disease in Diagram 1.

What we might conclude is coloring and flavor-enhancing products added to takeaway food as our case should be taken cautiously in present complex and even toxic world that we are exposed to during the 21st century.

## PO01-011 Analysis of clinical and pathological features of follicular sebaceous cystic hamartoma

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**Objective** To summarize the clinical and pathological features of patients with folliculosebaceous cystic hamartoma (FSCH) and compare their differences between sebaceous trichofolliculoma (STF) and tricho-folliculoma (TF).

**Methods** The six cases of FSCH in our hospital from 2011 to 2018 were retrospectively analyzed in clinical and pathological findings.

**Results** The ratio of gender in 6 cases FSCH was 2: 1; the age range form 22 to 53 years old; among of 6 cases, the affected site were 2 cases on nose, 2 cases on cheek and 2 cases on neck with ,4 cases of single skin lesions and 2 cases of multiple lesions. The color of lesions showed multiple color from skin color, red ,to brownish; The diameter of 5 cases range between 0.5 and 1.5 cm, but 1 case was more than 5cm. All hamartomas located in the shallow middle layer of dermis and 3 cases were connected to the epidermis; All cases showed a dilated folliculosebaceous unit, and 2 cases showed deformed hair follicle; 5 cases showed dilated sebaceous glands along the catheter opening. Clefts between the pericyclic fibrous tissue and the rest of the dermis can be seen in all cases; interstitial visible hair follicle structure in 6 cases, 5 cases were visible blood vessels, 3 cases of visible fat composition. Impressively, 2 cases revealed nerve composition and scattered mast cells, 1 case, revealed mucous deposition around the intravascular vessels. Lymphocyte infiltration around hair follicle was observed in all 6 cases.

**Conclusion** ①The disease can be born with, but all our patients are acquired. ②The head and face are easily affected, especially on the nose; The trunk and limbs were rare but reported, the neck was not reported. The skin lesion was the papules and nodules, and the clinical manifestations were diverse. ③FSCH is a rare cutaneous hamartoma characterized by follicular, sebaceous, and rich mesenchymal elements, while STF and TF have little mesenchymal component. ④The interstitial compositions are mostly hair follicle, blood vessel, fat with few nerves, sweat glands, dense collagens, mucus deposits around the blood vessels. In one patient, the interstitial substance was basically nerve tissue with few other components; which has been termed as neuro-folliculo-sebaceous cystic hamartoma (NFSC). ⑤TF with partial sebaceous differentiation and FSCH with partial follicular differentiation are distinct entities.

PO01-012

### A case report of Olmsted syndrome

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A 8-year-old girl had presented with erythemas and keratinizations, fissures, scales on her hands, feet and corners of the mouth for 6 years. When she was 2 years old, the lesions started from hands and gradually increased in size and number to involve feet, corners of the mouth. The lesions were persistent, non-migratory, without itch or pain. She had acrohyperhidrosis and hypotrichosis from infancy. She was a product of non-consanguineous marriage. No other member of the family tree was involved. Systemic examination was normal. Cutaneous examination revealed that many symmetry erythemas and keratinizations on his hands, feet, and corners of the mouth. The lesions had clear boundaries, with few scales and fissures. Hair was sparse, curl and brittle. There were no nails, or teeth abnormalities. Histopathology showed marked hyperkeratosis, parakeratosis and perivascular infiltrate mainly by lymphocyte in the papillary dermis. Diagnosis: Olmsted syndrome.

PO01-014

### A case of inverted follicular keratosis and literature review

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The patient was a male and 53 years old. A neoplasm has appeared on the right back for 1 year. The patient didn't complain discomforts and not consult a doctor and not received any treatments. The lesion slowly became greater. It was denied that topical trauma and mosquito bite history. The neoplasm was on the right shoulder back and about 1 cm in diameter .it was hard and covered by keratinized crust and its surface and surrounding was slightly red. No similar damage was seen in other parts of the body. Surgical excision of the lesion and histopathological examination was performed: It was indicated that the cell hyperplasia was very active, and the nuclear division was easy to see,

and the squamous epithelium of the focal area was mildly atypical. Inverted follicular keratosis was indicated. Diagnosis: Inverted follicular keratosis.

#### PO01-015

### An evaluation of the efficacy of potent corticosteroids occlusion in children with severe type of alopecia areata

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**Background** Alopecia areata (AA) in children is a special type of AA, not only for the severe type tendency, but also for the high recurrence rate and poor prognosis.

**Methods** A total of 60 pediatric patients with severe type AA were enrolled in this retrospectively study. These patients were divided into two groups: occlusion group (50 patients) and non-occlusion group (10 patients). Patients' detailed clinical data was collected both before and after treatment. The treatment effect, side effects and the recurrence during follow-up were also recorded.

**Results** The patients of two groups are matched with gender, age, disease duration, alopecia types and alopecia area prior to treatment. After treatment, patients of occlusion group showed a significant higher efficacy rate at 82.0% than patients of non-occlusion group at 50.0% ( $P = 0.044$ ), especially for the patients with AT (80.0% V.S 25.0%) ( $P = 0.048$ ). There was no significant difference between two groups on the onset time and effective assessment score ( $P_s > 0.05$ ). During treatment process, topical side effects including atrophic of scalp, facial hypertrichosis and folliculitis were presented. The prevalence of atrophic of scalp in occlusion group (52.0%) was statistically higher than non-occlusion group (10%,  $P = 0.033$ ). No systemic side effect was observed. During the follow-up, the relapse rate and relapse time between two groups showed no statistically difference ( $P_s > 0.05$ ), and the relapse was not related to any known factor.

**Conclusions** Potent corticosteroids occlusion is a new effective and safety therapeutic attempt to treat children with severe type of AA.

#### PO01-016

### Multiple application of intramuscular compound betamethasone in the treatment of alopecia areata

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**Background** Corticosteroid has been known as one of the efficient therapies in AA management, with various ways of applications. Herein we introduce a systematic application of corticosteroids with satisfactory efficacy and fewer side effects.

**Methods** A total of 57 patients of AA were allocated into 3 groups to accept different regiments, i.e., A. compound Glycyrrhizin group (CGT group, 150mg/d for 14 weeks); B and C. intramuscular injection of Compound betamethasone with an interval of 2-week group or 3-week group for 4 times (median) (CB 2-week group and CB 3-week group). The treatment effect was judged by Oslen's SALT equivalent, side effects and relaps were recorded.

**Results** The patients of three groups were matched with sex, age, disease duration, alopecia types and alopecia area before treatment. After treatment, in two CB groups, 97.8% patients were responsive, whereas efficacy rate of CGT group was 72.7%. When compared with two CB groups, significantly larger hair loss areas and lower effective assessment score was found in CGT great ( $P < 0.05$ ). Within the two CB groups, unwanted side effects were presented without significant differences on prevalence and occurring time ( $P > 0.05$ ). During the follow-up, patients with longer disease duration had a higher relapse rate than those with short duration ( $P < 0.05$ ). Besides, the relapse rate in CB 2-weeks group was significantly higher than other two groups ( $P < 0.05$ ), and the time to relapse in CB 2-week group

was also significantly longer than CB 3-week group ( $P < 0.05$ ).

**Conclusions** Multiple intramuscular injection of CB is a worthy therapeutic attempt to treat AA. With a better response, less relapse rate and fewer side effects, a maximal of 4 intramuscular injections of CB with 3-week interval is our recommendation.

PO01-018

### **Analysis of drug resistance genes of *Corynebacterium acnes* in acne patients in Dongguan area**

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**Objective** The aim of this study was to compare difference between clinical resistant and sensitive *Corynebacterium acnes* from molecular level of drug resistance by high-throughput gene sequence.

**Methods** Sequenced by Whole-genome shotgun (WGS), 57 *C. acnes* are compared with ATCC 6919 complete gene sequence, which is sequenced by second generation sequencing illumina and three-generation sequencing pacbio RSII.

**Results** Among 57 strains, 4 were sensitive, 13 strains were single antibiotic in low resistant, 40 strains were highly multiple cross-resistant. In the 40 multiple cross-resistance strains, 25% (10/40) were found to be A→G mutations at the 2058 site of the *23SrRNA* gene, 5% (2/40) were found to be A→T mutations at the 2058 site of the *23SrRNA* gene, 65% (26/40) were positive annotated for *ermX* resistance gene by CARD databases and still 5% (2/40) found nothing to carry. There was no cross-over overlap between samples carrying the *ermX* resistance gene and mutations at the 2058 site of the *23S rRNA* gene.

**Conclusion** Our research is consistent with gene-level transfer resistance mechanisms, which is the most effective means of spreading clinical drug resistance.

PO01-019

### **Primary cutaneous mucinous carcinoma: A case report**

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A case of primary cutaneous mucinous carcinoma is reported. A 87-year-old male patient presented with a 1-year history of red plaque on the zygomatic arch of his left face. He felt no subjective symptoms. Physical examination showed a firm, red-colored, immovable nodule. The maximum diameter of the plaque was 1.5 centimeters. No erosion and exudation were found. Histopathological examination showed masses of tumor cells in the dermis. Some agglomerate epithelial cells were floating in the background of mucin and the tumor cells were atypical. Immunohistochemical results revealed the tumor cells were stained positive for EMA, CK7, and negative for GCDFP-15, CEA, CK20 and p63. He was diagnosed as primary mucinous carcinoma of the skin according to histopathological and immunohistochemical characters.

PO01-020

### **A case of Rombo syndrome with trichoepithelioma and differential diagnosis of atrophoderma vermiculatum**

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Atrophoderma vermiculatum (AV) characterized by symmetric worm-eaten appearance on face may present as an

isolated skin defect or a distinct feature of some rare disorders such as Rombo syndrome. We report a female patient being diagnosed as Rombo syndrome based on the pit-like lesions on cheeks, multiple milia, angioectasis, hypotrichosis and the histological feature of trichoepithelioma, although no cyanosis was seen on her extremities. Immunohistochemistry showed focal EMA positive and CEA, CK20 negative. We review the clinical and histological manifestations of AV associated diseases including isolated atrophoderma vermiculatum, Rombo syndrome, Bazex syndrome, multiple eccrine-pilar hamartomas, Nicolau-Balus syndrome, Loews-Dietz Syndrome, Marfan syndrome and Melkersson-Rosenthal Syndrome. We emphasize the importance of discerning these syndromes from isolated AV and the necessity of regular biopsies since most AV associated syndromes have the predisposition to basal cell carcinomas (BCCs). Based on the similarity of the histological findings, we agree with the opinion that Rombo syndrome, Bazex syndrome, Nicolau-Balus syndrome and multiple eccrine-pilar hamartomas might be a continuum of the pilosebaceous-apocrine unit hamartoma with a tendency to develop BCC.

PO01-021

### A case of mixed tumor

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A case of mixed tumor is reported. A 41-year-old male patient presented with a 4-year history of black nodule on the upper lip. He felt no subjective symptoms. Physical examination showed a black-colored nodule. The maximum diameter of the plaque was 0.7 centimeters. No erosion and exudation were found. Histologically, a well-demarcated neoplasm without definite capsule composed of basal-like cells was arranged in nodule form. There were plenty of high-differentiated sebaceous, sudoriferous duct, myoepithelium and keratinous squamous epithelium components in the fibromyxoid stroma areas. Diagnosis: mixed tumor.

PO01-023

### Relationship between rosacea and dietary factors: A multi-center retrospective case-control survey

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**Background** Recent studies have suggested a relationship between intestinal inflammations and rosacea. The relationship between rosacea and dietary factors has been little studied to date. The aim of current study was to evaluate the possible relationship between rosacea and diet in a large Chinese rosacea population, with a view to providing dietary guidelines for rosacea patients.

**Methods** A multicenter case-control study was conducted. General sociodemographic information, personal habits and food intake frequency were collected by standardized questionnaires. Relative risk estimates of diet were calculated using multivariate logistic regression analysis.

**Result** In all, 1347 rosacea patients and 1290 controls were enrolled in our study. We found that rosacea patients had a higher-frequency intake of fatty food ( $OR=2.00$ ) and tea ( $OR=2.18$ ) compared with control subjects. Low to moderate to high-frequency dairy products intake ( $OR=0.48$ ,  $OR=0.46$  and  $OR=0.10$ , respectively) was inversely associated with rosacea. However, sweet food, coffee and spicy food were not associated with rosacea in our study. The above risk factors appeared unrelated to rosacea severity, indicating that dietary factors may act as triggering rather than aggravating factors for rosacea. However, high frequency dairy products intake showed borderline significant effect on rosacea severity ( $OR=0.14$ ). We further analyzed the correlation between subtypes of rosacea and diet. Compared with the other subtypes, ETR ( $OR=2.49$ ) and PhR ( $OR=5.32$ ) showed more significant correlation with high-frequency fatty intake, and ETR ( $OR=2.73$ ) patients had more high-frequency tea intake. High-frequency dairy products intake showed inverse association with ETR ( $OR=0.13$ ) and PPR ( $OR=0.03$ ), but not for PhR.

**Conclusion** Rosacea is associated with some dietary factors. Recognition of these conditions may help to improve rosacea.

**PO01-024****Acne vulgaris patients have significantly altered gut microbiota and microbial metabolites in adolescents but not in adults**

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Few studies have been conducted to explain the possible separate pathogenesis of acne for different age groups due to dysbiosis of intestinal microbiota. This study was designed to investigate the discrepancies of gut microbes and associated metabolites in adolescent and adult acne patients compared with healthy controls. Fecal samples were obtained from 43 acne vulgaris patients and 43 age- and gender-matched healthy controls, and hypervariable tag sequencing of the V3-V4 region of the 16S rDNA gene was employed. Targeted quantitative analysis of 145 gut microbiome metabolites was also performed using the MicrobiOMET platform. Measures of  $\alpha$ -diversity showed less diversity of gut microbiota in both adolescent and young adult patients than in matched healthy controls. Microbiome and metabolism differed significantly from healthy subjects from adolescents to young adults. Adolescent acne patients had a significantly altered microbiome and metabolites compared with their matched healthy controls; however, no difference in intestinal microbes was observed between adult acne patients and the adult healthy controls. Our findings may help to explain different pathogenesis of acne vulgaris in adolescents and young adults and provide potential therapeutic targets of the disease.

**PO01-025****Effect of rbFGF on repair of rosacea**

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**Objective** To assess the effect of topical use of recombinant bovine basic fibroblast growth factor (rbFGF) gel on the repair of facial skin lesions in patients with rosacea.

**Methods** In this single-blind study, a total of 1287 patients with *Demodex* mite-induced rosacea who received treatment with ornidazole tablets were randomized to rbFGF gel treatment group (n=651) or control group (n=636) without revealing the group identity. Patients in the treatment group were treated with topical application of rbFGF gel over the skin lesions (0.2 g per cm<sup>2</sup>) for up to 8 weeks, while patients in the control group received placebo treatment unless ulceration occurred. Skin lesions of all patients were scored before and after treatment with rbFGF gel and subjected to histological analysis. All patients were followed up for 6 months.

**Results** Significant improvement in the total effective rates for erythema, papules, desquamation and dryness were observed in the rbFGF treatment group, except telangiectasia. At the end of the 2, 4 and 6 months of follow-up, the total effective rates for patients in the treatment group were significantly higher than those in the control group (81.67% vs. 28.84%; 85.11% vs. 40.81%, and 96.56% vs. 55.82%, respectively). After treatment for 6 months, none of the patients in the rbFGF group showed ulceration or scar formation. In the control group, 61% of the patients experienced exacerbation of skin lesions, of which, 12% showed ulceration and were treated with rbFGF gel to prevent scar formation. Histological analysis showed gradual reduction in epidermal hyperplasia and resolution of dermal edema in skin lesions treated with rbFGF gel.

**Conclusion** Recombinant bovine basic fibroblast growth factor gel significantly improved the repair of facial rosacea skin lesions in patients treated with anti-*Demodex*.

PO01-027

**Trichofolliculoma: A case report**

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Trichofolliculoma (TF) is a rare benign hair follicle hamartoma, which frequently occurs on the face. Also the skin of neck, thorax, arm and vulva can be involved but even rarer. It is often characterized by a central ostium with hair plugged with keratin. On histopathological examination, a central follicle usually filled with keratin and sometimes containing vellus hairs, which has radiating and small secondary follicles. We report a 35-year-old man with typical clinical and histopathological findings of trchofolliculoma. The patient presented to our hospital with a solitary nodule on his right face. The patient reported the nodule enlarged slowly in size over the past 5 years, without subjective symptoms. The patient was previously healthy and had no family history of similar disease. Systemic examination revealed no obvious abnormalities. Physical examination revealed a erythematous subcutaneous nodule, which has a central pore crossed by cluster vellus hairs. Surgical excision was performed. There is no recurrence after 1-year follow up. Due to the lack of significant clinical features, many tumors can be misdiagnosed as TF, such as folliculosebaceous cystic hamartoma, hair follicle nevus and so on. Immunohistochemical stainings show that TF expresses CK17 intensely, as well as PHLDA1 and BerEP4. Surgical excision perhaps is the most suitable way to treat TF. The prognosis is excellent, although recurrence can occur at the primary site rarely. All in all, TF is a rare hair follicular hamartoma, which has a specific clinical pathology, although it is lack of typical clinical features.

PO01-028

**Acne flare following treatment: investigating the difference of gene expression in peripheral blood**

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**Objectives** Some acne patients appear to flare up after initial administration of isotretinoin while others not. This study was to characterize the gene expression profiles of acne patients before and after administration of isotretinoin, identify the differentially expressed genes (DEGs) associated with acne flare-up.

**Methods** Collect peripheral blood of 11 acne patients before and after isotretinoin (Group 1: 4 with flare-up, Group 2: 4 with improvement and Group3: 3 without obvious changes) and 3 healthy people, perform RNA sequencing and analyze the gene expression profiles. Then identify 3 groups of DEGs by self-contrast and 3 groups of DEGs between patients before isotretinoin and 1 group of DEGs between patients and healthy controls.

**Results** Within the acne patients with flare-up, 6 genes were differentially expressed after isotretinoin compared to before, in which the upregulated DEGs were involved in Toll-like receptor signaling pathway, neutrophil degradation, innate immune response and necroptosis. Between patients with flare-up and without obvious changes before isotretinoin, 1835 DEGs were significant. And the 1778 upregulated ones were enriched in Th17 cell differentiation, NF-KB signaling pathway and steroid biosynthesis. The downregulated DGEs were enriched in defensive response to organism, membrane disruption in other organisms, antimicrobial humoral response.

**Conclusion** The gene expression profiles of acne patients with flare-up are different from those who without. These data indicate that inflammatory and immune responses play a prominent role in acne flare-up process. And it suggests that defensive response to microbes may be a valuable target to further investigate the pathogenesis of acne flare-up after isotretinoin.

PO01-029

**Efficacy of supernatant of hAMSCs in a mouse model of *Propionibacterium acnes*-induced inflammation.**

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**Objective** We investigated the efficacy of the supernatant of human amniotic mesenchymal stem cells (hAMSCs) in a mouse model of *Propionibacterium acnes* (*P. acnes*)-induced inflammation through clinical examination and histopathological studies.

**Methods** A mouse model of *P. acnes*-induced inflammation was established by injecting *P. acnes* to the dorsal skin of ears of 30 mice, which were then equally classified into 3 groups: Model group receiving no treatment, model control group treated with saline injection (50  $\mu$ L for 2 weeks), the hAMSCs group treated with the supernatant of hAMSCs solution at 25  $\mu$ L for 2 weeks. Ten mice served as the normal control group. Skin specimens were harvested from the ears of mice model. Subsequently, haematoxylin-eosin (HE) staining was conducted to observe histopathologic changes, and to count the expression of inflammatory cells at high magnification.

**Results** Gross observation of the skin reveals that the supernatant of hAMSCs attenuated inflammatory response by *P. acnes*-induced skin manifestations in mouse model. The number of the inflammatory cells of the hAMSCs group was significantly lower than that of the inflammatory cells in model group ( $P < 0.05$ ).

**Conclusion** The supernatant of hAMSCs can attenuate pathological manifestations in a mouse model of *P. acnes*-induced inflammation.

PO01-030

**Pretreatment to cyst by fire needle improves effect of photodynamic therapy for cystic acne**

Jianwen Ren, Wei-Hui Zeng, Liang Wang, Jing Zhang

Second Affiliated Hospital of Xi'an Jiaotong University

**Objective** To investigate to improve the effect of photodynamic therapy for cystic acne by the pretreatment to cyst with fire needle.

**Methods** Patients with cystic acne were randomly divided into two groups (A and B), 15 patients in each group. Pretreatment to cyst by fire needle combined with photodynamic therapy in group A. Photodynamic therapy was performed in group B. PDT course of clinical remission was counted.

**Results** The course of PDT treatment ( $(\bar{x} \pm S)$ ) in group A was  $3.04 \pm 0.64$ , and the course of PDT treatment in group B was  $3.5 \pm 0.67$ . The value of the two-sample t-test was 14.28,  $P < 0.005$ .

**Conclusion** Pretreatment to cysts by fire needle can improve the effect of photodynamic therapy for cystic acne.

PO01-032

**Treatment of acne with new supramolecular salicylic acid and literature review**

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**Objective** Introduction of new supramolecular salicylic acid in the treatment of acne.

**Methods** According to acne grading, we choose different supramolecular salicylic acid with different concentration.

**Results** Acne scars, nodules, blackheads, pustules and pox and India have all subsided.

**Conclusion** The application of new supramolecular salicylic acid topical application to acne can avoid the side effects of oral medicine, non-invasive and safe, and has high compliance. It is worth promoting.

## PO02 Bacterial and Viral Infection

### PO02-004

#### Cutaneous *Mycobacterium massiliense* infection caused by skin coining “Gua Sha”

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Nontuberculous mycobacteria are ubiquitous environmental organism that is rare, significant human pathogen in immunocompetent individuals. Cutaneous nontuberculous mycobacteria infections have been increasing developed associated with invasive procedures including surgery, liposuction, filler injection, intramuscular injection, mesotherapy, piercing, acupuncture, or cupping therapy. Herein, we report the first of cutaneous nontuberculous mycobacteria infection caused by East-Asian traditional treatment ‘Gua Sha’, also known as scraping, coining or spooning in English speaker. A 35-year-old healthy female presented with widespread, painful, skin nodules and pustules on her both upper and lower extremities that had developed after ‘Gua-Sha’ treatment for her body contouring. Histopathologic examination of the lesions revealed granulomatous inflammation in the dermis and the culture isolates were identified as *Mycobacterium massiliense* using polymerase chain reaction assay. The patient was successfully treated with intermittent incision and drainage and oral clarithromycin based on antimicrobial susceptibility testing.

### PO02-005

#### A case of cutaneous infection caused by *Mycobacterium gordonae*

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*Mycobacterium gordonae* is a type of slow-growing nontuberculous mycobacterium that has been traditionally considered a non-pathogenic environmental mycobacterium, although it has caused some disease in humans. A 50-year-old man presented asymptomatic plaque that has been presented for 40 years on the right cheek. He reported the plaque had gradually grown in size. Physical examination revealed erythematous annular hyperkeratotic plaque, measured 5 X 7 cm size. Histologic evaluation revealed epithelioid granulomas with a large number of lymphocytes and multinucleated giant cells in the dermis. Special stain with acid-fast stains was negative for bacteria and fungal culture of the lesion was negative. Laboratory test showed positive result for interferon gamma assay. Tuberculosis Skin Test showed induration of 20 mm diameter, 48 hours after injection. Mycobacterial infection was suspected. TB/NTM genotyping by real-time PCR using PANA qPCRTM detect NTM infection. Further NTM sequence analysis of 16S rRNA and 23S rRNA confirmed *M. gordonae* infection. After diagnosis the patient was treated with isoniazid and rifampicin. At the 3 month of follow up, skin lesion had flattened and decreased in size and he reported no adverse drug reactions.

### PO02-017

#### Cutaneous *Mycobacterium massiliense* infection associated with bee venom acupuncture

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Bee venom acupuncture is a variant of acupuncture technic of folk medicine using bee sting. Despite controversies surrounding its effectiveness, various adverse events including nontuberculous mycobacterium (NTM) skin and soft

tissue infection has been reported. *Mycobacterium massiliense* is a rapid growing nontuberculous mycobacterium (NTM) that is closely related to the *M. abscessus/chelonae* group. It is usually ubiquitous in soil and water, but increasing reports of its isolation in human infection arouse attention for it.

A 37-year-old woman presented with tender erythematous indurated patches on lateral side of right knee, which was developed following a bee venom acupuncture procedure. Biopsy revealed chronic granulomatous inflammation with abscess and subsequent pus culture revealed *Mycobacterium massiliense* growth. The patient treated with 6 months of oral clarithromycin and 14 days of intramuscular amikacin and did not show recurrence afterward. Herein, we report a case of *Mycobacterium massiliense* granulomatous infection following a bee venom acupuncture procedure.

PO02-001

### A case of Kaposi varicelliform eruption in adults and literature review

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Age: 31 Sex: male, The patients chief complaint was repeated facial erythema with desquamation half a year, he also complained about facial blister since five days ago. Physical examination: the patient's head and auricle have different sizes of erythema that are covered with small adhesive scales. His right face has a great number of flaky epinephelos water blisters, in the midst of the water blisters are the hilar depression surround by flush, which are covered with crust. The water blisters in the neck and behind the ear can touch with the lymph node enlargement. Blood RT:  $11.3 \times 10^9/L$ . Neutrophil:  $7.7 \times 10^9/L$ . Cellular immune function: F.CD8% 14.8%, F.CD4/CD8 3.32, CD3+CD25+ 15.6%, CD4+CD25 13.4%. Allergen-Specific IgE: Dermatophagoides pteronyssinus 3.18 kU/L, milk 3.55 kU/L. Bacterial culture of pyogenic fluids: a mass of group A streptococci, a mass of *Staphylococcus aureus*. HSV-II -IgM: Negative. Diagnosis: Kaposi's varicelliform eruption in adults.

PO02-006

### Case series of *Mycobacterium abscessus* complex cosmetic surgical site infections in China

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**Objectives** To study the clinical and pathological characteristics of cutaneous *Mycobacterium abscessus* complex (MABC) infections due to cosmetic surgery, and investigate the diagnostic criteria, fast diagnostic methods and therapeutic principal.

**Methods** Totally 15 cases of cutaneous MABC infections due to cosmetic operations were confirmed in the Institute of Dermatology, Chinese Academy of Medical Sciences from January 2017 to March 2018. The microbiologic and clinical data were reviewed. All the patients accepted pathological examination, tissue culture and identification of species by analysis of hsp65, 16S rRNA, rpoB, 16S-23S ITS in tissue DNA. Drug sensitivity testings were taken to screen 16 antibiotics.

**Results** 15 patients all caused by cosmetic operations including autogenous fat injection, botulinum toxin injection, hyaluronic acid injection and tattoo. And 7 cases were *Mycobacterium abscessus*, 5 were *Mycobacterium massiliense*, 3 were *Mycobacterium bolletii*. Nodule, plaque, ulcer and sious were most common lesions in MABC infection. Infective granuloma was most common histopathological appearance. Identification of mycobacterial species by analysis of 4 housekeeping genes in tissue DNA was more sensitive than traditional bacterial culture. For the treatment of MABC infection, clarithromycin, moxifloxacin and ethambutol were commonly used (combination of two antibiotics, or three antibiotics), with the cure rate 89%.

**Conclusion** All the cases caused by cosmetic surgery, so the safety of the operation should be noticed. Final diagnosis must be made according to the identification of the microorganism. Treatment regimens should be decided according to the results of antibiotic susceptibility testing.

PO02-009

**A case of ulcerative scrofuloderma misdiagnosed as necrobiotic xanthogranuloma for 9 years cured in 3 months**

Yi-Guo Feng

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Ulcerative form of scrofuloderma, which is now very rare to be seen, results from the direct invasion of the tubercle bacillus into the skin from an underlying contiguous tuberculous focus. A 54 year-old male presented with well-defined, very extensive ulceration and exudation on the scalp, the erythematous patch on the back for 9 years. He had been diagnosed as necrobiotic xanthogranuloma 9 years before and been admitted to the in-patient ward in a very famous university. The lesions did not improve much and were getting larger. He was biopsied for two times, and then an ulcerative form of scrofuloderma was considered. He was cured by anti-tuberculosis therapy. China has a large population of tubercle bacillus infection, so its infection of the skin and associated disease should always be kept in dermatologists' mind.

PO02-016

**Evaluation of serum-based exosomal miRNAs as potential diagnostic biomarkers for leprosy**

Wei Gao, Hongsheng Wang

*Institute of Dermatology, Chinese Academy of Medical Sciences and Peking Union Medical College, Nanjing, China*

**Background** Circulating microRNAs (miRNAs) in serum exosome may serve as promising diagnostic biomarkers for patients with leprosy.

**Methods** We identified miRNAs in different groups of serum exosome by miRNA-chips. And using quantitative reverse transcription polymerase chain reaction (qRT-PCR) based on SYBR Green method, we expanded up to 30 samples per group to verify 10 differentially expressed miRNAs from serum exosome samples and normal control group according to the initial screening phase.

**Results** Consequently, we isolated the exosome from the serum samples and serum exo-miR4485-3p was significantly overexpressed in leprosy patients compared with NCs. Receiver operating characteristic (ROC) curve analyses were performed to evaluate the diagnostic potential of selected miRNAs. MiR4703-5p was significantly up-regulated in T-lep Leprosy patients ( $n = 30$ ). Furthermore, the expression levels of miR320e was significantly elevated in exosomes from L-lep leprosy serum samples ( $n = 30$ ).

**Conclusions** We identified miR4485-3p in serum exosome for the potential detection of leprosy.

PO02-018

**Cutaneous infections due to nontuberculous mycobacteria: a retrospective study of 95 cases**

Wei gao, Hongsheng Wang

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**Objective** Take the group of diseases named cutaneous nontuberculous mycobacterial (NTM) infections as object of the study, and investigate the diagnostic criteria and therapeutic principal.

**Methods** All retrospective patients diagnosed with cutaneous NTM disease between January 1, 2011 and March 31, 2018 in the Institute of Dermatology, Chinese Academy of Medical Sciences were examined for diagnosis. The microbiologic and clinical data were reviewed, and the skin biopsy specimens were reassessed.

**Results** This study included 95 cutaneous NTM patients. The nodular lesions were the most common skin lesions (76%). Traumatic injuries (24%) were the most frequent cause of infections. 20% of the patients had immunosuppressive conditions. Pathologic examination showed non-caseous necrosis granuloma changes with 70.83%

of the samples. All the species can grow in the mediums and positive results of smear acid fast staining. The results of the identification of the species included 18 kinds of species. Identification of mycobacterial species by analysis of RpoB, Hsp65, 16S rRNA gene in tissue DNA was more sensitive and faster than traditional bacterial culture. All the patients accepted treatment of antibiotics.

**Conclusions** Trauma and immunosuppressive condition might be the possible cause. Non-caseous necrosis granuloma was the most common feature of pathology. Molecular biological method can identify common or rare NTM accurately. *M. marinum*, *M. abscessus* and *M. haemophilum* were the most three common species in the group. Patients infected with RGM should take drug susceptibility testing.

PO02-025

### **Progress of treatment of cutaneous nontuberculous mycobacterial infections**

Wei Gao, Hongsheng Wang

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Cutaneous nontuberculous mycobacterial infections is a kind of cutaneous disease caused by nontuberculous mycobacterium infection. Most of them are natural resistant to the common anti-tuberculosis drugs and because they are lack of standard treatment schemes. It is needed to choose different antibiotic drugs according to different types of mycobacterium and refer to the drug sensitivity test results in vitro. Meanwhile, individual immune status also affect therapeutic effect. Recently, researches on new drugs, immunotherapy, vaccine are undergoing. Progress of treatment of common cutaneous nontuberculous mycobacterial infections are summarized in the following article.

PO02-003

### **Listeria monocytogenes meningitis in a young girl with systemic lupus erythematosus**

Xianqiong Huang

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*Listeria monocytogenes* is a Gram-positive, rod-shaped, facultative anaerobic, non-spore-forming bacterium. It is an important food-borne pathogen that can cause septicaemia, gastroenteritis, encephalitis, and meningitis in immunocompromised humans such as systemic lupus erythematosus (SLE). The majority patients with SLE have received glucocorticoids (GCs) maintenance therapy and immunosuppressive treatment who usually have abnormal cell-mediated immunity.

Systemic lupus erythematosus is an autoimmune disease that can affect many internal organs, such as skin, kidneys, heart, and nervous system. Childhood systemic lupus erythematosus is more serious than adult. Whereas drugs used to treat lupus can also induce chronic organ dysfunction. Glucocorticoid treatment of children with SLE can cause very serious adverse consequences. *Listeria monocytogenes* meningitis is uncommon in SLE, but it is life-threatening infection in patients with SLE, either from disease-related immunological dysfunction itself or immunosuppressive therapies. Herein, we report a 17-year-old girl with SLE for 9 years who developed Lupus nephritis, Cushing syndrome, eventually died in *Listeria Monocytogenes* meningitis. This report will likely heighten the awareness of side effects of treatment in children with SLE and fatal infections.

PO02-006

**Skin ulcer on the penis: a case report**

Abdulrahman Amer, Li-Jiu Hong

*First Hospital of China Medical University*

A 50-year-old man presented to our Department with a 3 months history of Progressive growth of an ulcerating lesion on the upper side of his penis. The ulcer started as asymptomatic bean-sized papule, which gradually increased in size, ruptured and turned to a regular marginal ulceration. In spite of various Intermittent systemic and topical antibiotic treatments used by other practitioners (such as penicillin, erythromycin and Potassium permanganate solution), the lesions did not response, in contrast, it became painful and exudation was noticed. The patient was then transferred to our inpatient department for systemic treatment and further examination.

PO02-008

**Effect of facial microflora of pregnant women on several common skin diseases and skin barrier function**

Yu Huang, Xing-Hua Gao

*No.1 Hospital of China Medical University*

During pregnancy women tend to have physiological or pathological Changes of skin and its appendages. Melasma, acne vulgaris and atopic eruption of pregnancy are common skin diseases during pregnancy which may be related to the colonization of facial flora. Transepidermal water loss slightly increased during pregnancy and puerperium, but the cause and clinical significance are not clear. Studies based on non-pregnant population indicate that skin flora has a certain effect on skin barrier function, such as the occurrence and development of melasma, acne vulgaris and other diseases are related to the destruction of skin barrier function. The study of facial flora is of guiding significance on clarifying the pathogenesis of skin disease and the changes of skin barrier function in pregnant women, and it may provide new ideas for treatment.

PO02-011

**A giant verruca plantaris treated with acitretin**

Xiang Luo

*Chengdu Second People's Hospital*

A 38-year-old man presented to our outpatient department with giant verruca plantaris on the right foot. The wart gradually involved the whole plantar and toes in a period of 2 years (A1/A2). During this period, patient underwent various treatments including laser vaporization, cryosurgery and local acid application, but all failed. RT-PCR indicated the lesion was caused by the infection of HPV-1, and HIV testing was negative, but the blood glucose level was above 20.00mmol/L. The patient was later diagnosed with diabetes; we speculated that the untreated diabetes had conduced to the tremendous size of the neoplasm. The patient was treated with acitretin, 30mg/d, meanwhile insulin and metformin were prescribed to the patient for the diabetes.6 weeks later, the neoplasm was significantly atrophied and intenerated, thickness of the lesion declined 60% at least, and some part of the wart almost completely subsided (B1/B2). Verruca plantaris is a kind of refractoriness disease. This successful treating case may supply doctors a new mode of thinking for verruca, especially the giant ones.

PO02-012

**Herpes zoster infection with sepsis**

Na Cao

*No. 2 Renmin Hospital Chengdu*

Herpes zoster is a common disease of dermatology. It occurs in the middle-aged and elderly people and usually has a certain self-limitation. However, herpes zoster with corneal perforation and sepsis is relatively rare in clinical practice. We will report a case of herpes zoster in the head and face. Corneal ulcers, sepsis, and septic shock occur during hospitalization. Progress is rapid. Intensive anti-infective treatment in the intensive care unit is ineffective. She quits her treatment before leaving hospital to die.

PO02-013

**A report of two cases of misdiagnosis of leprosy**

Han Li

*Department of Dermatology, Second People's Hospital of Chengdu*

**Objective** To improve the diagnostic rate of leprosy, so as to reduce misdiagnosis.

**Methods** The clinical and laboratory data of 2 patients with leprosy who had been misdiagnosed were retrospectively analyzed. The reliable diagnosis basis and the cause of misdiagnosis were discussed.

**Results** One case was misdiagnosed as eczema. Another case was diagnosed as erythroderma. Is the neglect of the lesions of pain, touch, temperature and peripheral nerve caused by check. It is emphasized that patients with suspected leprosy should be aware of the importance of sensory, neurological function, skin tissue fluid and biopsy acid fast stain.

PO02-014

**A case of Kaposi varicelliform eruption in adults**

Lisha He

*No. 2 Renmin Hospital Chengdu*

A 24 year-old woman, with facial papules, vesicles, itching for 1 week. Skin section circumstance: involving the entire face. Skin lesions in the left chin is the most serious. Grain to green bean size blisters on the basis of erythema, with clarified blister fluid, and isolated umbilicus can be seen in part of blisters. The distribution of the lesions on the left chin is intensive and unmixing. The lesions can also be seen on the double eyelid and oral lip.

PO02-015

**A case report of erysipeloid**

Qiao-Mei Sun, Tao Chen, Li-Xin Fu, Hao Yang, Jin Wang

*Second People's Hospital of Chengdu*

The patient is a female, 53 years old, her profession is a pork peddler. Because of "right middle finger swelling and burning pain for 4 months" came to the hospital. Physical examination: the right hand middle finger, metacarpophalangeal joint obviously swollen, local skin tension, surface dark red, pressure pain, right hand middle finger flexion, extensional activity limited, no vesicles, ulcer and osmotic fluid. On the right hand, there was a clear

purple reddish swelling and erythema on the right side, and no swelling or tenderness on the same elbow and axillary lymph nodes. Auxiliary examination: ESR 55mm/h, blood routine, PCT and liver and kidney function were not abnormal. The culture of bacteria and fungi was negative. Pathological examination suggests nonspecific inflammation. Diagnosis: erysipelas (limited). Treatment: 6 million 400 thousand units of penicillin q12h IVGTT \* 14d, topical traditional Chinese medicine, fusidinsaur, semiconductor laser therapy. The swelling and pain of the right hand erythema were faded, and the swelling and pain of the middle fingers were also significantly reduced, and the activity limitation was better than before. After January telephone follow-up, the swelling of the patient had completely subsided, and the treatment was healed.

PO02-019

### **A case of misdiagnosis of adult infectious mononucleosis**

Xia Chen

*No.2 Renmin Hospital Chengdu*

Infectious mononucleosis (IM) is an acute proliferative disease of mononuclear macrophage system caused by Epstein-barr virus(EBV).This disease is common in children.Adults are difficult to diagnose early because of their low incidence and various clinical manifestations.They are easy to misdiagnose or miss.We report a case of misdiagnosed cases of infectious mononucleosis in adults.To improve clinicians' understanding of the disease and prevent misdiagnosis.

PO02-020

### **Infant infected chickenpox after being in more frequently contact with the member of the same family who is diagnosed as herpes zoster: A case report**

Jiang-Mei Xu

*Affiliated Hospital of North Sichuan Medical College*

**Objective** Demonstrating that patients with zoster have been found to be contagious to those who are in groups of susceptible individuals. Transmission of herpes zoster is not only direct contact cutaneous lesion, but also air borne.

**Methods** Report a case that infant infected chickenpox after being in more frequently contact with the member of the same family who is shingles.

**Results** From her medical history and physical examination, ill infant with a medical history of similar cutaneous rash, routine varicella vaccination and intimate contact with patients of varicella was excluded, herefore, in this study, we deduce that infant developed varicella after exposure to her grandfather with zoster.

**Conclusion** In groups of susceptible individuals, including infant, preschool child, patients using immunosuppressor, immunologic deficiency syndromes and those who have on immunity to VZV, should take infection control precaution to zoster, because of its contagiousness to a certain extent. As a result, clinical physician ought to emphasize that herpes zoster may be contagious among susceptible hosts.

PO02-021

### **A case of mycobacterial infection after facial cosmetic injection**

Zhen Zhang, Chao-Ying Gu

*HuaShan Hospital Affiliated FuDan University*

One case of mycobacterial infection after the injection of "botulinum toxin" was reported. Patient, female, 39 years old. Seek redness for one month after the injection. Dermatology examination at the time of admission: The frontal part was scattered in many peas, the size of the tough red nodules, and the size of the red cysts of the double licking

pigeon eggs was irregular, with a fluctuating and tender sensation and a high skin temperature. After admission, she underwent facial abscess incision and drainage. The pus was taken for bacterial, fungal, and tuberculosis cultures. The etiology of the pus was examined. The acid-fast stained smears were found to be acid-fast bacilli 2+, and the acid-fast bacilli were cultured: positive for mycobacteria. Sequencing was used to detect the *Mycobacterium tuberculosis* sequence. Clarithromycin tablets 250mg bid and moxifloxacin tablets 0.4 qd oral treatment. At the time of discharge, she was examined with a dark red patch on both hernias. The incisions healed without obvious redness, suppuration or exudation, and the masses of the red nodules diffused in the frontal part were not obvious. At present, further treatment follow-up.

## PO02-022

### Tuberculous chancre on the left knee in a 3-year-old child

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Tuberculous chancre is a rare form of cutaneous tuberculosis. We present a case of a 3-year-old child with a granuloma on the left knee with the enlargement of inguinal lymph node. The diagnosis was based on clinical evaluation, examinations and special histopathological feature and the positive intradermal reaction to tuberculin. The patient was successfully improved by surgical excision of the lesion and taking anti-tuberculosis therapy. After six month of anti-tuberculosis treatment, the patient got the paradoxical reaction presenting the enlargement of inguinal lymph node. After the surgical excision of the lymph node and the further investigation on mycobacterial culture and biopsy, we confirmed that there was no relapse of the disease and no need to change the therapy. Tuberculosis should be considered a potential diagnosis in the case of a cutaneous granuloma with free tuberculous immunization.

## PO02-023

### Report a case of ecthyma by the infection of *Staphylococcus Aureus* and *Candida Albicans*

Pei-Qiu Zhu

Peking University Third Hospital

**Objective** Report a case of ecthyma by the infection of *Staphylococcus aureus* and *Candida albicans*.

**Methods** A 54 year-old female patient was hospitalized for 2 weeks history of erythema that progressed to pustules and ulcerations, some of them covered with a necrotic crust, with a numb state of lower limbs. The lesion scattered on extremities symmetrically, which is obvious on legs. *Staphylococcus aureus* and *Candida albicans* was cultured from the purulent secretion, whereas *Candida* from the tissue. Histopathology indicated necrosis of part epidermis and dermis besides formation of ulcer. A lot of pyocytes appeared in necrosis tissue. A large number of spores and hyphae were seen among the pus, the corneum and the collagen fibers. Focal necrosis interspersed within subcutaneous tissue with tissue cell response.

**Results** The patient was diagnosed with ecthyma based on clinical manifestation, outcome of secretions and tissue culture and pathology of lesion. The location of spores and hyphae indicated by pathology is too superficial to taking primary fungoid infection for granted. Aggressive antibacterial treatment improved patient's prognosis. The patient had contact history of stray cats. Besides, diabetes was first diagnosed for her and so did the thrombogenesis and varicosity of lower limbs. Ulceration turned into crust and got away from skin after levofloxacin transfusion via venous combined with antifungal and antibacterial ointment topically for 2 weeks.

**Conclusion** External environment, immunocompromised status and the poor circulation of local blood jointly lead to the onset of this case.

PO02-024

**A case report of faical infection caused by *Serratia marcescens***

Yong-Xuan Hu, Zu-Hao Mao, Kang-Xing Liu, Yan-Qing Hu, Xian-Yi Zhou

*The 3rd Affiliated Hospital of Southern Medical University*

A 35-year-old female presented to the Dermatology and Venerology department with erythema, blister-like lesions in the left side of nose, nasolabial for 6 months. She had a history of acne 6 months ago, and had self-extrusion, and then there was flaky erythema and blister-like lesions in the left side of nose, nasolabial. She come to other hospital for treatment several times, consider “herpes simplex”, “acne”, anti-viral drugs and laser treatment was used, but without improvement. The physical examination revealed a diffuse erythema and some pseudo-blister papules in the left side of nose, nasolabial. Dermoscopic displayed flaky erythema and some telangiectasia. Direct smear examination for the lesions showed some Gram-negative bacillus but fungi were not found. Fungal culture was negative, bacterial culture showed yeast-like smooth colonies with red pigment production growth and biochemical identification showed *Serratia marcescens*. Pathological examination for the pseudo-blister papule showed some chronic inflammatory changes and bacteria can be found in the hair follicle. Antibody testing for HIV-1 and 2 was negative, no other testing for underlying immunosuppression was performed. Polymerase-chain-reaction assays of samples obtained from the lesions were negative for herpes simplex virus 1 and 2. According to susceptibility results for the isolated *Serratia marcescens*, she was treated with oral levofloxacin (0.2 g, twice one day) for 8 months, and prescribed compound polymyxin B ointment topical. The symptoms was significantly improved and was followed currently.

**PO03 Basic Research**

PO03-004

**Using the patent instrument to measure hypersensitivity ear swelling reactions in mice**

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**Background** Contact hypersensitivity (CHS) is an experimental model of allergic contact dermatitis (ACD) that can be stuied in mice .For CHS responses,mice are immunized by pai nting with a reactive hapten, such as 1-fluoro-4,6-dinitrobenzene(DNFB).The choice of the type of instrument chosen to measure CHS in mice as assayed in CHS model,influences the experimental results.In this manuscript we present the patent instrument that can be used to evaluate CHS in mice more precisely and conveniently.

**Method** We choose caliper measurement method, patent instrument measurement method, microscopic measurement to measure hypersensitivity ear swelling reactions in mice .

**Results** Our study showses that the patent device measures the mice ear swelling more closely to the true thickness of the mice ear and improves the accuracy of the mice ear swelling model (T test  $P < 0.05$ )

**Conclusion** Different measurement methods lead to different results, choose a reasonable and accurate measurement method will help to get true and accurate test data. We conclude that the patent instrument to measure mice ear swelling has many advantages.

PO03-006

**DJ-1 protects against oxidative stress in melanocytes by regulating mitochondrial function**

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**Background** DJ-1 is widely expressed in many tissues and functions as a protective protein against oxidative stress; however, its protective role in oxidative damage in melanocytes has not been studied. The aim of this study was to investigate whether DJ-1 is expressed in human melanocytes, and to determine its protective effect against oxidative stress via the mitochondria pathway.

**Methods** The expression of DJ-1 at the mRNA and protein level was verified in the melanocyte cell line, PIG1. To determine its protective role, short interfering RNAs were used to downregulate the expression of DJ-1. The experiments were carried out in Mock group, NC group and siRNA group, respectively and treated with H<sub>2</sub>O<sub>2</sub> for 12 or 24 hours. Then the morphological changes, cell viability, intracellular ROS levels and mitochondrial membrane potential for each transfected group were monitored. All statistical analysis was performed using one-way analysis of variance (ANOVA).

**Results** The expression of DJ-1 in PIG1 melanocytes was verified. Compared with the Mock and NC groups, cells in the DJ-1 siRNA group had more dead cells observed using an inverted microscope, more cytoplasmic vesicles, and more damaged mitochondria under transmission electron microscope. Those morphological changes were consistent with the decreased cell viability ( $P<0.001$ ) and increased cell apoptosis ( $P<0.01$ ) in the DJ-1 siRNA group. The knockdown of DJ-1 in PIG1 increased the accumulation of intracellular ROS and decreased the mitochondrial membrane potential (MMP) significantly ( $P<0.001$ ), which indicated mitochondrial dysfunction.

**Conclusions** DJ-1 is expressed in human melanocytes and protects against H<sub>2</sub>O<sub>2</sub>-induced oxidative stress by regulating the mitochondrial homeostasis.

PO03-013

**Significance and main methods of hair morphological research**

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Human hair, especially the scalp hair, as an important epidermal appendage, performs both physiological function and psychological influence of human. Morphological structure of hair changes while suffering from endocrine environment, cytokines, diets, drugs, microorganisms and other various factors. Seeking affecting factors and variation rules of human hair via morphology has great significance for diagnosing diseases, making treatment decisions and understanding variation of endocrine environment. Various parameters are used to describe hair morphology and each of them has different detection means. For example, inter-scale distance, diameter, density, color, luster, thickness, cross section, hair cuticle thickness, hair cuticle layer, roughness, detected by optical coherent tomography, optical microscope, scanning electron microscope, transmission electron microscope, transmission electron microscope, optical fiber diameter analyzer, and so on. The differences between methods describing identical morphology obviously exist. This paper aims at summarizing the detection means of hair morphology and illuminating differences and characters of them.

PO03-015

**Protective roles of transcription factor NFIL3/E4BP4 in systemic lupus erythematosus**Zijun Wang<sup>1,2</sup>, Jinghua Yin<sup>1,2</sup>, Ming Zhao<sup>1,2</sup>, Qianjin Lu<sup>1,2</sup>

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**Objectives** Systemic lupus erythematosus is an autoimmune disease characterized by activated T and B cell responses against self-antigens. The exploitation of therapeutic target is urgently needed and we investigated the role of a transcriptional factor E4bp4 in lupus pathogenesis.

**Methods** In order to evaluate the role of E4bp4 in lupus, we generated E4bp4 conditional knockin mice (CKI). We built pristane-induced experimental lupus model in E4bp4-CKI mice by a single intraperitoneal injection of pristane. The urine protein was measured from the first week to the 32<sup>th</sup> week after injection. Pathological changes were assessed in the kidney obtained at the experimental end point by Hematoxylin and Eosin (HE) as well as immunofluorescence staining. The levels of autoantibodies and inflammatory cytokines were measured by flow cytometry and enzyme-linked immunosorbent assay (Elisa) at different time intervals after induction.

**Results** Pristane-treated E4bp4-CKI mice slowed down the onset and progression of disease activity and decreased the proteinuria and autoantibody production, immune complex deposition and severity of renal damages as compared to WT mice. E4bp4 downregulates the expression of inflammatory cytokines in spleen CD4<sup>+</sup>T cells and reduces the IgG and C3 immunocomplex deposits in renal biopsies. Further study reveals that E4bp4 inhibits Bcl6 and Il21 genes expressions which are the key factors of Tfh cell, thus in turn influencing Tfh cell differentiation.

**Conclusions** E4bp4 has the potential to be a protective regulator of T cell immunity. This might be an important molecular mechanism of the therapeutic effects of E4bp4 against SLE in vivo.

PO03-027

**Mouse model supports gene “X” as a new susceptibility gene for alopecia areata**

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*Juntendo University Graduate School of Medicine*

Alopecia areata (AA), a complex genetic, autoimmune disease of hair follicles, is the common form of hair loss which can occur patchy or confluent hair loss on the scalp and/or other areas of the body. The pathogenesis of AA remains largely unknown. A few AA susceptibility gene loci, including the human leukocyte antigen (HLA) locus and non-HLA loci, have been reported. In addition, the strong association of HLA-C locus with AA has been indicated. We have very recently identified non-synonymous single nucleotide variant in the gene “X” in HLA locus by next generation sequencing of risk haplotype. The purpose of this study is to develop a spontaneous AA mice model to investigate the effect of “X” gene deficiency on the AA pathogenesis, using the c57BL/6N “X” gene knockout which were subjected to water avoidance stress (WAS) test. Eight weeks after WAS test, in contrast to wild-type mice, all knockout mice exhibited non-inflammatory foci of alopecia on the dorsal aspect of the heads and bodies. Our results strongly support that gene “X” is a susceptibility gene for AA.

PO03-035

**Ionizing radiation, but not ultraviolet radiation, induces mitotic catastrophe in mouse epidermal keratinocytes**

Zhi-Cao Yue

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Ultraviolet radiation (UVR) and ionizing radiation (IR) are common genotoxic stresses that damage human skin,

although the specific damages to the genomic DNA are different. Here we show that in the mouse glabrous skin, both UVR and IR induce DNA damage, cell cycle arrest, and condensed cell nuclei. However, only IR induces mitotic catastrophe (MC) in the epidermis. This is because UVR induces a complete blockage of pRB phosphorylation and cell cycle arrest in the G1 phase, whereas pRB phosphorylation remains positive in a significant portion of epidermal keratinocytes following IR exposure. Furthermore, Cyclin B1 expression is significantly down-regulated only by IR but not UVR. Finally, there are more MC cells in the epidermis of p53<sup>-/-</sup> and K17<sup>-/-</sup> mice after IR exposure as compared to wild type mice. Our results suggest that although both IR and UVR are genotoxic, they show distinct impacts on the cell cycle machinery and thus damage the epidermal keratinocytes via different mechanisms.

PO03-039

### Citron essential oils alleviate mediators related to rosacea pathophysiology in epidermal keratinocytes

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**Background** Citron is well-known for its abundant anti-oxidative and anti-inflammatory ingredients such as vitamin C, polyphenol compounds, flavonoids and limonoids. In this study, we aimed to evaluate effects on rosacea mediators by citron essential oils in the activated keratinocytes in vitro.

**Methods** Normal human epidermal keratinocytes (NHEKs) were stimulated with 1 $\alpha$ , 25-dihydroxyvitamin D<sub>3</sub> (VD<sub>3</sub>) and interleukin-33 (IL-33) with LL-37 to induce rosacea mediators such as kallikrein 5 (KLK5), cathelicidin, vascular endothelial growth factor (VEGF) and transient receptor potential vanilloid 1 (TRPV1). These mediators were analyzed after treatment of citron seed and unripe citron essential oils. The analysis was performed by RT-PCR, quantitative real-time PCR, immunocytofluorescence and ELISA.

**Results** In NHEKs, mRNA and protein levels of KLK5 and LL-37 induced by VD<sub>3</sub> were suppressed by citron seed and unripe citron essential oils. Also, mRNA and protein levels of VEGF and TRPV1 induced by IL-33 with LL-37 were suppressed by citron essential oils.

**Conclusion** Citron essential oils have suppressive effects on rosacea mediators in activated epidermal keratinocytes, which indicates that the ingredients may be a valuable adjuvant therapeutic agent for rosacea.

PO03-040

### Air-borne pollutants and other urban-rural differences in life-style and environment are associated with skin appearance and health

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**Introduction** Long-term environmental pollutant exposure has been hypothesized to affect skin appearance and health. Herein, we report a cross-sectional study to investigate the correlations between air pollutant exposure and skin appearance as well as skin health endpoints.

**Methods** In this retrospective study, around 700 urban and rural Shanghai residents were recruited. For each subject, demographical, social-economical, life-style and skin health history information was collected through questionnaires, skin hydration and elasticity were measured, facial wrinkle, pigmentation and perceived age were analyzed based on VISIA-CR images. Individual exposure to particulate matter (< 10  $\mu$ m, PM10) and nitrogen dioxide species (NO<sub>2</sub>) was estimated based on geo-tagging of their residence address. Linear models were created to assess the relationships between air pollution exposure and appearance or skin health.

**Results** The multivariate linear models reveal that PM10 and NO<sub>2</sub> exposure is negatively associated with skin firmness and elasticity. Pollution exposure also correlates with more severe eye bag, dark circles, and higher

incidence of self-reported eczema. However, probably due to the strong covariate of low level of sun-exposure, negative correlations were found between pollution exposure and pigmentation, wrinkles and perceived age.

**Conclusions** Overall, the data indicate potential connection between air pollutant exposure and accelerated skin aging signs, as well as risk of developing skin diseases such as eczema. At the same time, it is clear that photo-exposure remains the overwhelming factor that impacts skin pigmentation and wrinkle formation. Therefore, both photo-protection and air pollution protection are important as part of urban skin care regime.

PO03-041

### **Air pollution (ozone & particulates) and impact on skin**

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Air pollution has been a growing worldwide concern and has been shown to have dramatic effects on health. Pollutants in the air are not always visible and have many different sources. Two of the main components of pollution are coming from ground ozone pollution and from particulates matter such as PM2.5. Here, we will present results on how either ozone pollution or PM2.5 affects skin cells and describe the damages they induced.

After exposing skin cells to ozone or PM2.5, we show that, in both cases, it results in an increase of cellular oxidative damage, an increase of inflammatory mediators and an increase of DNA damage, as well in melanocytes, an increase of tyrosine activation and melanogenesis. Moreover, after exposure to pollutants, skin models show a compromised skin barrier integrity. Combining ozone and PM2.5 exposures to skin cells, we measured an even further increase of skin cells oxidative damage.

Finally, after ozone exposure, we looked deeper in different skin cell repair mechanisms and for the first time, we show that ozone pollution has a significant effect on level of per-1 clock gene and autophagy, decreasing both types of activity in skin cells. Over time, the decline of these important cellular repairs will result in even more accumulation of damage in skin cells.

Taken together, our results demonstrate that pollutants such as ozone and PM2.5 create an accumulation of damage in skin cells and ultimately will accelerate premature aging.

PO03-042

### **Defect of BDH2 promotes DNA hypomethylation in CD4+ T cells of systemic lupus erythematosus**

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**Background** A lot of evidences have confirmed that DNA hypomethylation plays an important role in the pathogenesis of systemic lupus erythematosus (SLE). However, the mechanism of DNA hypomethylation in lupus CD4+ T cells remain unclear. Previous study showed that depletion of the mammalian siderophore by inhibiting expression of 3-OH butyrate dehydrogenase (BDH2) results in abnormal accumulation of intracellular iron and mitochondrial iron deficiency in cultured mammalian cells. In this study, we investigate whether BDH2 is involved in regulating DNA hypomethylation in CD4+ T cells of SLE patients.

**Methods** 20 SLE patients and 20 healthy subjects were recruited. CD4+ T cells were isolated by magnetic beads. All patients fulfilled at least 4 of the SLE classification criteria of ACR. mRNA and protein levels were detected by real-time PCR and western blot. Global DNA methylation level was measured by Global DNA Methylation Assay-LINE-1 kit. CD4+ T cells were transfected by nucleofector.

**Results** Compared with normal controls, BDH2 mRNA and protein levels were decreased significantly in SLE CD4+ T cells, which are positively correlated with the global DNA methylation levels. Knockdown of BDH2 with siRNA in CD4+ T cells from healthy subjects decreased the global DNA methylation level compared with negative control. In contrast, overexpressing BDH2 with expression plasmid can increase significantly the global DNA methylation level in SLE CD4+ T cells compared with negative control.

**Conclusion** BDH2 expression was defect in CD4+ T cells of SLE patients, which contributes to the genomic DNA hypomethylation of CD4+ T cells in SLE patients.

PO03-063

### **AQP3 involves in skin wound healing maybe through interacting with Coronin 1c**

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AQP3 was reported to have a role in wound healing and migration of keratinocytes and fibroblasts, but the mechanism remains barely known. According to the data in our pre-experiment that AQP3 can bind to Coronin 1C. In the present study, we clarified the roles of AQP3 in migration of NHSFs by regulating expression of AQP3 or Coronin 1C. We found that AQP3 can bind to Coronin 1C in NHSFs, further can promote skin wound healing. This discovery was successfully verified by immunofluorescence co-localization and endogenous co-ip experiments in NHSFs. To further study the mechanism of AQP3 promoting skin wound healing, we examined the skin wound healing ability of the mouse and the changes of AQP3 or Coronin 1C level. We found that in AQP3<sup>-/-</sup> mouse, the skin wound healing was delayed. In the injury tissue, the expression of AQP3 and Coronin 1c were significantly increased in the WT mice, while were decreased in AQP3<sup>-/-</sup> mouse. Therefore, the skin wound healing ability may be decreased with the decreased expression of Coronin 1c caused by AQP3 knockout, resulting in decreased migration ability of fibroblasts in the skin. The results showed that AQP3 interacting with Coronin 1c involves in the process of skin wound healing, providing a new explanation for its role in skin would healing.

PO03-064

### **Involvement of AQP3 in TGF- $\beta$ induced migration of epidermal cell migration via downstream Smad3 phosphorylation during skin wound healing**

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Skin wound healing is a multi-step process involving the migration of basal keratinocytes in epidermis, which has strong expression of water/glycerol channel aquaporin-3 (AQP3). AQP3 has been reported to have a role in wound healing and migration of keratinocytes, but the mechanism remains barely known. In this study, we show that AQP3<sup>-/-</sup> mice have defects in wound healing, which correlates with the low level of phosphorylated Smad3 in keratinocytes. In vitro study, by migration and scratch assays, we found that migration of HacaT cell significantly increased after TGF- $\beta$  treatment and was reduced in that with AQP3 knocking-down pretreatment, which is consistent with the phosphorylation level of Smad3 in those cells. Our results provide an evidence for involvement of AQP3 in TGF- $\beta$  induced migration of epidermal cell migration via downstream Smad3 phosphorylation and hence a new explanation for its role in skin would healing.

PO03-067

**MiRNAs involved in ultraviolet radiation induced bystander effects**

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**Background** Ultraviolet (UV) is a widespread natural radiation source which can cause varying degrees of photo aging in irradiated cells. A rapidly growing body of experimental evidence indicates that similar responses can be found in adjacent non-irradiated cells. Recent researches indicate this phenomenon, which is termed bystander effects, is possibly caused via microRNAs (miRNAs).

**Methods** In this study, we set up a UV-induced bystander effect model of human skin fibroblasts in vitro. Differentially expressed miRNAs in irradiated cells, bystander cells and culture medium were identified by using microarray and quantitative real-time polymerase chain reaction (qRT-PCR).

**Results** MiR-4655-3p and miR-769-5p were found and further investigated for time-related expression, as well as the expression of precursor miRNAs (pre-miRNA). The potential biological pathways of these two miRNAs were also predicted. Up-regulation of miR-4655-3p and miR-769-5p by miRNA mimics in non-irradiated cells can induce bystander-like effects.

**Conclusion** Taken together, our research reveals that miR-4655-3p and miR-769-5p is involved in bystander effects.

PO03-071

**Suitable endogenous control for the quantification of serum exosome microRNAs**

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Exosome microRNAs have been detected in serum, and microRNA (miRNA) profiles from serum exosome have now been related to many kinds of diseases. Because of their stability and disease resistance, serum exosome miRNAs may be an ideal material for biomarkers of diseases. However, owing to the lack of a suitable internal reference gene has impeded research and application of serum exosome miRNAs. Currently, U6 and miR-16 are the most common endogenous references in the research of miRNAs in tissues. We performed Agilent microarray-based serum exo-miRNA profiling of 20 leprosy patients and 20 controls to detect the expressions of U6 and miRNAs. Profiling was followed by qRT-PCR with SYBR Green method in 50 patients (20 with leprosy patients and 10 with HHC) and 20 health controls. The results of microarray showed that with the exception of U6, Ct values of miR-16, miR-21, miR-4485-3p, miR-19a and miR-134 in serum exosome samples of leprosy patients were greater than control samples. The results of 90 cases showed large fluctuations in U6 expression. The difference between the greatest and the least levels of expression was 4.29 for delta Ct values, and 1.03, 1.23 for miR-16 and miR-21. Meanwhile the expression of miR-16 and miR-21 remained relatively stable after freezing and thawing. Finally, our results suggested that miR-16 and miR-21 are suitable as internal reference genes in the research of serum exosome miRNAs.

PO03-077

**Silver nanoparticles induce Egr-1 dependent psoriasin expression via the ERK and p 38 pathways**

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**Background** Silver nanoparticles (Ag-NPs) have been known to prevent bacterial infection and improve a cutaneous wound healing due to their antimicrobial activity. However, the mechanism of Ag-NPs' antimicrobial activity is poorly understood. The aim of this work is to find out relationship between Ag-NPs and expression of psoriasin and

the specific mechanism of it.

**Methods** Human epidermal keratinocytes, neonatal (HEKn) were used. Psoriasin mRNA expression was measured by RT-PCR and real-time PCR. Western blotting was performed to verify early growth response-1 (Egr-1) and psoriasin expression as well as mitogen-activated protein kinase (MAPK) phosphorylation. Psoriasin promoter activity by Egr-1 was detected by luciferase assay.

**Results** Treatment with Ag-NPs in HEKn induced psoriasin mRNA and protein expression. Up-regulation of psoriasin promoter activity was also measured by luciferase activity. Ag-NPs increased the Egr-1 expression, promoter activity and its nuclear translocation in HEKn. Psoriasin luciferase activity was increased in Egr-1 pcDNA 3.1 transfected HEKn. Ag-NPs activated MAPK pathways such as extracellular signal-regulated kinase (ERK), p38 and c-Jun-N-terminal kinase (JNK). The up-regulation of Egr-1 expression by Ag-NPs stimulation was found to be inhibited by an ERK inhibitor, and p38 inhibitor, but not JNK inhibitor. Psoriasin expression was reduced in Egr-1 siRNA transfected HEKn.

**Conclusions** Ag-NPs treatment induces upregulation of psoriasin expression through Egr-1 expression. We also suggested that ERK and p38 pathways are involved in Egr-1 dependent psoriasin expression.

PO03-088

### **GATA6 overexpression promotes tumor progression in cutaneous T-cell lymphoma**

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GATA6 is a member of the GATA transcription factor family and plays critical regulatory roles in tissue development. GATA6 is also reported to be associated with tumorigenesis in a variety of tumors. Regarding cutaneous T-cell lymphoma (CTCL), GATA6 mRNA levels are elevated in malignant T cells in Sezary syndrome patients compared with healthy controls. However, the expression and function of GATA6 in CTCL including mycosis fungoides remain largely unknown. In this study, we elucidated the role of GATA6 in CTCL. Immunohistochemistry showed that tumor cells in CTCL patients abundantly expressed GATA6, while infiltrating lymphocytes in normal controls were weakly positive for GATA6. In addition, GATA6 mRNA levels in CTCL lesional skin were higher than those in normal skin. Western blotting analysis revealed that GATA6 protein levels were highly increased in PBMCs from Sezary syndrome patients and CTCL cell lines, compared with PBMCs from healthy controls. We also found that GATA6 suppression by shRNA led to decreased cell growth and induced apoptosis in CTCL cell lines (Hut78 and MyLa cells). Furthermore, immunodeficient mice injected with Hut78 cells transfected with GATA6 shRNA formed significantly smaller tumors compared with those transfected with scrambled shRNA. Collectively, our results indicate that GATA6 may act as an oncogenic gene and contribute to development in CTCL.

PO03-089

### **Frequency of 6p25.3 translocation in primary cutaneous anaplastic large cell lymphoma; comparison with other CD30-positive cutaneous T-cell lymphomas**

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Cutaneous CD30-positive T-cell lymphoproliferative disorders include primary cutaneous anaplastic large cell lymphoma (pcALCL), lymphomatoid papulosis (LyP), transformed mycosis fungoides (T-MF) with CD30 expression,

and secondary skin involvement by systemic anaplastic large cell lymphoma. Distinguishing pcALCL from LyP and T-MF is sometimes particularly challenging. Recently, 6p25.3 translocation has been reported to be more frequent in pcALCL than other CD30-positive cutaneous T-cell lymphomas or systemic ALCL, although the frequencies are different between previous studies. The objective of this study is to investigate the significance of 6p25.3 translocation in skin biopsy. Skin samples from 30 patients (14 pcALCL, 7 LyP, 6 T-MF, and 3 LyP associated with MF) were analyzed by FISH method. We detected 6p25.3 translocation in 11 out of 14 pcALCL cases (78.6%). No translocation was found in LyP, T-MF, and LyP with MF cases. Three ALCL patients without 6p25.3 translocation showed a good clinical course. Our results suggested that 6p25.3 translocation might define a subgroup of pcALCL and no translocation may suggest an indolent type of pcALCL or other CD30-positive cutaneous T-cell lymphomas.

PO03-093

### **Four cases of advanced melanoma treated by sequential administration of nivolumab and dabrafenib/ trametinib therapy**

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Although therapies for advanced melanoma have been greatly improved by the development of immune checkpoint inhibitors and BRAF/ MEK inhibitors, there are still many concerns about the administration of these novel drugs. Therefore, to combine these therapies sequentially at appropriate time points of the disease is important. In this report, we report four cases advanced melanoma treated by sequential administration of nivolumab and dabrafenib/ trametinib therapy. Three cases achieved biologically complete remission after the treatment, and one case is stable disease. Three cases developed severe adverse events (AEs), erythema exudative multiforme, spike fever and uveitis. Although uveitis is reported as a rare AE associated with dabrafenib/ trametinib therapy or nivolumab, in two cases, Vogt-Koyanagi-Harada (VKH)-like uveitis developed after the sequential administration of nivolumab and dabrafenib/ trametinib therapy. Interestingly, both cases have HLA-DRB1\*04: 05, which is strongly associated with VKH disease. Our case suggested the possible correlation between VKH-like uveitis as an AE and the clinical outcomes of sequential administration of nivolumab and dabrafenib/ trametinib therapy for the treatment of advanced melanoma.

PO03-094

### **RALDH1-producing dermal dendritic cells regulate skin fibrosis via retinoic acid-mediated regulatory T cell induction**

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Skin fibrosis is a common pathological skin condition among various skin-restricted and systemic diseases. Corticosteroids and/or immunosuppressants are mostly effective for this clinical entity, but the underlying immune response still remains enigmatic. In particular, the role of dermal dendritic cells (DCs) is totally unknown. Therefore, we investigated the role of dermal DCs in bleomycin (BLM)-induced skin fibrosis, especially focusing on the role of CD103, a critical molecule associated with the phenotype of those cells. Dermal thickness and collagen contents were decreased in BLM-treated *Cd103*<sup>-/-</sup> mice compared with BLM-treated wild-type mice, along with the decreased expression of TGF- $\beta$ 1 and CTGF. The proportion of regulatory T cells (Tregs) was significantly increased, while the proportions of Th1, Th2, and Th17 cells were significantly decreased in the skin of BLM-treated *Cd103*<sup>-/-</sup> mice. With respect to dermal DC subsets in the lesional skin, BLM injection enhanced the proportion of CD11b<sup>+</sup>CD103<sup>-</sup> DCs in wild-type mice, which was further augmented in *Cd103*<sup>-/-</sup> mice. Importantly, RALDH1/ALDH1A1, a cytosolic enzyme oxidizing retinaldehyde to retinoic acid, was preferentially expressed by CD11b<sup>+</sup>CD103<sup>-</sup> DCs and its expression levels were remarkably elevated in BLM-injected skin lesions, to a greater extent in *Cd103*<sup>-/-</sup> mice than in

wild-type mice. In humans, RALDH1-positive DCs were decreased in the lesional skin of patients with systemic sclerosis, morphea, chronic graft-versus-host disease, and dermatosclerosis associated with venous ulcers. This study shed new light on RALDH1-producing dermal DCs as a regulator of inducible Tregs in skin fibrotic disorders.

PO03-105

### Sociodemographic characteristics of childhood Hand Foot Mouth Disease: First report on age and sex differentiation from Bangladesh

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**Background** Globally, hand, foot and mouth disease (HFMD) is one of most common contagious viral febrile-rash illness in under-5 year-old children. We report some sex-difference that our data from recent HFMD-outbreak yielded first-time from Bangladesh

**Methods** The WHO's HFMD-case-definition was utilized for this short-term pocket-outbreak. Data from 143 children attending Pabna General-Hospital with febrile-illness and rash syndrome during September to November, 2017 were collected (using clinico-epidemiological diagnostic-protocols) and analyzed using SPSS/Win.V.21.

**Results** While sex of children did not differ with age ( $P = .39$ ); mean age  $2.9 \pm 2.32$  years), more girls belonged to smaller families than boys ( $P < 0.4$ ) and girls were more from the first siblings than boys ( $P < 0.02$ ) of 85% families belonging to middle-income-group, sex of children did not differ ( $P < 0.07$ ). In younger children (3-5 years old) had more moderate-to-high ( $38.5^\circ\text{C}$ ) than low-graded fever ( $37.0-38.4^\circ\text{C}$ ). More girls had painful ulcers than peer boys ( $P < 0.03$ ), though no difference in either itchy/painful/rashes ( $P < 0.69$ ) or rash characteristics ( $P < 0.33$ ). Recovery was quicker (in  $>5$  days) in older children, boys suffered more from for  $>5$  (6-7 days) than girls (in 5 days,  $P < 0.04$ ).

**Conclusion** Excerpta from this first report on emerging HFMD in Bangladesh (diagnosed clinically due to lack in laboratory facilities) revealed no significant difference in sex of children except girls who had more painful ulcers but quicker recovery than the boys. Ince no specific treatment available for childhood-HFMD (except symptomatic drugs), the Government health-sector assist by NGOs/UN/Development partners should plan sustainable strategies of globally-representative multivalent HFMD-vaccine and develop lab-diagnosis facilities to combat HFMD.

PO03-110

### Phenotype of dermal dendritic cells is regulated by Fli1 and its deficiency promotes dermal fibrosis in bleomycin-treated mice

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Systemic sclerosis (SSc) is a multisystem autoimmune disease resulting in fibrosis of the skin and certain internal organs. In the development of SSc, Fli1 deficiency is a potential onset factor. Recently, we have demonstrated that CD11b-CD103- dermal dendritic cells (DCs) play a central role in fibrosis in bleomycin (BLM)-treated mice, an established animal model of SSc. Based on this finding, we investigate how Fli1 deficiency affects the phenotype of dermal DCs in the skin fibrosis using BLM-treated Fli1<sup>+/-</sup> mice. The mRNA levels of Raldh1 encoding the cytosolic enzyme RALDH1, which oxidizes retinaldehyde to retinoic acid, were decreased in BLM-treated Fli1<sup>+/-</sup> mice compared to BLM-treated WT mice. In addition, comparing the number of RALDH-producing DCs in the dermis and skin-draining lymph nodes, the number of cells was decreased in the BLM-treated Fli1<sup>+/-</sup> mice. Furthermore, RALDH-producing DCs were almost exclusively CD11b-CD103- DCs. Importantly, the proportion of regulatory T

cells (Tregs) was decreased in the dermis and skin-draining lymph nodes of BLM-treated Fli1<sup>+/-</sup> mice. Focusing on the migration makers, CCR7 and CXCR4, expressions of both in bone marrow-derived DCs were increased in Fli1<sup>+/-</sup> mice compared with WT mice. These results indicate that Fli1 deficiency activates dermal DCs, but selectively suppresses RALDH1 production in the CD11b-CD103- dermal DC subset, leading to the attenuation of Treg development and the subsequent promotion of dermal fibrosis in BLM-treated Fli1<sup>+/-</sup> mice. This study will help clarify the mechanisms of pathological dermal fibrosis, including that of SSc.

PO03-001

### **MHY1485 ameliorates UV-induced skin cell damages via activating mTOR-Nrf2 signaling**

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Ultra Violet (UV)-caused skin cell damage is a main cause of skin cancer. Here, we studied the activity of MHY1485, a mTOR activator, in UV-treated skin cells. In primary human skin keratinocytes, HaCaT keratinocytes and human skin fibroblasts, MHY1485 ameliorated UV-induced cell death and apoptosis. mTOR activation is required for MHY1485-induced above cytoprotective actions. mTOR kinase inhibitors (OSI-027, AZD-8055 and AZD-2014) or mTOR shRNA knockdown almost abolished MHY1485-induced cytoprotection. Further, MHY1485 treatment in skin cells activated mTOR downstream NF-E2-related factor 2 (Nrf2) signaling, causing Nrf2 Ser-40 phosphorylation, stabilization/upregulation and nuclear translocation, as well as mRNA expression of Nrf2-dictated genes. Contrarily, Nrf2 knockdown or S40T mutation almost nullified MHY1485-induced cytoprotection. MHY1485 suppressed UV-induced reactive oxygen species production and DNA single strand breaks in skin keratinocytes and fibroblasts. Together, we conclude that MHY1485 inhibits UV-induced skin cell damages via activating mTOR-Nrf2 signaling.

PO03-002

### **Regulatory role of lncRNA CD27-AS1 on CD27 contributes to melanomagenesis**

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**Objective** Melanoma is the most aggressive type of skin cancer and accounts for the vast majority of skin cancer patient death. It is well known that benign nevus comprises of resting or normally proliferative melanocytes while melanoma is derived from malignant transformation of melanocytes. Recent studies have identified a set of long non-coding RNAs (lncRNAs) involved in the pathogenesis of melanoma. However, the role of lncRNAs in the malignant transformation of melanocytes is not fully understood.

**Methods** The present study analyzed lncRNAs alteration at the transcriptional level in primary melanoma and benign nevi by human lncRNA microarray. Bioinformatics analyses were conducted to predict the potential biological functions of differentially expressed lncRNAs. The functions and mechanism of one of specific lncRNAs in melanomagenesis were investigated.

**Results** The results showed there were 1646 lncRNAs differently expressed in primary melanoma compared with nevi. Bioinformatics analyses demonstrated these lncRNAs were mainly involved in the antigen processing and presentation, natural killer cell mediated cytotoxicity, pathways in cancer and B cell receptor signaling pathway. Based on the analysis, we focused on the lncRNA, CD27-AS1, which was upregulated in primary melanoma and melanoma cell lines, compared with nevi and melanocytes. Functional analysis in vitro demonstrated that CD27-AS1 knockdown inhibited melanoma cell growth and migration. Further results indicated that the regulation of CD27-AS1 on CD27 contributed to the melanomagenesis.

**Conclusion** Our data for the first time have identified differentially transcriptional profile of lncRNAs in melanoma compared with nevi and the oncogenic function of lncRNA CD27-AS1 in melanomagenesis.

PO03-003

**Expression and significance of RASSF1A in psoriasis**

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**Objective** Psoriasis is a chronic inflammatory skin disease and its mechanism is still unclear. The characteristics of over-proliferation and shortening cell cycle of psoriatic keratinocytes are similar to those of skin tumors. The expression of RAS associated family 1A (RASSF1A), which is known as a tumor suppressor gene, was obviously lower in some tumors. So it is inferred that the expression of RASSF1A between psoriasis and normal skin tissues may be different.

**Methods** Immunohistochemistry was carried out to qualify the expression of RASSF1A protein in tissue specimens from lesions of 22 patients with psoriasis, as well as from the skin of 19 normal human controls. The qPCR was used to detect and compare the expression the RASSF1A mRNA in 10 samples of normal skin tissues and 10 samples of psoriasis lesions.

**Results** In normal skin tissues, the positive rate of RASSF1A prtein was 78.95% (15/19), while in psoriasis its positive rate was 50.00% (11/22), the difference between which was statistically significant ( $P<0.05$ ); qPCR results showed that the expression of RASSF1A mRNA in normal skin tissues was significantly higher than that in psoriasis skin tissues ( $P<0.001$ ).

**Conclusion** RASSF1A may be involved in the occurrence and development of psoriasis.

PO03-005

**TRPM2 links oxidative stress to mitochondria-dependent apoptosis of melanocytes**

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**Objective** To investigate the role of TRPM2 in oxidative stress-induced apoptosis of melanocytes.

**Methods** We treated normal human melanocytes cell line PIG1 with H<sub>2</sub>O<sub>2</sub> to construct oxidative stress model of melanocytes, and pretreated melanocytes with TRPM2 inhibitor of TRPM2-shRNA, then we detected mitochondrial damage-related indicators and apoptosis by using qRT-PCR, Western blotting, Flow Cytometry and Immunofluorescence.

**Results** We initially found that H<sub>2</sub>O<sub>2</sub> induced demethylation of TRPM2 and increased the expression of TRPM2 in melanocytes. In addition, TRPM2 inhibitors or knockdown of TRPM2 lessen H<sub>2</sub>O<sub>2</sub>-induced calcium overload and apoptosis of melanocytes. Furthermore, we found that H<sub>2</sub>O<sub>2</sub>-induced Ca<sup>2+</sup> influx mainly located in mitochondrial, and a specific mitochondrial reactive oxygen species (ROS) accumulation and mitochondrial membrane potential decreasing. More importantly, TRPM2 inhibitors or knockdown of TRPM2 ameliorated H<sub>2</sub>O<sub>2</sub>-induced apoptosis and mitochondrial damage of melanocytes.

**Conclusions** We demonstrated that demethylation of TRPM2 induced by oxidative stress triggers mitochondria-dependent apoptosis of melanocytes, thus inhibitor of TRPM2 may as a potential target for protecting melanocytes from oxidative stress-induced damage.

PO03-007

**ALA-PDT suppressing the cell growth by Akt-/Erk-mTOR-p70 s6k pathway in human SZ95 sebocytes in vitro**Jiang Tuo<sup>1</sup>, Wen-Jie Liu<sup>2</sup>

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**Background** Topical 5-aminolevulinic acid mediated photodynamic therapy (PDT) is known to be an effective method in treating acne vulgaris and other sebaceous gland-related diseases. The therapeutic mechanisms of ALA-PDT still remain undetermined. In this study, we aimed to investigate the upstream of mammalian target of rapamycin (mTOR) signaling cascade after ALA-PDT on cell growth of human SZ95 sebocytes.

**Methods** Human SZ95 sebocytes were treated with different concentration of 5-ALA PDT. Western blotting was used to detect and analyze the protein expression level of P-Akt (T308)/Akt, P-Akt (S473)/Akt, P-Erk/Erk, P-AMPK $\alpha$  (T172)/AMPK, P-AMPK $\alpha$ 1 (S485)/AMPK $\alpha$ 2 (S491)/AMPK, P-PRAS40/PRAS40, RagC. Meanwhile, mTOR pathway activator IGF-1 and mTORC1 inhibitor rapamycin were added to observe the interferences of P-p70 S6K/p70 S6K after ALA-PDT.

**Results** The mTOR pathway inhibitor rapamycin enhanced the effect of ALA-PDT in SZ95 cells through increased in the level of P-p70 s6k. On the other hand, mTOR pathway activator IGF-1 reversed it. ALA-PDT reduced the level of P-Akt (T308), P-Erk, P-AMPK $\alpha$  (T172), P-AMPK $\alpha$ 1 (S485)/AMPK $\alpha$ 2 (S491) and P-PRAS40, and no change was observed in the level of Rag C.

**Conclusion** ALA-PDT suppresses the cell growth in SZ95 cells through Akt-/Erk- mTOR -p70 s6k pathway, and not through AMPK-/PRAS40-/RagC-mTOR pathway.

PO03-008

**Downregulation of miR-633 activated AKT/mTOR pathway by targeting AKT1 in lupus CD4+ T cells**

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**Background** Accumulating evidences suggest that AKT/mTOR pathway plays important roles in the pathogenesis of systemic lupus erythematosus (SLE) through activating T cells, and there are few studies digging into the role of microRNA (miRNAs) in the mechanism. We firstly found the miR-633 expression in CD4+T cells of SLE patients was significantly reduced.

**Objective** To investigate the role of miR-633 on AKT/mTOR pathway in lupus CD4+T cells.

**Methods** Samples of 17 SLE cases and 16 healthy controls were collected to determine the expression of miR-633, AKT1, mTOR mRNA and protein. In vitro, AKT1 siRNA, miR-633 mimics and negative controls were transfected to Jurkat cells. RNA and protein were extracted after 48 hours and levels of AKT1 and mTOR were detected. In the same method, miR-633 inhibitors or negative control was transfected to human primary CD4+T cells, and levels of AKT1, mTOR, pAKT, pS6RP and downstream multiple cytokines were detected.

**Results** The miR-633 levels in lupus CD4+T cells was significantly decreased and negatively correlated with SLEDAI. AKT1, mTOR mRNA and protein were all up-regulated. The downregulated degree of miR-633 was negatively correlated with AKT1 mRNA. Overexpression of miR-633 could significantly result in lower levels of AKT1 and mTOR. Inhibition of miR-633 expression in primary CD4+T cells caused reverse effects, and levels of pAKT and pS6RP protein increased. Moreover, the expression of IL-4, IL-17 and IFN- $\gamma$  mRNA among various cytokines was raised.

**Conclusion** our study suggests that miR-633 deletion can activate AKT/mTOR pathway by targeting AKT1 to participate in the pathogenesis of SLE.

PO03-009

**Role of Nrf2 in modulating H<sub>2</sub>O<sub>2</sub>-induced oxidative stress and Nrf2 target antioxidant gene expression in human melanocytes**

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High levels of reactive oxygen species (ROS) lead to melanocyte death and play an important role in the pathogenesis of vitiligo. The nuclear factor E2-related factor 2 (Nrf2) can upregulate oxidative stress-related cytoprotective genes and protect cells from oxidative injury.

**Objectives** To investigate the effect of modulation of Nrf2 expression on H<sub>2</sub>O<sub>2</sub>-induced oxidative damage and Nrf2 target antioxidant gene expression in human melanocytes.

**Methods** PIG1 cells were transiently transfected with Nrf2-specific siRNA or pCMV6-XL5-Nrf2 to downregulate or upregulate Nrf2 expression. H<sub>2</sub>O<sub>2</sub>-induced intracellular ROS, malondialdehyde (MDA) and cell proliferation were detected. The levels of nicotinamide adenine dinucleotide phosphate [NAD(P)H]: quinone oxidoreductase (NQO-1), heme oxygenase-1 (HO-1),  $\gamma$ -glutamylcysteine synthetase ( $\gamma$ -GCS) and Nrf2 nuclear expression were determined.

**Results** We found that H<sub>2</sub>O<sub>2</sub> induced the production of ROS and MDA in PIG1 cells. The upregulation of Nrf2 reduced H<sub>2</sub>O<sub>2</sub>-induced ROS and MDA generation, promoted cell proliferation, enhanced Nrf2 nuclear accumulation and upregulated the expression of NQO-1, HO-1 and  $\gamma$ -GCS in human melanocytes. However, the downregulation of Nrf2 expression caused the opposite effects. The results suggest that Nrf2 and its downstream antioxidant enzymes, NQO-1, HO-1 and  $\gamma$ -GCS, are negative regulators of H<sub>2</sub>O<sub>2</sub>-induced ROS-related melanocyte dysfunction.

**Conclusions** The modulation of Nrf2 altered H<sub>2</sub>O<sub>2</sub>-induced oxidative stress and cell proliferation through regulating the expression of Nrf2-mediated antioxidant enzymes in human melanocytes.

PO03-010

**Susceptibility of epithelial derived stationary tumor cells to hyperthermia**

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**Background** Human skin or mucosa are exposed to both internal and exogenous thermal environment, and survive in a certain range of temperature. Exogenous hyperthermia has been applied in the treatment of various types of cancers, fungal disease and warts. The aim of this study was to determine whether different cellular components in the skin adapt to hyperthermia conditions differently and elucidate the mechanism.

**Methods** Cell viability was measured by the MTS assay. For apoptosis analysis of cells post hyperthermia, cells were stained with FITC-conjugated Annexin V apoptosis detection kit. Ca<sup>2+</sup>-sensitive fluorescent single wavelength dye Fluo-4 AM was used to measure changes in [Ca<sup>2+</sup>]<sub>i</sub> post hyperthermia.

**Results** Here we showed that the thermo resistance of different types of epithelial and epithelial tumor cells was different when subjected to heat at 45 °C for 30min. We noted that hyperthermia had stronger effects on the cell viability and apoptosis in epidermal cells than their malignant counterparts except cell lines harboring human papillomavirus (HPV). Hyperthermia had much more effect on the cell viability and apoptosis in HPV-negative cell line than positive cell lines. We further found that hyperthermia treatment resulted in strong Ca<sup>2+</sup> influx which lead to apoptosis in cells. However, no obvious increase of apoptotic cells were observed in cells treated with CRAC channel selective inhibitor BTP2 before application of hyperthermia in all cell types, except three cervical cell lines harbored HPV.

**Conclusion** We propose that hyperthermia results in CRAC related strong Ca<sup>2+</sup> influx, inducing apoptosis except for HPV-positive cells.

PO03-012

**Anti-Gal3 antibody induces skin vasculitis by promoting IL-1 $\beta$  production through NLRP3 pathway on endothelial cells in systemic lupus erythematosus**

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**Background** Systemic lupus erythematosus (SLE) is a prototype autoimmune disease where vascular lesions are one of the typical symptoms. Our previous study showed that anti-Gal3 antibody is closely associated with skin vasculitis in SLE. However, the molecular mechanisms underlying this pathological process remain elusive.

**Method** For vitro experiment, phenotype and function of human vascular endothelial cell was examined after treatment with anti-Gal3 antibody. In skin vasculitis mice model induced by intradermal injection of anti-Gal3 antibodies, the expression of NLRP3/IL-1 $\beta$  was determined by immunohistochemistry (IHC). The histopathology of the lesions was determined after blockade of NLRP3/IL-1 $\beta$  pathway. NLRP3/IL-1 $\beta$  expression was determined in skin and serum samples from SLE patients and healthy donors. For systemic lupus mice model, mice were treated with Gal3 antigen and adjuvant, and monitored for serum autoantibody and creatinine levels as well as histopathology of the kidneys, lungs and skin. Immunologic abnormalities were analyzed by IHC, PCR and fluorescence-activated cell sorting.

**Result** Anti-Gal3 antibodies dysregulate the function of endothelial cells in vitro and induce cutaneous vasculitis via NLRP3/IL-1 $\beta$  pathway in vivo. Accordingly, overexpression of IL-1 $\beta$  and NLRP3 is observed at the site of vasculitis from LE patients. A lupus-like mice model was generated by producing anti-Gal3 antibodies through immunization with Gal3 antigen plus adjuvant. Elevation of serum anti-Gal3 antibodies not only causes skin involvement but also lead to damage of internal organs including lung and kidney with systemic autoimmunity.

**Conclusion** Overall, these findings suggest a critical role of NLRP3/IL-1 $\beta$  pathway in the pathogenesis of skin vasculitis induced by anti-Gal3 antibody in context of SLE and provide a novel mice model of inducible systemic lupus-like phenotype in wild-type mice.

PO03-016

**Cthrc1 plays bidirectional roles in the process of keloid by reversing the TGF- $\beta$  signaling as a negative feedback factor and modulating YAP subcellular location**Mengjie Zhao<sup>1</sup>, Si-Yuan Chen<sup>1</sup>, Xiao-Qu<sup>2</sup>, Bilal Abdul-fattah<sup>1</sup>, Ting Lai<sup>1</sup>, Meng Xie<sup>1</sup>, Shi-Di Wu<sup>1</sup>, You-Wen Zhou<sup>3</sup>, Chang-Zheng Huang<sup>1</sup>

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**Objective** Keloid induces a severe impairment of quality of life for the patients although keloid is a cutaneous benign tumor. Collagen triple helix repeat-containing protein 1 (Cthrc1) was identified as a novel gene that was originally found in adventitial fibroblasts after arterial injury. To address the role of Cthrc1 in keloid, the expression level of Cthrc1 was assessed in normal skin and keloid, and normal fibroblasts (NFs) and keloid fibroblasts (KFs). Then, to investigate if over expression of Cthrc1 in KFs can reverse extracellular matrix production.

**Methods** Cthrc1 was investigated in keloid and KFs by using quantitative PCR, western blotting and immunohistochemical analysis. To verify the function of Cthrc1 in NFs and KFs, we increased Cthrc1 expression by transfecting lentivirus (LV) vectors LV-Cthrc1. The cellular proliferation and migration, collagen synthesis and the influence for TGF- $\beta$  and YAP signaling were tested.

**Results** Cthrc1 was enhanced in keloid and KFs, and located in the cytoplasm of hyperplastic fibroblasts. The cellular proliferation and migration were increased by enhancing the YAP expression and transferring to cell nucleus in NFs-Cthrc1 compared with NFs-control. The cellular migration was suppressed by reducing the YAP expression and

transferring to cytoplasm in KFs-Cthrc1 compared with KFs-control. In NFs and KFs, Cthrc1 was enhanced by transforming growth factor (TGF)- $\beta$ 1, however, increasing Cthrc1 suppressed TGF- $\beta$  pathway by limiting pSmad2/3 nucleus transfer.

**Conclusion** Cthrc1 plays bidirectional roles in the process of kloid by reversing the TGF- $\beta$  signaling as a negative feedback factor and modulating YAP subcellular location.

PO03-017

### **IgE recognition of bullous pemphigoid (BP)180 and BP230 in senile atopic dermatitis patients with intense pruritus**

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**Background** Atopic dermatitis (AD) is a common, recurrent, chronic inflammatory skin disease that is a cause of considerable economic and social burden. Atopic dermatitis typically constitutes three phases: the infantile phase from 0 to 2 years of age, the childhood phase between 2 and 12 years of age, and the adolescent or adult phase. Recently, patients of more than 60 years old define as senile atopic dermatitis. The senile atopic dermatitis patients showed generalized papules, erythema, desquamation or prurigo-like with severe itching. While a part of BP patients showed a prurigo-like phenotype, pruritic urticarial erythema, and long-lasting non-specific skin eruptions, characterized by few or no blisters. In the prodromal phase, it is thus difficult to distinguish BP lesions from senile atopic dermatitis. The elderly patients, characterized by different clinical manifestations consisting of prurigo-like lesions, pruritic erythema, or pruritus sine materia, have been diagnosed as atopic dermatitis. The prodromal phase or early clinical phases of BP are characterized by the presence of severe itch accompanied by a more polymorphic clinical phenotype including eczematous, papular, excoriated or urticarial lesions. Bullous pemphigoid (BP) is the most common autoimmune bullous disease of the elderly and is associated with IgG and IgE autoantibodies against the hemidesmosomal proteins, BP180 and BP230. While AD is a T-helper (Th) 2-dominant inflammatory skin disease especially in the acute phase, the autoimmunity of BP may be mediated by Th2 cells. Currently, it had been showed that IgE anti-BP180 antibody levels correlate well with the disease severity of urticarial erythema in a BP patient. Thus, we hypothesized that IgG and IgE anti-BP180 and BP230 antibodies were associated with the senile atopic dermatitis. BP may have certain correlation with AD. The purpose of this study was to characterize the specificity of IgE against defined BP180, BP180- NC16A domain and BP230 in 26 senile atopic dermatitis who did not yet fulfill all the criteria BP.

**Methods** Sera obtained from 26 elderly AD patients with severe itching and 23 healthy donors were subjected to immunoblot (IB) and ELISA assays to measure serum IgG and IgE levels of anti-BP180, anti-BP180- NC16A and anti-BP230 antibodies.

**Results** Our findings show that IgE from AD sera preferentially targets the BP180- NC16A (IB: 3/26, ELISA: 7/26) and the BP180 (IB: 2/26, ELISA: 4/26). Less frequently of BP230 (IB: 2/26, ELISA: 2/26). Noteworthy, a subgroup of elderly patients with AD also showed IgG recognition of BP180 -NC16A (IB: 1/26, ELISA: 3/26) and IgG of BP230 (IB: 1/26, ELISA: 2/26). But none of the 26 AD patients showed IgG reactivity against BP180. In contrast, 0/26 of the AD patients showed IgG reactivity to BP180.

**Conclusion** Senile atopic dermatitis may be a subtype of BP. IgE recognition of the BP autoantigens is presumably an early pathogenetic event in BP.

PO03-018

**TNF- $\alpha$  and TRAIL are potential inducers of necroptosis in HaCaT cells through activation of ROS**

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Necroptosis is a form of programmed cell death, which is caspase-independent. The molecular events of necroptosis that may be involved in skin diseases have only been partially studied. Herein, we investigated cell viability, changes of necroptosis-related proteins and reactive oxygen species (ROS) generation in HaCaT cells treated with tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ) and TNF-related apoptosis-inducing ligand (TRAIL). In this respect, TNF- $\alpha$  and TRAIL increased the levels of cytosolic receptor-interacting protein 1 (RIP1), receptor-interacting protein 3 (RIP3), mixed lineage kinase domain-like protein (MLKL), Fas-associated protein with death domain (FADD)-like interleukin (IL)-1 $\beta$ -converting enzyme (cFLIP), and FADD, with a burst of ROS generation, and zVAD-fmk (zVAD) led to more expression of these proteins and ROS production, while necrostatin 1 (Nec-1) reduced them. These results suggest that TRAIL and TNF- $\alpha$  are potential inducers of necroptosis in HaCaT cells, and zVAD enhances TNF- $\alpha$ - and TRAIL-induced necroptosis while Nec-1 attenuates necroptosis. Necroptosis could be implicated in the pathogenesis of human skin diseases, and further studies might present more therapy targets.

PO03-019

 **$\beta$ -catenin activation in hair follicle dermal stem cells induces skin fibrosis and ectopic hair follicle**

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Hair follicle dermal sheath (DS) harbors hair follicle dermal stem cells (hfDSCs) and these hfDSCs can be recruited to replenish DS and dermal papilla (DP). Cultured DS cells can differentiate into various cell lineages in vitro. However, it is unclear how its plasticity is modulated in vivo. Wnt/ $\beta$ -catenin signaling plays an important role in maintaining stem cells of various lineages and is required for HF development and regeneration. Here we report that activation of  $\beta$ -catenin in DS generates ectopic HF outgrowth (EF) by reprogramming HF epidermal cells and DS cells themselves, and endows DS cells with hair inducing ability. Epidermal homeostasis of pre-existing HFs is disrupted. Additionally, cell-autonomous progressive skin fibrosis is prominent in dermis, where the excessive fibroblasts largely originate from DS. Gene expression analysis of purified DS cells with activated  $\beta$ -catenin revealed significantly increased expression of Bmp, Fgf, and Notch ligands and administration of Bmp, Fgf, or Notch signaling inhibitor attenuates EF formation. In summary, our findings advance the current knowledge of high plasticity of DS cells and provide an insight into understanding how Wnt/ $\beta$ -catenin signaling controls DS cells behaviors.

PO03-020

**Study of cell phenotype and molecular mechanisms under different culture conditions**

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**Objective** To investigate the impact of plating density on mouse skin-derived precursors (mSKPs) growth; to compare the phenotype, biological characteristics, and cell transcriptome profiles obtained from two different culture conditions.

**Methods** We increased the plating density to explore the impact of density on mSKPs growth. We analyzed cells'

phenotype and biological characteristics obtained from two different culture conditions, by cell cycle analysis, immunocytochemistry, CD antigen expression, and induced differentiation. Also we compared their transcriptome profiles by RNA-sequencing.

**Results** Compared with other lower plating density, the plating density of  $2.5 \times 10^5$  cells/mL and  $5 \times 10^5$  cells/mL produced significantly larger amount of mSKPs spheres and adherent cells. It was noticed that mSKPs spheres migrated out from the adherent cells colonies. Two different culture conditions allowed the adherent cells to proliferate and differentiate into two types of cells with distinct phenotypes and biological characteristics. Cell cycle analysis, immunocytochemistry, CD antigen expression, and induced differentiation confirmed that the spheres obtained from one culture condition were mSKPs, and the adherent cells obtained from the other culture condition were dermal mesenchymal stem cells (dMSCs). RNA-sequencing indicated that the majority of enriched differentially expressed genes (DEGs) from mSKPs was immune-related, while the majority of enriched DEGs from dMSCs was differentiatin/development/disease-related.

**Conclusion** mSKPs spheres migrated out from the adherent cell colonies, and their growth was density-dependent. Both mSKPs and dMSCs obtained from different culture conditions demonstrated their potential therapeutic applications in cell therapy and regenerative medicine. RNA-sequencing results suggested distinct DEGs profiles and the potential usage in the relevant morbidity management.

PO03-022

### **Influence of *Malassezia furfur* culture supernatant on *Staphylococcus epidermidis*: From the point of view of proteome, acetylome and succinylome**

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**Background** *Malassezia* yeasts and *Staphylococcus epidermidis* (*S. epidermidis*) were natural inhabitants and both showed disequilibrium on the lesion of seborrheic dermatitis. There might be interactions between these two microorganisms which led to an imbalanced microbiota colonization of the skin. We used proteome, acetylome and succinylome analysis method systematically reveal the effects of the culture supernatant of *M. furfur* (SMF) on *S. epidermidis* proteins.

**Methods** *M. furfur* (ATCC 14521) and *S. epidermidis* (ATCC 12228) were chosen as the objects in this study. The changes in proteome, succinylome and acetylome were detected by high-resolution proteomic technique (LC-MS/MS).

**Results** Proteomic analysis of *S. epidermidis* detected 113 differentially expressed proteins from the 1338 quantified proteins. A downregulated expression of proteins associated with pathogenicity, arginine biosynthesis and galactose metabolism were observed. Succinylome and acetylome analysis obtained 199 differentially expressed lysine succinylation sites in 141 proteins and 150 differentially expressed lysine acetylation sites in 150 proteins, respectively. The proteins with alterations in lysine succinylation and acetylation were involved in multiple function and metabolism.

**Conclusion** It is concluded that SMF could impact *S. epidermidis* on proteome, lysine acetylome and succinylome, providing a new insight into the interactions between microbiota.

PO03-023

### **Expression and function of circRNAs in the senescence of human fibroblasts induced by UVB irradiation**

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**Background** MiRNA and circRNA are both non-coding RNA. MiRNA can regulate post-transcriptional gene expression regulation, while circRNA can combine with MiRNA and regulate its activity. In the UVB-SIPS (stress induced premature senescence) HFs field, previous researches have found that miR-23a is a significant miRNA in photoaging. However, the profiling and potential function of circRNA in UVB-SIPS are unclear. Hence, research on

circRNA in UVB-SIPS was conducted.

**Methods** The model of UVB-SIPS was formed by using UVB irradiation. Microarray of circRNA profiles was conducted and quantitative real time PCR (qRT-PCR) was used to confirm the microarray data. Gene Ontology and KEGG for pathway analysis were used to predict the potential function. In addition, we studied the potential circRNA-miRNA network.

**Results** A total of 472 circRNAs were dysregulated (fold change  $\geq 1.5$ ,  $P < 0.05$ ). 8 circRNAs selected from the dysregulated circRNAs in microarray were retested by qRT-PCR. The results of five circRNA (hsa\_circRNA\_100797, hsa\_circRNA\_100686, hsa\_circRNA\_400036, hsa\_circRNA\_101755, hsa\_circRNA\_003794) were in accordance with the chip result. GO and KEGG pathway analysis showed the circRNAs participated in pathway in senescence, such as TRF2, AMBRA1, the signal transduction by p53 class mediator. Moreover, we found the circRNA-miRNA network that hsa\_circRNA\_100797 may target on miR-23a.

**Conclusion** This study gives us a landscape about circRNA in human UVB-SIPS fibroblasts and we hope the circRNA-miRNA network may provide a novel way in photoaging research.

PO03-024

### **Serum exosomal shuttled miRNAs mediate intercellular communication and exosomes induce pro-inflammatory immune response in systemic lupus erythematosus**

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**Background** Exosomes are involved in intercellular communication. The study aims to investigate whether serum exosomes induce the inflammatory response in systemic lupus erythematosus via evaluating the intercellular communication function of exosomal shuttled miRNAs.

**Methods** Peripheral blood mononuclear cells (PBMCs) were isolated from the peripheral blood of normal controls (NCs) by density gradient centrifugation. CD4+T cells were isolated using magnetic beads. Serum exosomes from SLE patients and NCs were isolated by ExoQuick kit, respectively. Using immunofluorescence CFSE labeled CD4+T cells, Exo-Glow™ Kit labeled exosomal RNAs, CD4+T cells were co-cultured with exosomes for 2-24 hours. Dynamic observe the interaction of exosomes with target cells under laser confocal microscopy. The protein levels of IFN- $\gamma$ , TNF- $\alpha$  and IL-6 in CD4+T cells were measured using FACSCanto flow cytometer. The mRNA levels of IFN- $\gamma$ , TNF- $\alpha$  IL-6 and miR-451 were detected by RT-qPCR.

**Results** We found that red fluorescence labeled exosomal RNAs can be taken up by green fluorescence labeled CD4+T cells and shuttled into the nuclei according to the observation using laser confocal microscopy. The expression levels of miR-451 after exosomes and CD4+T cell co-culture 24h were significantly increased compared to untreated CD4+T cells ( $P < 0.05$ ). We observed that SLE exosomes induced a higher levels of IFN- $\gamma$ , TNF- $\alpha$  and IL-6 proteins and mRNAs in CD4+T cells compared to healthy exosomes.

**Conclusion** The exosomal shuttled miRNA-451 may be involved in intercellular communication. Serum exosomes in SLE induce a pro-inflammatory immune response.

PO03-025

**Anti-inflammatory effect of quercetin in IFN- $\gamma$ /TNF- $\alpha$ -treated HaCaT cells**

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*Department of Dermatology, The First Hospital of China Medical University, and Key lab of Dermatology, Ministry of Education and Public Health***Objective** In order to study the anti-inflammatory effects of Quercetin (Que) and its mechanisms.**Methods** In this study, we examined the anti-inflammatory effects of Que on IFN- $\gamma$ /TNF- $\alpha$ -treated human keratinocytes (HaCaT cells) to determine its potential for treating inflammatory skin diseases. We performed lncRNA and mRNA expression profiling and co-expression network analysis of lncRNAs and mRNAs in HaCaT cells before and after treated by Que using next-generation high-throughput sequencing.**Results** Que could inhibit expressions of IL-1 $\alpha$ , IL-1 $\beta$ , IL-6, IL-15, MCP-1, MCP-3, MDC, TARC in the IFN- $\gamma$ /TNF- $\alpha$ -treated HaCaT cells. Based on the bioinformatics and co-expression analysis, we found that lnc-C7orf30-2, a differentially expressed lncRNA, may be correlated with IL-6 expression. Silencing of lncRNA lnc-C7orf30-2 by RiboTM lncRNA Smart Silencer was used to confirm this hypothesis.**Conclusions** Our study demonstrates that Que could inhibit proinflammatory cytokines and chemokines in IFN- $\gamma$ /TNF- $\alpha$ -treated HaCaT cells, lnc-C7orf30-2 may be involved in anti-inflammatory effect of Que.

PO03-026

**Paeoniflorin depresses human T lymphocytes activation via inhibition of I $\kappa$ B $\alpha$ -NF- $\kappa$ B signaling pathways, p38 kinase phosphorylation and interferon- $\gamma$  production**

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*Department of Dermatology, The Second Hospital of Dalian Medical University***Objective** To study the in vitro effect of Paeoniflorin (PF) on activated human peripheral blood T lymphocytes, including proliferation, apoptosis, cytokines secretion and the expression of NF- $\kappa$ B, I $\kappa$ B- $\alpha$ , p38, ERK and JNK signaling.**Methods** Human peripheral blood T lymphocytes were isolated and cultured in vitro. T lymphocytes were activated by CD3 combined with CD28 monoclonal antibody. CD25, CD69 and NF- $\kappa$ B expression were detected by flow cytometry assay. IFN- $\gamma$  and IL-4 productions were measured by ELISA. Phosphorylation of NF- $\kappa$ B, I $\kappa$ B- $\alpha$ , p38, ERK and JNK signaling were detected by Western blot.**Results** Paeoniflorin inhibited T lymphocytes proliferation and induced apoptosis of T lymphocytes. 100 $\mu$ M and 200 $\mu$ M PF significantly inhibited CD25 of activated T lymphocytes ( $P < 0.001$ ), 200 $\mu$ M PF inhibited CD69 significantly ( $P < 0.001$ ), 100 $\mu$ M and 200 $\mu$ M PF significantly inhibited NF- $\kappa$ B ( $P < 0.001$ ). 12.5-200  $\mu$ M PF inhibit IFN- $\gamma$  production ( $P < 0.001$ ), while no effect on the production of IL-4 was found. PF inhibited nuclear translocation of p65 in a concentration-dependent manner, and 10 $\mu$ M PF group inhibited NF- $\kappa$ B p65 expression significantly ( $P < 0.05$ ). 1-10 $\mu$ M PF significantly inhibited the I $\kappa$ B- $\alpha$  expression ( $P < 0.01$ ), and 10 $\mu$ M PF significantly inhibit p38 expression ( $P < 0.01$ ), but PF had no effect on MAPKs signaling pathway factors JNK and ERK.**Conclusion** PF inhibits proliferation and induces apoptosis of T lymphocytes. PF decreases the expressions of CD25, CD69 and NF- $\kappa$ B signaling in dose dependent manner. PF depresses human T lymphocytes activation via inhibition of IFN-g and I $\kappa$ B $\alpha$ -NF- $\kappa$ B signaling pathways and p38 kinase phosphorylation. suggesting that PF might be useful for the treatment of T cell-mediated allergic inflammatory disorders, including AD and asthma. This would make PF a candidate for further study as an anti-inflammatory agent.

PO03-028

**Candida cell wall mannoprotein synergizes with LPS to induce RAW264.7 inflammation through the jak2 / stat3 signaling pathway**

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**Background** The infection of candida albicans has increased by more than 20 times in recent years. It has become the fourth most common bacterial flora in the hospital. Candida albicans cell wall mannoprotein is the most outer layer of the cell wall of candida albicans, and is the first site for fungal and host immune response. As an important immunomodulation cell, macrophages play a key role in the immune response of candida albicans. Although there are many studies on the molecular structure and antigen immunity of mannoprotein, the detailed role of mannoprotein in the pathogenesis of candida albicans is not fully understood.

**Methods** In this study, we observed the cell morphology and detected the activity, phagocytosis and apoptosis of cells after stimulating macrophages with mannoprotein and LPS. We also examined the expressions of JAK2, STAT3, IL-1, IL-6, and TNF- $\alpha$  in cells.

**Results** We found that mannoprotein can promote macrophage proliferation, enhance its activity, inhibit its phagocytosis, and promote the release of macrophage cytokines. At the same time, we also found that mannoprotein can promote the apoptosis of macrophages induced by LPS and the release of cytokines. The results suggest that mannoprotein can promote the expression of p-jak2, STAT3 and p-stat3 in macrophages induced by LPS.

**Conclusion** mannoprotein can promote the inflammation of macrophages induced by LPS and participate in the inflammatory immune process of organisms. Mannoprotein can promote the transformation of macrophages to M1 type by activating the JAK2/STAT3 signaling pathway, promoting the occurrence of inflammation.

PO03-029

**Carbamazepine-10,11-epoxide activates AhR-MLKL to induce NLRP3 inflammasome upregulation in keratinocytes and regulate CD8+ T-cell skin trafficking in SJS and TEN**

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**Background** Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN) are life-threatening cutaneous adverse drug reactions that are accompanied by keratinocyte cell death. Carbamazepine-10,11-epoxide (CBZE), a pharmacologically active metabolite of Carbamazepine (CBZ). NLRP3 inflammasome has been found involved in keratinocyte cell death and IL-1 $\beta$  release as a detrimental consequence of CD8+ T cells mediated cytotoxicity. However, the mechanism by which causative drugs affect keratinocyte cell death in SJS/TEN remains unclear.

**Methods** We firstly detected aryl hydrocarbon receptor (AhR), mixed lineage kinase domain-like protein (MLKL) and IL-1 $\beta$  expression in SJS/TEN lesions by WB and IHC. Moreover, Sera and Blister fluid of Granulysin, CXCL10 and IL-1 $\beta$  in SJS/TEN were used for ELISAs. Furthermore, The SJS/TEN keratinocytes were treated by CBZE and (or) knocked down the putative involved mediator, AhR and MLKL to detect the necroptosis and NLRP3 inflammasome activation in SJS/TEN keratinocytes. Finally, we tested the cytotoxic functions of CD8+ T cells from SJS/TEN patients mediated by NLRP3 inflammasome using flow cytometry.

**Results** We found that IL-1 $\beta$  expression was increased and correlated with SCORTEN, Granulysin and CXCL10 in serum, blister fluid and tissues of SJS/TEN patients. CBZE induced necroptosis, NLRP3 inflammasome activation and CD8+ T cells cytotoxic functions mediated by AhR-MLKL axis and IL-1 $\beta$ /IL-1R signal in SJS/TEN keratinocytes.

**Conclusions** This study suggests a strong connection between the NLRP3 inflammasome and immune cell function through induction of chemotaxis-related proteins and proinflammatory cytokines in patients with SJS/TEN.

PO03-030

**Changes of cathepsins in hair follicle cycle**Yue Zheng<sup>1</sup>, Jing-Zhu Bai<sup>2</sup>, Wei Lai<sup>1</sup>*1. Department of Dermato-venereology, The Third Affiliated Hospital of Sun Yat-sen University**2. Department of Dermato-venereology, Guangzhou First People's Hospital, Guangzhou*

**Background** Hair cycle is regulated by various growth factors, hormones, proteases and signaling pathways. Cathepsins are involved in human skin physiological mechanisms such as hair follicle morphogenesis, cellular pigment production, extracellular matrix (ECM) turnover, dermal and epidermal cell proliferation, apoptosis and senescence. However, the role of cathepsins in the process of hair growth, aging and abscission are still not clear. Here we investigated the cathepsin expression changes in follicular growth cycles for better understanding the natural hair growth process mechanisms and to explore new intervention measures.

**Methods** The 25 mice (C57BL/6, female, 7-week old) were selected and removed the back hair via rosin / paraffin method. At Day 0, Day 8 and Day 20 biopsy on post-plucking area were done. The recovered hair follicles were treated initially with HE staining to determine the status of hair follicle. Immunohistochemical staining, Western-Blot and QPCR were used to tested the cathepsin B//L/E expression.

**Results** In anagen hair, cathepsins (B, D, L, E) were distributed in the hair follicle matrix, inner hair root sheath and hair. In catagen hair, cathepsins (B, D, L, E) were mainly observed in un-apoptosis inner root sheath and outer root sheath. In telogen hair, cathepsins (B, D, L, E) expression were negative in hair follicles and only found in sebaceous glands. Western blot and RT-PCR showed that cathepsin B and L were high expressed in anagen hair, began to decrease in catagen and rarely expressed in telogen hair ( $p < 0.05$ ).

**Conclusions** Distribution and expression of cathepsin B, D, L and E in hair follicle were changed in hair growth process which indicated that cathepsins may act as biomarkers in hair cycles.

PO03-031

**Autophagic effect of UVB on SLE and the role of miR-125b-5p in this process**

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**Objective** To detect the effect of UVB on PBMC autophagy and miRNA expression in Jurkat cells and SLE patients. To screen and identify target gene of miR-125b-5p. To investigate the effects of UVB irradiation on autophagy after regulating the expression of miR-125b-5p and its target gene. To explore the role of UVB in pathogenesis of SLE through autophagy and the role of miRNA in this process and its regulatory mechanism.

**Methods** 1. Jurkat cells were exposed to 0-200 mJ/cm<sup>2</sup> UVB. The expressions of LC3, Beclin-1 and miR-125b-5p were detected by Western-blotting, qPCR and laser scanning confocal fluorescence microscope at 12h, 24h and 48h after exposed to UVB. 2. PBMCs of SLE patients and normal individuals were irradiated with 50 mJ/cm<sup>2</sup> UVB. The expressions of autophagy pathway genes (LC3, Beclin-1) were detected by Western-blotting and qPCR at 24h after irradiation. The specifically expressed mRNAs and miRNAs were screened by RNA-seq and miRNA microarray then identified by Western-blotting and qPCR. 3. Using bioinformatics technologies to find autophagy related target gene of miR-125b-5p, and detect its expression in PBMCs of SLE patients by Western-blotting and qPCR. After transfection with miR-125b-5p agomir/antagomir, the effect of upregulation/downregulation miR-125b-5p on target gene was detected by Western-blotting and qPCR. After co-transfecting miR-125b-5p mimic and luciferase miRNA expression reporter vector, exam luciferase ratio to confirm the target site on 3'UTR of the target gene. 4. Jurkat cells were transfected with miR-125b-5p agomir/antagomir, UVRAG overexpression vector/siRNA and irradiated with UVB. The expressions of autophagy pathway genes (LC3, Beclin-1, ATG 7 and UVRAG) were detected by Western-blotting, qPCR and laser scanning confocal fluorescence microscope.

**Results** 1. When the dose of UVB was less than 50mJ/cm<sup>2</sup>, the autophagy activation increased with the increase of dose. When the dose of UVB was more than 50mJ/cm<sup>2</sup>, the autophagy activation decreased gradually. The highest autophagy activation was observed in 50 mJ/cm<sup>2</sup> dose group. 2. The expression of miR-125b-5p was negatively

correlated with the irradiation dose when the irradiation dose was less than 50 mJ/cm<sup>2</sup>, while the level of miR-125b-5p was positively correlated with the irradiation dose when the irradiation dose was greater than 50mJ/cm<sup>2</sup>. The expression of miR-125b-5p was the lowest when the irradiation dose was 50mJ/cm<sup>2</sup>. 3. There was no significant difference in the expression of autophagy-related genes (Beclin-1, LC3 II, ATG 7, UVRAG) in PBMCs from SLE patients and normal controls when UVB was not irradiated. The expression of autophagy-related genes (Beclin-1, LC3 II, ATG 7 and UVRAG) in PBMCs of SLE patients was significantly increased after UVB exposure, while normal controls only showed mild changes. 4. The expression of miR-125b-5p in PBMCs without UVB in SLE patients was lower than that in normal controls. The expression level of miR-125b-5p in PBMCs of SLE patients and normal controls after UVB irradiation was lower than that before irradiation, and the expression of miR-125b-5p was the lowest in SLE-UVB group compared with other groups. 5. The overexpression of miR-125b-5p can reduce the expression of UVRAG, and the inhibition of miR-125b-5p can increase the expression of UVRAG. miR-125b-5p down-regulates UVRAG mRNA and protein expression by binding to the target site in 3'UTR of UVRAG. 6. Downregulation of miR-125b-5p or upregulation of UVRAG can increase autophagy activation in Jurkat cells; upregulation of miR-125b-5p or downregulation of UVRAG can reduce autophagy activation in Jurkat cells.

**Conclusion** 1. UVB can induce autophagy in Jurkat cells and impact on the expression of miR-125b-5p, the effect of which is related to the irradiation dose. 2. PBMCs in SLE patients are more sensitive to the changes of autophagy induced by UVB irradiation. 3. The expression of miR-125b-5p in PBMCs of SLE patients is lower, and further decreased after UVB irradiation. 4. UVRAG is a target gene for miR-125b-5p. 5. miR-125b-5p negatively regulates autophagy by inhibiting UVRAG.

PO03-032

### **DNAJA4 deficiency enhances NF-kappa B-related growth arrest induced by hyperthermia in human keratinocytes**

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**Background** Hyperthermia is an effective treatment against cancer and human papillomavirus (HPV) infection. Previous studies have shown that heat shock proteins are crucial to the action of hyperthermia. The aim of this study was to examine the effects of hyperthermia in combination with DNAJA4-deficiency on human keratinocytes and Condyloma acumunatum (CA) tissues.

**Methods** HaCaT cells were subjected to 44 °C (compared to 37 °C) waterbath for 30min for stimulation. Foreskin or CA tissues obtained from patients undergoing circumcision or pathological examination were bisected and subjected to similar treatments. DNAJA4-knockout (KO) HaCaT cells were generated with CRISPR/Cas9 technology. mRNA and protein expressions were determined using rt-qPCR and western-blotting. Cell cycle distribution, apoptosis and senescence were analyzed by flow cytometry.

**Results** DNAJA4 was induced in HaCaT cells, foreskin and CA tissues subjected to hyperthermia at both transcriptional and translational levels. NF-kB was activated by hyperthermia in HaCaT cells, and DNAJA4-knockout further enhanced this effect. Transcription of TNF- $\alpha$ , IL-1B, TNFAIP3 and IL-8 were all induced in HaCaT cells subjected to hyperthermia. DNAJA4-knockout promoted transcriptions of TNF- $\alpha$  and IL-1B, whereas decreased that of TNFAIP3 and IL-8. Flow cytometry showed decreased survival and proliferation in all cell groups tested. Reduced cell viability was also demonstrated in the MTS assay.

**Conclusions** Hyperthermia reduced HaCaT cell proliferation and promoted cytokine expressions responsible for anti-viral activity, possibly through a NF-kB dependent pathway. DNAJA4-deficiency enhanced the activation of NF-kB by hyperthermia in HaCaT cells, indicating that DNAJA4 may be a promising therapeutic target for use in the treatment of cutaneous HPV infections.

PO03-033

**Oxidative stress induced melanocytes release of HMGB1 is critical for keratinocyte production of IL8 and CXCL16 in vitiligo**

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**Objective** To investigate the role of HMGB1 in the pathogenesis of vitiligo, and identify the mechanism of oxidative stress-induced immunologic destruction in vitiligo.

**Methods** HMGB1 expression and distribution in vitiligo lesions were assessed by immunofluorescences. HMGB1 level in serum and culture supernatants were detected by ELISA. The receptor of HMGB1 and its downstream signal pathways was explored by siRNA and qRT-PCR, western blot. The activation of peripheral DC cells was analyzed by flow cytometry.

**Results** We found that lower concentration H<sub>2</sub>O<sub>2</sub> is capable of inducing HMGB1 release from primary melanocytes, These HMGB1, as same as the rhHMGB1, can promote keratinocyte secretion of cytokines CXCL16 and IL8, both of which have been demonstrated to promote vitiligo. We further investigated the mechanism of how HMGB1 promotes cytokine production of hacat cells, and found that HMGB1 initiates downstream NF- $\kappa$ B and ERK signaling pathways by binding to the RAGE receptor on the Hacat surface, Blocking RAGE or the downstream pathways, NF- $\kappa$ B or ERK, can inhibit HMGB1 induced cytokines release of Hacat. Besides, we also found that HMGB1 is capable of activating DC cells by up-regulating the expression of CD80, CD86 and HLA-DR.

**Conclusions** Our results demonstrate that oxidative stress induced HMGB1 release from melanocytes plays a critical role in initiating immune response by promoting cytokines production of keratinocytes.

PO03-034

**Study on blood levels and clinical significance of IL-36 subfamily cytokines in patients with systemic lupus erythematosus**

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IL-36 subfamily cytokines include three agonists (IL-36 $\alpha$ , IL-36 $\beta$  and IL-36 $\gamma$ ) and two receptor antagonists (IL-36Ra and IL-38). Recent studies have demonstrated that the aberrant expression of IL-36 subfamily cytokines have been linked to several autoimmune diseases. However, the relationships between IL-36 subfamily cytokines and SLE remain unknown. In our study, serum IL-36 subfamily cytokine levels were determined in 72 SLE patients and 63 healthy controls using ELISA and the mRNA levels were assessed in 30 of 72 SLE patients and 20 of 63 healthy controls using RT-PCR. Compared to healthy controls, SLE patients had significantly decreased serum IL-36Ra and IL-38 levels but markedly increased serum IL-36 $\alpha$  and IL-36 $\gamma$  levels ( $P < 0.05$ ). Serum IL-36 $\alpha$  and IL-36 $\gamma$  levels were significantly higher in active SLE patients than in inactive patients, were positively correlated with SLEDAI score and were negatively related with complement C3 levels ( $P < 0.05$ ). Moreover, SLE patients with arthritis showed significantly higher serum IL-36 $\alpha$  and IL-36 $\gamma$  levels than those without arthritis ( $P < 0.05$ ). Our study indicates that the imbalanced antagonist/agonist profile of IL-36 subfamily cytokines may be linked to SLE pathogenesis. Moreover, the aberrant expressions of IL-36 $\alpha$  and IL-36 $\gamma$  might contribute to joint inflammation in SLE patients. Furthermore, IL-36 $\alpha$  and IL-36 $\gamma$  may be good biomarkers of disease activity and may have potential as novel therapeutic targets in SLE.

PO03-036

**Concomitant NOTCH1 and TP53 (p53) expression in HPV positive/negative epithelial cells during hyperthermia**

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Local hyperthermia is effective to treat viral warts of skin or mucosa, possibly via inhibiting cell proliferation, accelerating cell apoptosis and inducing cellular immune response. Notch signal pathway plays important roles in cell fate determination, proliferation, apoptosis and differentiation in various types of cells. We thus wondered if Notch signal pathway would be affected or activated in the treatment of hyperthermia. To investigate it, we examined the change of several Notch signal pathway molecules in response to hyperthermia treatment. We found that the protein NOTCH1, as the transmembrane receptor of initiating Notch signal pathway, was significantly upregulated in condyloma acuminata (CA) tissues and HPV-infected human cervical cancer cells (HPV positive tissues or cells) after hyperthermia treatment. We meanwhile found that TP53 and HES1, as the upstream regulator and downstream target of NOTCH1 respectively, were significantly upregulated in response to hyperthermia treatment. Interestingly, in a sharp contrast, both of NOTCH1 and TP53 were significantly downregulated in human cervical cancer cells without HPV infection and keratinocyte cell line (HPV negative cells) after hyperthermia treatment. Therefore, Notch signal pathway was changed in HPV-dependent way during the process of hyperthermia. Additionally, we found that the inhibitor of NOTCH1, DAPT, can reduce the viability of HPV positive cells, but it does not work to HPV negative cells. Furthermore, for HPV positive cells, when DAPT combined with hyperthermia were used, the effect on inhibiting cell viability is much better than that when used DAPT or hyperthermia separately, which might provide a potential way of enhancing the hyperthermia therapeutic effect in HPV infection related skin disease.

PO03-037

**Sirt3-induced macrophage polarization through autophagy in promoting *Mycobacterium leprae* latent infection**

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**Objectives** The formation of Mycobacterial granuloma is a typical process of antagonism between the pathogen and the host, and M2 macrophages differentiation is closely related to this course. Sirt3 is a type III protein deacetylase which shuttles between the cytoplasm and the mitochondria.

**Methods** We analyzed the correlation between clinical manifestations, cell typing characteristics and Mycobacterial granulomatosis formation, the cell signal transduction of Sirt3-deficient macrophage differentiation. The zebrafish model of granuloma with *Mycobacterium leprae* infection in vivo, was established to reveal the effect of Sirt3 on autophagy regulation, macrophage polarization, and relevant molecular mechanisms, and to explore the mechanism of defense and compromise of immune system against *Mycobacterium leprae*.

**Results** Sirt3 deficiency was found to cause a significant reduction of M2 macrophages. Sirt3 defect also contributed to autophagy enhancement and induction of M1 macrophages. Moreover, the analysis of clinical leprosy samples showed that Sirt3 expression was gradually upregulated in the pathogenesis of *M. leprae* infection.

**Conclusions** Our data demonstrate that Sirt3 may promote the differentiation and function of M2 macrophages through autophagy intervention, and participate in granuloma formation and latent infection of *Mycobacterium leprae*. This study will help to clarify new mechanism for *Mycobacterium* immunization, providing new targets for intervention and new clues towards immune recognition as well as tolerance mechanisms.

PO03-038

**Interaction of Cathepsins and non-coding RNA in human skin photoaging mechanisms**

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**Background/Objective** Photoaging of the skin is associated with a variety of Dermatoses including skin tumors, but the mechanisms are still unclear. Recent studies domesticated that non-encoding RNA interacted with a number of proteins (including enzymes) and played a complex network in physiological and biochemical processes. The purpose of this study is to investigate the expression changes of cathepsin in photoaging skin, and further study the interaction of cathepsins and non-coding RNA in human skin photoaging mechanisms.

**Methods** In the UVA-HDF group, HDF were subjected to repeated UVA irradiation (10 J/cm<sup>2</sup> UVA twice daily for 7 days); in the control group, HDF received no irradiation. High-throughput sequencing was used to detect circRNA and lncRNA expression profiles. Functional annotation analysis and pathway enrichment were performed via Gene Ontology (GO), Kyoto Encyclopedia of Genes and Genomes (KEGG), TopHat and DEGseq. MAPK, TGF/Smad pathway were detected via western blot.

**Results** The expression of CathepsinB/D/K was downregulated in photoaging skin while cathepsinG was up-regulate. Cathepsins expression were regulated by MAPK and TGF/Smad pathway. In the UVA-HDF group, 29 circRNAs was changed: 13 circRNAs interacted with collagen and 2 circRNAs interacted with elastin. In the UVA-HDF group, 1,730 lncRNA exhibited over 2-fold expression changes compared with the control group: 1,494 were upregulated, and 236 downregulated. Lnc-KRTAP5-6-3 and Lnc-CTSD-2 were involved in the regulation of CathepsinD expression. Lnc-KRTAP5-6-3, Lnc-CTSD-2, Lnc-SPRY, Lnc-TNNI2-2, Lnc-RP1 were involved in the regulation of MAPK and TGF/Smad pathway.

**Conclusions** Cathepsins, lncRNAs, circRNA expression were changed in skin photoaging process. Cathepsins, signaling pathway and ncRNAs was cross-talk and played an important role in human skin photoaging mechanisms.

PO03-043

**Research progress on the effect of light on stem cell differentiation**

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Ultraviolet, infrared and a variety of lasers play an important role in the field of medicine. The immunomodulatory effect of narrow-band ultraviolet could be used to treat diseases such as psoriasis and vitiligo. Infrared with very strong thermal effect could be used to reduce pain and promote wound healing. Carbon dioxide laser has the ability of cauterization, vaporization, dissection, and concretion to reduce the scar. Stem cells have the potential for self-renewal and multidifferentiation, which makes them hot spots in regenerative medicine and tissue engineering. The study of in vitro proliferation and induction of stem cells may help to reconstruct the structure and function of tissues and organs in the near future, which may make the third promising therapeutic method after drug therapy and surgery come true. In addition to immunomodulatory and thermal effects, light may also regulate the differentiation of stem cells. UVB may facilitate melanocytic differentiation from neural crest stem cells, while visible light and low-level laser could facilitate the differentiation of mesenchymal stem cells into osteogenic cell series. This paper summarizes the existing research about various light stimuli, such as ultraviolet, visible light and low-level laser on stem cell differentiation, and analyzed the related genes and signal pathways. Results were compared of different light stimulation, and also, the future research direction is predicted.

PO03-044

**Mechanism of SO<sub>2</sub>-induced oxidative and inflammatory injury in human skin keratinocytes**

Junqin Liang

*People's Hospital of Xinjiang Uygur Autonomous Region Dermatology***Objective** To investigate the role and mechanism of SO<sub>2</sub> in human skin keratinocytes.

**Methods** Firstly, immortalized keratinocyte HaCaT cells were treated with different concentrations of SO<sub>2</sub> derivatives (0, 25, 50, 100, 200, 400 and 800 μM) for 24 h, and then MTT was used to detect their effects on cell proliferation. Two optimum concentrations of SO<sub>2</sub> derivatives were selected, which were used in the following study. After that, HaCaT cells were randomly divided into the control group and the SO<sub>2</sub> group. Cells in the control group were without any treatment, and cells in the SO<sub>2</sub> group were treated with the two selected concentrations of SO<sub>2</sub> derivatives for 24 h. Enzyme-linked immunosorbent assay was used to measure levels of reactive oxygen (ROS), malondialdehyde (MDA), and superoxide dismutase (SOD) intracellular, and levels of tumor necrosis factor (TNF)-α and interleukin (IL)-1β in cell supernatant. Real-time PCR was used to detect the mRNA expression of nuclear transcription factor Nrf2 and haem oxygenase (HO)-1. Western blot was used to analyze the levels of Nrf2, HO-1, active Caspase-3, Bcl-2, Bax, IκB, NF-κB p65 (p65), ERK1/2, p38, phospho-NF-κB p65 (p-p65), p-ERK1/2 and p-p38. Results Compared with cells did not treat with SO<sub>2</sub> derivatives, the proliferation of HaCaT cells was significantly suppressed by 100, 200, 400 and 800 μM of SO<sub>2</sub> derivatives (*P* all <0.05). 100 μM and 200 μM were used in the following study. Compared with the control group, levels of ROS, MDA, TNF-α, IL-1β, Nrf2, HO-1 and p-p65/p65 were notably increased, and levels of SOD, IκB, p-ERK1/2/ERK1/2 and p-p38/p38 were decreased by SO<sub>2</sub> derivatives (*P* all <0.05). However, SO<sub>2</sub> derivatives did not alter the levels of active Caspase-3, Bcl-2 and Bax (*P* >0.05).

**Conclusions** SO<sub>2</sub> can inhibit the proliferation, induce oxidative stress and inflammation in human skin keratinocytes. The effect of which may be involved in the activation of the NF-κB signaling and the suppression of ERK1/2 and p38 signaling.

PO03-045

**Expression of thermoTRPs in melanoma cells and the influence of menthol and 2-APB on cell proliferation and cell cycle of A2058 cells**Xue-Jing Tan<sup>1</sup>, Wei Cheng<sup>2</sup>, Fang Liu<sup>1</sup>*1. The First Affiliated Hospital of Dalian Medical University**2. Dalian Medical University*

**Objective** To compare the expression of TRPs protein and mRNA in human melanoma cells and normal melanocytes. To investigate the pathophysiologic role of TRPs in TRPs activators menthol and 2-Aminoethoxydiphenyl borate (2-APB) treated melanoma cell line A2058.

**Methods** 1. Compare the expression of protein TRPA1, TRPM8, TRPV2 and TRPV4 in the melanoma cell lines SK-MEL-3, A2058, G361, A375 and Primary Epidermal Melanocytes by western blotting. 2. The mRNA expression of TRPA1, TRPM8, TRPV2 and TRPV4 were tested by real-time PCR. 3. The cell viability was analyzed by MTT assay and the cell cycle was analyzed by flow cytometry in menthol and 2-APB treated melanoma cell A2058.

**Results** 1. Compared with Primary Epidermal Melanocytes, the expression levels of protein and mRNA in melanoma cells were up-regulated in terms of TRPA1, TRPM8 and TRPV4, whereas TRPV2 showed a downward trend. 2. MTT assay showed that the cell proliferation was inhibited in 1mM menthol and 0.2mM 2-APB treated melanoma cells. 3. When cultured with menthol for 12 hours and 48 hours, no significant difference had been shown in the cell cycle of A2058 cell, while treated with 0.4 mM 2-APB for 48 hours, S phase of A2058 cells increased compared with melanocyte.

**Conclusions** 1. The expression of TRPA1, TRPM8 and TRPV4 was up-regulated and the expression of TRPV2 was down-regulated in melanoma cells. 2. Menthol can inhibit the proliferation of melanoma cell without any influence to cell cycle, while 2-APB can block the cell cycle in S phase.

PO03-046

**Inhibition of the hedgehog pathway leads to antifibrotic effects in dermal fibrosis**

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Dermal fibrosis is characterized by the activation of the matrix-producing 'positive' myofibroblasts, and the relentless production and deposition of extracellular matrix. The hedgehog pathway has recently been demonstrated to work in a pro-fibrotic manner in systemic sclerosis (SSc). A negative regulator of the hedgehog pathway (Hh), the suppressor of fused (Sufu), was shown to be involved in the activation of fibrotic diseases. However, the exact role of Sufu in fibrosis has not been investigated so far. In our study, we aimed to define the role of Sufu in the process of fibrosis using dermal fibroblasts of healthy donors that were cultured in vitro. Cyclopamine, a Smo antagonist, and Sufu lentivector were used to treat or transfect cells. The expression of fibrosis markers and ERK1/2, Smad2, and GSK3 $\beta$  at the protein level was determined by Western blot. Fibroblast migration was measured by in vitro wound healing assay. Bleomycin-induced dermal fibrosis mouse model was introduced to assess the effect of cyclopamine on dermal fibrosis in vivo. We found that cyclopamine significantly upregulated the expression of Sufu. Both cyclopamine and Sufu lentivector reduced migration and myofibroblast differentiation of human dermal fibroblasts at a statistically significant level. Furthermore, cyclopamine reversed dermal fibrosis induced by TGF- $\beta$ 1. Cyclopamine and the overexpression of Sufu inhibited the phosphorylation of GSK-3 $\beta$  and restrained the migration of fibroblasts. Dermal fibrosis was inhibited by intraperitoneal injection of cyclopamine in a mouse model of scleroderma. Our findings suggest that cyclopamine and Sufu-overexpression may effectively inhibit the endogenous as well as the TGF- $\beta$ 1-induced activation of fibroblasts through subsequent activation of GSK-3 $\beta$ . Sufu agonists may be a promising approach in the development of antifibrotic medications for dermal fibrosis and systemic sclerosis.

PO03-047

**Effects of active ingredients of Chinese safflower on melanogenesis in human melanoma cells**

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**Objective** To investigate the effects of safflower active ingredients upon melanogenesis, the melanogenesis-related proteins and genes mRNA expression levels in human melanoma cells.

**Methods** The effects of safflower active ingredients on cell viability, melanin content and tyrosinase activity in A375 cells were measured by MTT assay, oxidative DOPA reaction, and NaOH method respectively. The expression of melanogenesis-related proteins in A375 cells were detected by Western Blot. The expression of melanogenesis-related genes mRNA in A375 cells were detected by real-time fluorescent quantitative PCR.

**Results** 1. The results showed that there are no significant effects on melanin content and tyrosinase activity in A375 cells after exposure to various concentrations of safflower yellow and safflower oil within the safe concentration range ( $P > 0.05$ ); While the melanin content and tyrosinase activity in A375 cells were increased significantly by linoleic acid or oleic acid in a dose-dependent manner ( $P < 0.05$ ). 2. The expression levels of tyrosinase and MITF proteins in A375 cells was up-regulated by linoleic acid or oleic acid in a dose-dependent manner ( $P < 0.05$ ). 3. The expression of tyrosinase mRNA in A375 cells was up-regulated by linoleic acid or oleic acid in a dose-dependent manner ( $P < 0.05$ ), while there was no significant effect on the expression of MITF mRNA in A375 cells ( $P > 0.05$ ).

**Conclusion** Linoleic acid and oleic acid induce the melanogenesis of human melanoma A375 cells in vitro. The promelanogenic effects may be related to the up-regulation of MITF signaling pathway and tyrosinase gene expression levels.

PO03-048

**Rottlerin as a therapeutic approach in psoriasis: Evidence from in vitro and in vivo studies**

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Rottlerin is a natural polyphenolic compound that was initially indicated as a PKC $\delta$  inhibitor. However, it was recently revealed that it may target a number of molecules and have biological effects on various cell types and is considered as a possible agent for tumor and cell proliferative diseases. Psoriasis is a chronic inflammatory cutaneous disorder with undefined etiology and is characterized by abnormal cellular proliferation, angiogenesis, and inflammation. Therefore, this paper investigates the regulatory effects of rottlerin on normal human epidermal keratinocytes (NHEKs) and imiquimod (IMQ)-induced psoriasiform (IPI) lesions. In vitro results showed that rottlerin inhibited cell proliferation in NHEKs through growth arrest and NF $\kappa$ B inhibition. It may also induce apoptosis in an autophagy-dependent pathway. We found that rottlerin inhibited human microvascular endothelial cells tube formation on matrigel. Rottlerin also decreased the cell senescence of keratinocytes and intracellular ROS generation, which indicated its antioxidant effect. We also showed that rottlerin affects the expression of keratinocyte proliferation biomarkers. In 12-O-tetradecanoylphorbol13-acetate (TPA)  $\pm$  induced keratinocytes, rottlerin significantly inhibited the expression of the induced pro-inflammatory cytokines in keratinocytes. An animal experiment provided the corresponding evidence based on this evidence in vitro, by using IPI model, we found that rottlerin could relieve the psoriasiform of BALB/c mice by inhibiting keratinocyte proliferation, inflammatory cell infiltration, and vascular proliferation. In conclusion, our results suggest that rottlerin may prove useful in the development of therapeutic agents against psoriasis. However, the deep mechanism still requires further study.

PO03-049

**Comparative expression of PEDF and VEGF in human epidermal keratinocytes and dermal fibroblasts: from normal skin to psoriasis.**Bing-Xi Yan<sup>1</sup>, Yu-Xin Zheng<sup>2</sup>, Wei Li<sup>1</sup>, Jia-Qi Chen<sup>1</sup>, Jiong Zhou<sup>1</sup>, Sui-Qing Cai<sup>1</sup>, Min Zheng<sup>1</sup>, Xiao-Yong Man<sup>1</sup>*1. Department of Dermatology, Second Affiliated Hospital, Zhejiang University School of Medicine**2. Zhejiang Chinese Medical University*

Vascular endothelial growth factor (VEGF) and pigment epithelium-derived factor (PEDF) have been shown to keep angiogenesis activation and inhibition in balance in normal and pathological conditions. In this study, we examined the expression of VEGF and PEDF in keratinocytes and fibroblasts from normal and psoriatic skin to evaluate their potential roles and interactions in the development of psoriasis. The expression of VEGF and PEDF was detected in normal and psoriatic skin ex vivo and in co-cultured keratinocytes and fibroblasts in vitro, and increased in keratinocytes and fibroblasts from psoriatic skin compared with those cells from normal skin. Our results suggest that PEDF act as a multipotent factor in the skin and the imbalance of PEDF and VEGF may be responsible for the transformation from normal skin to psoriasis.

PO03-050

**Molecular mechanisms of BCL6 regulating miR-142-3p/5p expression in CD4+ T cells and its role in the pathogenesis of systemic lupus erythematosus**Shu Ding<sup>1</sup>, Qing Zhang<sup>2</sup>, Shuang-Yan Luo<sup>2</sup>, Qing-Hai Zeng<sup>1</sup>, Li-Na Tan<sup>1</sup>, Jin-Rong Zeng<sup>1</sup>, Ming Zhao<sup>2</sup>, Qian-Jin Lu<sup>2</sup>

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**Objective** To study the molecular mechanism of down-regulation of miR-142-3p/5p in SLE.**Methods** CD4+ T cells were collected from healthy controls and SLE patients. The mRNA and protein level of BCL6 were detected with real-time PCR and western blot. ChIP-PCR and luciferase assay were performed to determine if there is BCL6 binding within the MIR-142 promoter region. IP experiment was tested to find whether BCL6 combines with EZH2, a H3K27 methyltransferase. Amounts of BCL6, EZH2 and H3K27me3 within the MIR-142 promoter region were analyzed with ChIP-PCR. Changes of BCL6, EZH2 and H3K27me3 enrichment within the MIR-142 promoter region and miR-142-3p/5p expression were detected by transfection with pCMV-BCL6 or siRNA-BCL6.**Results** We found the expression of BCL6 were up-regulated in CD4+ T cells of SLE patients compared with healthy controls. We identified there is BCL6 binding within the MIR-142 promoter region, and BCL6 can recruit EZH2. Furthermore, we confirmed BCL6, EZH2 and H3K27me3 enrichment at the MIR-142 promoter was markedly increased in SLE CD4+ T cells. Over-expression of BCL6 in normal CD4+ T cells led to increased BCL6 and EZH2 binding, and up-regulated H3K27me3 enrichment at the MIR-142 promoter. All these alters inhibited the expression of miR-142-3p/5p. Whereas knocking down BCL6 with siRNA in SLE CD4+ T cells had the opposite effect.**Conclusion** Our findings suggest that increased BCL6 binding can recruit EZH2, and up-regulate H3K27me3 enrichment at the MIR-142 promoter region, which inhibits miR-142-3p/5p expression in SLE CD4+ T cells, and contributes to the development of SLE at last.

PO03-051

**Suppressor of fused inhibits skin wound healing**

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Suppressor of fused (Sufu), whose function varies from being a tumor suppressor gene to being a normal tissue development mediator, is a repressor of the Hedgehog (Hh) signaling pathway. The role of Sufu in cutaneous wound healing and its underlying mechanisms are not well understood. To investigate the effect of Sufu on epidermal and dermal cellular properties and in wound healing, a transgenic (TG) mice overexpressing human Sufu (hSufu) in the epidermis was successfully constructed (K14-hSufu). Histological staining revealed that dermal thickness was reduced and hypodermal adipose tissue was increased in homozygous K14-hSufu TG mice compared with wild-type (WT) controls. Following dorsal skin punch biopsies, TG mice exhibited significantly delayed skin wound healing. Moreover, the migratory and proliferation capabilities of cultured keratinocytes were decreased and dermal fibroblast proliferation was increased in K14-hSufu TG mice compared with controls. Transforming growth factor- $\beta$  treatment increased the expression of  $\alpha$ -smooth muscle actin in WT fibroblasts more than in TG fibroblasts. Furthermore, Sufu overexpression significantly decreased the expression of  $\beta$ -catenin, Gli1 and matrix metalloproteinase-3 (MMP-3) in the wounds of K14-hSufu TG mice compared with controls, which may indicate that Sufu retards wound healing via blocking Hh/Gli and Wnt/ $\beta$ -catenin pathway. In conclusion, our findings suggest that Sufu overexpression in the epidermis impairs wound healing via dampening Hh/Gli and Wnt/ $\beta$ -catenin signaling pathway. Sufu may work as an interactive platform directed skin development and wound healing.

PO03-052

**Study on the role of ACTL6a in psoriasis and wound**

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Actin-6a (ACTL6a), also known as BAF53a or Arp4, is an important member of the ATP-dependent SWI / SNF-like BAF chromatin remodeling complex. It was first identified as an actin-related protein in the T lymphocyte BAF complex and localized to nuclear chromosomes, especially in region which is rich of euchromatin. Studies have shown that ACTL6a is involved in a number of cellular biological processes including transcriptional regulation of genes, staining Quality remodeling and nuclear translocation. In 2017, Srinivas Vinod Saladi found that ACTL6a and P63 of HNSCC had physical interaction that co-amplified and synergistically regulated key genes including WWC1, activated Hippo-YAP pathway, so that can promot proliferation, and inhibit differentiation. In 2016, Xiao Shuai found that ACTL6a promotes hepatocellular carcinoma (HCC) metastasis and epithelial-mesenchymal transition (EMT) through SOX2 / Notch1 signaling. In 2013, Bao Xiaomin found that ACTL6a can inhibit SWI / SNF-induced KLF4 to maintain the stem character of epidermal stem cells. In recent years, articles had been published that ACTL6a inhibits cell differentiation, maintains the function of self-renewal and pluripotency (including embryonic stem cells, epidermal stem cells and progenitor cells in the hematopoietic system). ACTL6a is associated with osteosarcoma and cervical squamous cell carcinoma.

Psoriasis is a chronic inflammatory proliferative skin disease affecting about 2-3% of the world's population, about 125 million people, with some complications such as arthritis, cardiovascular disease, and metabolic syndrome (Obesity, hypertension, dyslipidemia and diabetes), chronic kidney disease, gastrointestinal disorders, shingles, infections, mood disorders, malignancies and lung diseases. Typical clinical manifestations are erythema and scale, the common lesion sites include the scalp, knees, extensor side of the elbow, trunk, calf anterior and nails. Nearly 10 billion U.S. dollars are spent globally each year on psoriasis care. Psoriasis patients generally bear a huge psychological burden, while physical activity, cognitive function and quality of life significantly reduced. A meta-analysis reported that 28% of psoriasis patients in the top hospitals had depressive symptoms. The pathogenesis of psoriasis involves genetic and environmental factors. Up to 30% of psoriasis patients can find relatives with similar medical history. Abnormal proliferation of epidermal keratinocytes is thought to have a close relationship with the development of psoriasis. Generally epidermal keratinocytes from the basal layer to the stratum corneum takes about 28 days, while in patients with psoriasis, epidermal transit time is only 3-5 days. From histopathology, it can be clearly observed hyperkeratosis, keratosis, accompanied by clubbing hyperplasia hypertrophy and reduction or deletion of the granular layer. Studies have shown that psoriasis lesions contain both epithelial and mesenchymal markers, belong to the EMT type 2.

Wound repair is a time-space highly regulated process. The basis of the cellular biology of wound repair relies on rapid proliferation, migration and differentiation of epidermal cells, and requires a large number of cytokines to maintain cell survival and proliferation, thereby promoting wound repair. Keratinocytes constitute the epidermal structure mainly. Ivor J.Lim et al. had shown that the interaction of epithelial and interstitial cells in a paracrine and autocrine. Daniel N et al. reported that the epidermis may play a role in regulating fibroblasts during wound healing. ACTL6a plays an important role in the maintenance of epidermal stem cells (proliferation, migration) and EMT. It has a certain degree of overlap with the pathogenesis of psoriasis and the repair mechanism of wound, prompting us to consider whether ACTL6a is involved in the occurrence of psoriasis, what role played? What is its role in predicting the progression and prognosis of psoriasis? What is its function in the skin wound repair process? Based on the literature review, there is no in vivo experimental study of ACTL6a. We constructed ACTL6a transgenic mice in order to explore further.

PO03-053

**Mechanical tension enhances cell proliferation and collagen synthesis and promotes expressions of integrin  $\alpha\beta3$  in Human keloid-derived mesenchymal stem cells**

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**Background** Keloids are a dermal fibrotic disease that result from excessive scar formation during healing of wounds, whose etiology remains totally unknown and for which there is no successful treatment. Recent studies showed that transplantation of mesenchymal stem cells (MSCs), among their multifunctional roles, significantly decreased tissue fibrosis, and it has been suggested as a therapeutic potential cell source to treat fibrotic diseases. Mechanical tension, in addition, is closely associated with the germination and development of keloids. Integrins are cell adhesion receptors that are evolutionary old and that play important roles during mechanical tension processes. However, little is known about the cellular and molecular mechanisms of integrin in human keloid-derived mesenchymal stem cells (KD-MSCs). The goal of this study was to examine the effects of integrins stimulated by external mechanical tension on KD-MSCs and to investigate which subunits are involved in the pathogenesis of keloid.

**Methods** Human keloid-derived mesenchymal stem cells (KD-MSCs) and human normal skin-derived mesenchymal stem cells (NS-MSCs) were isolated and cultured in stem cell medium with the serum concentration increased gradually. Cell proliferation and collagen synthesis were detected by Cell Counting Kit-8 (CCK-8) assay and hydroxyproline content analysis under mechanical tension respectively. We investigated the mRNA expressions of nine integrin subunits, including integrin units  $\alpha2$ ,  $\alpha3$ ,  $\alpha5$ ,  $\alpha\upsilon$ ,  $\alpha8$ ,  $\alpha10$ ,  $\alpha11$ ,  $\beta1$ , and  $\beta3$ , in KD-MSCs stimulated with mechanical tension. Identification of differentially expressed genes was performed by Western blot analysis.

**Results** We obtained high purity KD-MSCs and NS-MSCs using the culture method of decreasing serum concentration gradient gradually. Furthermore, we found that mechanical tension enhances cell proliferation and collagen synthesis in KD-MSCs. Further research showed that  $\alpha8$  integrin expression is down-regulated and  $\beta3$  integrin expression is up-regulated in KD-MSCs compared with NS-MSCs. As well, the mRNA and protein levels of integrin  $\alpha\upsilon$  and  $\beta3$  were increased in KD-MSCs under mechanical tension.

**Conclusion** Taken together, our results suggest that integrin  $\alpha\upsilon\beta3$  receptor may be sensitive molecules of mechanical tension and could contribute to the generation and progress of keloids. It could lead to novel targets for therapeutic intervention, treatment and prevention of recurrence for keloid disorders.

PO03-054

**6-Hydroxydopamine promotes keratinocyte damage and depigmentation in mouse.**

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**Objective** Investigate the effects of 6-hydroxydopamine (6-OHDA) on keratinocyte damage and depigmentation in mouse to clarify the impact of neurotoxin on the pathogenesis of vitiligo.

**Methods** human keratinocyte was treated with 6-OHDA, and following experiments were performed. ROS level detection by flow cytometry, apoptosis observation and Nrf2 translocation with cell immunofluorescence, NF- $\kappa$ B mRNA expression with qPCR and IL-6 level analysis with ELISA. Mice intradermally injected with 6-OHDA for 30 days were detected as follows, hair follicle and dermal skin observation with H&E staining, tyrosinase expression examined with cell immunohistochemistry, CD8+ T infiltration by cell immunofluorescence, activated I $\kappa$ B- $\alpha$ /NF- $\kappa$ B signal pathway analysis by western blotting, and abnormal cytokines screening with antibody factor microarray.

**Results** In keratinocytes, 6-OHDA increased ROS level, promoted apoptosis, induced abnormal expansion of endoplasmic reticulum, inhibited nuclear translocation of Nrf2, and increased NF- $\kappa$ B mRNA level and IL-6 level. Contrast to wild-type mice, mice treated with 6-OHDA showed scattered hair discoloration on the back, decreased hair follicle length and dermal thickness, lower tyrosinase expression, higher level of phosphorylated I $\kappa$ B- $\alpha$ /NF- $\kappa$ B p65, and large amount of CD8+ T cells in the dermal skin. Additionally, increased CXCL9, CCL5, CCL3, CCL25, Leptin, TNF- $\alpha$ , IL-6, sTNF RI, IL-12p40p70, TIMP-2 and decreased IL-10 were found in 6-OHDA-treated mice.

**Conclusions** 6-OHDA can promote keratinocyte damage, and induce mouse depigmentation by affecting the immune system such as promoting cytotoxic lymphocytes infiltration. It provides new evidence for neurological pathogenesis in vitiligo.

PO03-056

### **An improved method for detecting varicella-zoster virus and the preliminary application**

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**Objective** To improve the qPCR (quantitative polymerase chain reaction) assay for detection of varicella zoster virus (VZV) DNA, and to evaluate the effectiveness of antiviral treatment for herpes zoster.

**Methods** Patients with acute varicella patients, acute herpes zoster and postherpetic neuralgia (PHN) were involved in our study, the qPCR assay was improved by using the standard extracted from the blister fluid, and deservng the primers according to the conserved sequences of VZV DNA. Then compared with a qPCR kit in detecting VZV DNA, and the improved qPCR assay was used to detect the difference of VZV DNA between PBMC (peripheral blood mononuclear cell) and plasma before and after treatment.

**Results** To the the standard curve of the improved qPCR assay, the coefficient ( $R^2$ ) = 0.9533. In the regression equation,  $Y = -2.7715X + 38.426$ , where X is the Log value, and Y is the Ct value. A kit was used to detected the VZV DNA extracted by boiling method and centrifuge method, the positive rates were 10% and 60%, respectively. For the detection of VZV DNA extracted by centrifugal column, positive rates of the kit and the modified qPCR assay were both 60%. According to the improved qPCR assay, to the positive rate of VZV DNA in PBMC and plasma, there was no significant difference both before treatment and after treatment ( $\chi^2 = 1.33$ ,  $df = 1$ ,  $P = 0.25 > 0.05$ ).

**Conclusion** The centrifuge method for VZV DNA extraction is a better choice than the boiling method, in view of the collection of PBMC is cumbersome, the plasma samples may replace the PBMC samples for the clinical detection of VZV DNA. To the improved qPCR assay, the standard production cycle is shorten, and the cost is low, thus the assay is suitable for screening and detecting clinical VZV infectious disease.

PO03-057

### **Effects and mechanism of SPRY1 on the innate immunity system in psoriasis**

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Clarify the expression differences of SPRY1 in psoriasis and normal human skin and keratinocytes; Define the correlation between SPRY1 and skin barrier function, innate immune-related genes, psoriasis-related inflammatory factors, and keratinocyte biological functions; Elucidate the role of SPRY1 in skin barriers, changes in antimicrobial peptides, and innate immunity through the K14-SPRY1 mouse model. Through the conditional overexpression of SPRY1 in K14-SPRY1 transgenic mice, to detect a new mechanism of trauma and infection induced psoriasis, and on this basis, new targets for the treatment of psoriasis will be further discovered.

PO03-058

**Expression of death receptor 3 (DR3) on peripheral blood mononuclear cells in patients with psoriasis vulgaris**

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**Background** A series of evidence have indicated that TNF-like ligand 1A (TL1A) and its receptor death receptor 3 (DR3) might be involved in the pathogenesis of psoriasis, although their exact role in the pathogenesis of psoriasis remains not fully explained. Our previous research demonstrated that serum TL1A levels were markedly elevated in patients with psoriasis vulgaris (PV), but there is no report on the expression of DR3 on peripheral blood mononuclear cells (PBMCs) of patients with PV. So we carried out this study of DR3 expression on CD4 (+), CD8 (+), CD14 (+) and CD19 (+) PBMCs of patients with PV, atopic dermatitis (AD) and healthy volunteers.

**Methods** Blood samples were collected from PV patients before and after treatment. The severity of patients with PV was evaluated by the Psoriasis Area Severity Index (PASI). Then, correlation analysis was used to investigate the relationship between DR3 expression and PASI scores in patients with PV.

**Results** In contrast to healthy volunteers and AD patients, patients with PV had elevated percentage of DR3-expressing CD8 (+) and CD14 (+) PBMCs. The percentage of DR3 on CD8 (+) and CD14 (+) cells decreased after anti-inflammatory treatment and correlated with PASI scores.

**Conclusions** These findings suggest that DR3 may play a role in the pathogenesis of PV.

PO03-059

**Total glucosides of paeony restores CD4+CD25+Treg cells through demethylation of the foxp3 promoter region in patients with Henoch-Schonlein purpura**Ye Shu<sup>1</sup>, Rong Xiao<sup>2</sup>*1. Hunan Childrens Hospital**2. The Second Xiangya Hospital*

**Background** Henoch-Schonlein Purpura (HSP) is a special type of systematic vasculitis that involve immune cells exceptional hyperplasia and activation. CD4+CD25+Treg cells, which maintain immune homeostasis and prevent autoimmune diseases, play a very important role in the pathogenesis of HSP. Research have reported that CD4+CD25+Treg cells and Foxp3, the marker of growth and differentiation of Tregs, in peripheral blood in patients with HSP were decreased significantly via methylation regulation probably. The aim of this study was to investigate the expressions of Foxp3 and methylation level of Foxp3 promoter in CD4+ T cells from HSP patients. To detect the change of Foxp3, methylation level of Foxp3 promoter, and ability of autoreactivity of HSP CD4+ T cells after treatment of total glucosides of paeony.

**Methods** The mRNA levels of Foxp3 was detected by Real-time PCR. The percentage of CD4+CD25+Foxp3+ Tregs was detected by flow cytometry. The methylation status of Foxp3 promoter were measured by sodium bisulfite sequencing (BSP). The concentrations of IgA and IgG antibodies were estimated by ELISA.

**Results** The expression of Foxp3 gene and percentage of CD4+CD25+Foxp3+ Tregs in CD4+T cells in HSP patients were significantly reduced, while the methylation level Foxp3 promoter in HSP patients were increased significantly. The methylation status in Foxp3 promoter and clinical disease severity scores were positively correlated. Total glucosides of paeony could upregulate the expression of Foxp3 and percentage of CD4+CD25+Foxp3+Tregs in CD4+T cells from HSP patients, downregulate the methylation level of Foxp3 promoter, and then reduce immune activity of HSP CD4+ T cells and concentration of antibodies.

**Conclusions** DNA hypermethylation of Foxp3 gene promoter region in HSP CD4+T cells, inhibit the expression of Foxp3 gene and Treg cells, which may be one of pathogenesis of HSP and may affect disease progression and prognosis. Total glucosides of paeony could upregulate the expression of Foxp3 and differentiation of Tregs cells by DNA methylation pathway, and may affect the immune suppression function of CD4+T cell.

PO03-060

**Investigation of 5-Fluorouracil and Ultraviolet B co-inducing lupus-like mouse model and its molecular mechanisms**

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**Objective** SLE is chronic inflammatory autoimmune disease characterized by overwhelm autoantibodies. The pathogenesis of SLE is complex and the exact mechanism remains elusive, thus the animal model, which provides mimical model of disease process, play important role in SLE and medicine research. 5-FU, a kind of immunosuppressant, which is often applied to the treatment of gastrointestinal tumor, is found to be responsible for cutaneous lupus like lesion in patients. Moreover, it has been reported that UVB, a DNMT1 inhibitor, is able to decrease the DNA methylation level and increase SLE disease activity. This study aimed to induce a novel SLE mouse model which is co-induced by 5-FU and UVB.

**Methods** To choose the best dosage of 5-FU: C57 mice are randomized to 3 groups, which are treated with UVB exposure, and 5-FU at concentration of 20, 10, 5mg/L. After screening the concentration, then mice are divided into 4 groups: 5-FU plus UVB group, 5-FU group, UVB group and Blank control group. Mice in the induced models group are irradiated on dorsal skin (200 mJ/cm<sup>2</sup> UVBL irradiation in every two days) and receive 5-FU injections for 6 weeks. Mice in 5-FU group and UVB group only receive the 5-FU injection and UVB irradiation, respectively. After 6 months, we examine several autoimmune traits including skin eruptions, haematoxylin-eosin (HE) staining of skin and kidney, skin immunoglobulin deposits by direct immunofluorescence (IF) testing and immunohistochemistry (IHC). Proteinuria, spleen weight, body weight, antinuclear antibody (ANA), anti double stranded DNA antibody (ds-DNA) and mRNA expression of several cytokines of CD4+T cells are also evaluated.

**Results** High dose 5-FU (20 mg/L) plus UVB is the best choice for SLE modeling. Erythma skin lesions with slight scaling firstly appeared in 5-FU plus UVB group. In this group, lupus-like changes such as hyperkeratosis, plugging, mononuclear cell infiltration were found and IgG and C3a depositions were observed at the dermo-epidermal junction, the higher expression of 5-mhC in skin lesions were detected. Compared to other three groups, the levels of ds-DNA antibody, ANA, mRNA of INF- $\gamma$ , IL-17a are both higher in induced model group. In addition, obvious changes of proteinuria, body weight and spleen size were found in induced model group.

**Conclusion** 5-FU and UVB are able to co-induce a lupus like mouse model.

PO03-061

**Pathogenic role of 5-hydroxymethylcytosine in skin lesions of lupus**

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**Background** Lupus erythematosus (LE) is an autoimmune disease with a broad clinical spectrum ranging from cutaneous lesions to severe systemic manifestations. The LE-specific cutaneous manifestations are generally divided into three categories: acute cutaneous LE (ACLE), subacute cutaneous LE (SCLE) and discoid LE (DLE). The pathogenesis of the disease and the immunological mechanisms for heterogeneities in lupus remain unclear. It is undoubtedly the case that widespread epigenetic changes play a crucial role in the pathogenesis of lupus. 5-hydroxymethylcytosine (5hmC) is a newly discovered modified form of cytosine, and how it is implicated in the pathogenesis of LE lesions remains to be researched. This study investigates the correlation between 5-hmc level and the pathogenesis of skin lesions of lupus.

**Methods** Paraffin-embedded skin lesions were obtained from 80 LE patients (28 DLE, 24 ACLE, 28 SCLE) and 70 controls, including 25 psoriasis, 25 dermatomyositis and 20 normal skin beside benign nevi. All of these were performed 5-hmc analysis with immunohistochemical experiment.

**Results** We found that there was an significantly increased 5-hmc level in skin lesions of LE patients, especially for those patients with DLE. Moreover, a medium increase of 5-hmc in dermatomyositis and a reducing trend of 5-hmc

in psoriasis were found compared to healthy controls.

**Conclusion** The markedly raise in cutaneous 5-hmc level in lupus is associated with cutaneous manifestations. These data underscore the important role of 5-hmc not only in circulation, but also in the skin lesions with regard to lupus.

PO03-062

### **Identification and validation of differential expressed proteins in serum of chronic spontaneous urticaria patients with different duration of wheals**

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Chronic spontaneous urticaria (CSU) is one of the most common types of chronic urticaria, whose symptom is easy to be recurrented, to be migrated and refractory. The objective and measurable indicators of disease activity are absence, so it is hard to evaluate the degree of disease, treatment efficiency and prognosis correctly. Several researchers suggested that blood parameters may indicate disease activity and duration. This will help monitor treatment and might be considered as potential prognostic biomarkers of CSU. It is unclear whether the differentiation of protein expression level in the serum of CSU patients and the duration of wheals in different CSU patients exist. The samples were divided into group A (wheals duration <2 h) and group B (wheals duration 12-24 h) according to the duration of the wheals. It was first identified and validated the differential expressed proteins in sera of CSU patients with different durations of wheals with isobaric tags for relative and absolute quantitation (iTRAQ) in combination with two-dimensional liquid chromatography / tandem mass spectrometry (2D-LC-MS / MS) by our study. Three hundred and seventy CSU serum-related proteins were initially identified. Among those identified proteins, about 30 proteins have significant differences between different groups. According to the classification of biological functions and up-regulated / down-regulated values, SAA and CFL, TPM4 and Monocyte differentiation antigen (CD14) were chosen and validated by enzyme-linked immune sorbent assay (ELISA). SAA, CFL1 and TPM4 these three proteins correlated with wheals duration in CSU patient and might be considered as new potential inflammatory biomarkers associated with CSU.

PO03-065

### **Ganoderma lucidum polysaccharides reduce melanocytes melanogenesis by inhibiting paracrine effect of keratinocytes and fibroblasts via IL6/ STAT3/FGF2 signaling pathway**

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**Objective** Previously we found that Ganoderma lucidum polysaccharide (GL-PS), a Chinese medicine with anti-cancer and immunomodulatory properties, could protect fibroblasts from photoaging. However, effects of GL-PS on melanocytes melanogenesis are unclear. Keratinocyte and fibroblast-derived melanogenic paracrine mediators are important for melanocytes melanogenesis. Here we aimed to investigate the efficacy and mechanism of GL-PS in melanocytes melanogenesis through paracrine effect.

**Methods** Cell viability of melanocytes (PIG1), keratinocytes (HaCaT) and fibroblasts (FB) exposed to GL-PS was measured by MTT assay. Then, treating HaCaT and FB cells with GL-PS, major melanogenic paracrine mediators (POMC, FGF2, ET-1, PTGS2) were evaluated by qRT-PCR and FGF2 contents of cell supernatant were measured by ELISA. After co-culturing supernatant of GL-PS treated HaCaT or FB with PIG1, melanogenesis-associated genes expressions in the PIG1 were measured by qRT-PCR and Western Blot. Furthermore, ERK, JNK and p38 phosphorylation levels were detected. Besides, IL-6 mRNA expression and STAT3 signaling protein were examined in HaCaT and FB.

**Results** We found GL-PS had no cytotoxicity to skin cells, and could inhibit major melanogenic paracrine mediators expressions in HaCaT and FB, especially FGF2. Moreover, after cell supernatant of GL-PS treated-HaCaT or FB

were co-cultured with PIG1 cells, the levels of MiTF, TYR, TYRP1, DCT, Rab27A and FSCN1 were downregulated in PIG1 cells, and ERK, JNK and p38 phosphorylation were also inhibited. Besides, GL-PS reduced IL-6 expression and STAT3 phosphorylation in HaCaT and FB .

**Conclusion** GL-PS can reduce melanocytes melanogenesis by inhibiting paracrine effect of keratinocytes and fibroblasts via IL6/STAT3/FGF2 signaling pathway.

PO03-066

### **Salvianolic acid B attenuates experimental SSc inflammation and fibrosis by protecting endothelial cells against oxidative stress injury**

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**Background** Systemic sclerosis (SSc) is a complex autoimmune disease that typically results in fibrosis of the skin and internal organs. Endothelial cell injury and subsequent inflammation play pivotal roles in the pathogenesis of fibrosis. We found previously that salvianolic acid B (SAB) could attenuate experimental skin and pulmonary fibrosis. Fibrosis is driven by inflammation, but the anti-inflammatory role and mechanism of SAB on the treatment of skin or pulmonary fibrosis is still unknown.

**Methods** Bleomycin (BLM)-induced SSc inflammation mouse model was used. H<sub>2</sub>O<sub>2</sub>-injured EA.hy926 endothelial cells to assess the protective effect of SAB against oxidative stress injury. Cell viability was measured with the xCELLigence systems. DCFH-DA was used to measure the intracellular ROS. Real-time PCR was used to examine the transcript levels of genes, and protein level was assayed by Western blot.

**Results** SAB had a strong anti-inflammatory effect on BLM-instilled mice. Moreover, SAB protected endothelial cells against oxidative stress injury and inhibited endothelial cell apoptosis in bleomycin-treated mice. Furthermore, SAB decreased the H<sub>2</sub>O<sub>2</sub>-induced overproduction of reactive oxygen species to protect EA.hy926 endothelial cells from oxidative damage, and further inhibited H<sub>2</sub>O<sub>2</sub>-induced permeability and overexpression of pro-inflammatory molecules. The next studies revealed that SAB inhibited the H<sub>2</sub>O<sub>2</sub>-induced cell apoptosis and attenuated the decrease of tight junction-related gene expression, resulting in a decrease of the endothelial permeability in injured endothelial cells.

**Conclusions** Taken together, these data indicate that SAB exerted anti-inflammatory roles in pulmonary fibrosis by protection of the endothelial cells against oxidative stress injury.

PO03-068

### **Study on anti-fibrotic mechanism of salvianolic acid B**

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**Objective** To investigate the possible anti-fibrotic mechanisms of salvianolic acid B (SAB) through NIH/3T3 fibroblasts.

**Methods** NIH/3T3 fibroblasts were divided into control group and treatment group after conventional culture, and then the fibroblasts were treated with exogenous transforming growth factor- $\beta$  (TGF- $\beta$ ). Real-Time Cell Analyzer (RTCA) system was used to detect the effect of SAB on cell proliferation. Dual luciferase reporter gene detection system was used to detect the effect of SAB on related plasmids. Western blot was conducted to determine the effect of SAB on phosphorylated Smad3 (p-Smad3) protein and  $\beta$ -catenin protein expression.

**Results** SAB inhibited NIH/3T3 fibroblasts proliferation induced by TGF- $\beta$ . Besides, SAB inhibited the transcription level of SBE, SRE, AP1 and TCF. Meanwhile, SAB reduced the protein level of p-Smad3 in NIH/3T3 fibroblasts. These results indicated that SAB could inhibit several fibrotic signaling pathways, such as TGF- $\beta$ /Smad dependent pathway related with SBE, TGF- $\beta$ /Smad independent pathway related with SRE and AP-1, and Wnt/ $\beta$ -catenin

pathway related with TCF. Moreover, SAB inhibited the TGF- $\beta$ /Smad signaling by reducing p-Smad3 protein expression and inhibiting SBE transcription. SAB inhibited the Wnt/ $\beta$ -catenin signaling by reducing  $\beta$ -catenin protein expression and inhibiting TCF transcription.

**Conclusion** SAB played an important role in anti-fibrotic process by inhibiting fibroblasts proliferation and down regulating several signaling pathways.

PO03-069

### **NLRP3 inflammasome mediated interleukin-1beta production in cancer-associated fibroblast contributes to ALA-PDT for Cutaneous squamous cell carcinoma**

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2. Institute of Photomedicine, Shanghai Skin Disease Hospital, Tongji University School of Medicine

**Objective** To uncover the mechanism of how the acute inflammatory response develops and progresses after ALA-PDT for cutaneous squamous cell carcinoma(cSCC).

**Methods** Differential gene expression analysis of RNA isolated from cSCC before and after ALA-PDT were performed using Affymetrix GeneChip® Mouse Gene 1.0 ST Array. The expression and transcriptional activity of IL1r1 and IL1 $\beta$  in human SCC biopsies and PDT-treated culture cells were determined by IHC, WB, and RT qPCR. Using WB, the expression of NLRP3 inflammsome and p65/pp65 were detected. The role of IL1 $\beta$  on effect of ALA-PDT was assessed in vitro.

**Results** Inflammatory cytokines and receptors transcript screening identifies IL1r1 gene rank as the top 5. Significantly upregulated IL1r1 after PDT was replicated using RT-PCR. IL1r1 and IL1 $\beta$  expression after ALA-PDT in patients SCC biopsies were confirmed by RT-PCR and IHC. In vivo, intralesional injection of anti-IL-1 $\beta$  mAb or caspase 1 inhibitor during PDT-treatment marginally delayed SCC development in SCC mice compared to blank control. We confirmed by IHC that IL1 $\beta$  was mostly increased in CAFs after ALA-PDT in patients. The expression of NLRP3, ASC, caspase1, IL1 $\beta$  and pp65/p65 especially caspase1 p20 was elevated 24h after ALA-PDT in CAFs.

**Conclusion** ALA-PDT stimulates the local acute inflammatory response by activating NLRP3 inflammasome with IL1 $\beta$  production in CAFs and the acute inflammatory response further promotes the photodynamic therapy for cSCC.

PO03-070

### **Effect of 4-hydroxyphenyl-retinamide on type I pro-collagen and MMP-1 mRNA expression of keloid fibroblasts**

Mei-lan Nan, Zhe-Hu Jin, Cheng-Long Jin

Affiliated Hospital, Yanbian University

**Objective** To investigate the effect of 4-hydroxyphenyl-retinamide on type I pro-collagen and MMP-1 mRNA expression of keloid fibroblasts.

**Methods** Evaluated the expression and distribution of type I pro-collagen and MMP-1 mRNA with real-time PCR in human keloid fibroblasts and normal fibroblasts. Set up four groups, that is control group, different concentrations of 4-HPR (1  $\mu$ mol/L, 3  $\mu$ mol/L and 6  $\mu$ mol/L) groups, comparative the expression of type I pro-collagen and MMP-1 mRNA, effecting of 4-HPR therapy on in human keloid fibroblasts.

**Results** Real-time PCR revealed difference of type I pro-collagen and MMP-1 mRNA between keloid fibroblasts and normal fibroblasts ( $p < 0.05$ ). Compared with the control group, expression of type I pro-collagen mRNA decreased and MMP-1 mRNA increased of keloid fibroblasts and in the 4-HPR group, the difference was statistically significant ( $p < 0.05$ ), and its role showed as 4-HPR dependent of concentration.

**Conclusion** Type I pro-collagen and MMP-1 may play some roles in the regulation of keloid formation. 4-HPR inhibits the expression level of type I pro-collagen and promote MMP-1 mRNA.

PO03-072

**Photothermal-photodynamic therapy induced by Au<sub>25</sub>(Capt)<sub>18</sub>-nanocluster under single NIR irradiation for the treatment of cutaneous squamous cell carcinoma**

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*Institute of Photomedicine, Shanghai Skin Disease Hospital, Tongji University School of Medicine*

**Objective** To establish an Au<sub>25</sub>(Capt)<sub>18</sub>-nanocluster induced PTT-PDT therapy system under single 808 nm laser for the treatment of cutaneous squamous cell carcinoma (cSCC). Investigate its safety, availability and immune effect both in vitro and in vivo.

**Methods** Synthesize Au<sub>25</sub>(Capt)<sub>18</sub> by one-pot method. Photodynamic effect was assessed by SOSGR, and photothermal effect was characterized by infrared thermal imaging test. The cSCC primary cells isolated from the cSCC primary SKH1 mice models induced by solar-simulated ultraviolet irradiation were divided into 4 groups: PTT-PDT, 808 nm laser, Au<sub>25</sub>(Capt)<sub>18</sub> and control. Cell viabilities were measured by CCK-8 method to assess the safety, availability of our therapy. The therapeutic effect in vivo was observed by fabricating cSCC plant tumor models on SKH1 mice. And at the day 90th after our treatment, 3 mice were secondary inoculated to investigate the immune memory effects.

**Results** Au<sub>25</sub>(Capt)<sub>18</sub> under 808 nm laser irradiation showed a good PTT and PDT effect. Cell viabilities of cSCC primary cells was much lower than other three groups ( $P < 0.01$ ). Tumors of PTT-PDT group mice disappeared after treatment and did not relapse after 90 days. In the immune effect experiment, the tumors disappeared on 15th after secondly inoculation.

**Conclusion** An Au<sub>25</sub>(Capt)<sub>18</sub>-nanocluster induced PTT-PDT therapy system was successfully established, firstly realizing a PTT-PDT combination therapy for the treatment of cSCC induced by a single material under a single wavelength laser both in vitro and in vivo. Further more, a strong immunological memory effect was observed, which could inhibit the recurrence of cSCC.

PO03-073

**Tranexamic acid suppresses the activity of epidermal melanocytes of mice after ultraviolet B ear irradiation**

Zhuren Ruan, Shan Jiang

*Renmin Hospital of Wuhan University*

**Objective** To examine the effects of tranexamic acid on epidermal melanocytes of mice after ultraviolet (UV) B ear irradiation.

**Method** Twenty four females C57 mice (20~24 g), randomly divided into NS group, TA group, UVB/NS group, and UVB/TA group. The UVB-irradiated group was locally irradiated the ear with UVB at a dose of 250 mJ/cm<sup>2</sup> per day for 3 days. The UVB/TA group and TA group were orally administered tranexamic acid (750 mg/Kg/d) at 30min before UVB exposure, and the UVB/NS group and NS group were given to equal amount of normal saline by gavage. Cell counter and the morphological changes were accessed by using microscope in combination with Dopa staining. Quantitative real-time PCR (qRT-PCR) to analysis the mRNA expression of tyrosinase (TYR), tyrosinase-related protein-1 (TYRP1), tyrosinase-related protein-2 (TYRP2) and microphthalmia transcription factor (MITF) of the ear.

**Result** As compared with the NS group, the number of Dopa-positive melanocytes increased remarkably in the UVB/NS group ( $P < 0.01$ ), the dendritic of these cells were numerous and prolonged ( $P < 0.01$ ). While the administration of TA down-regulated the expression of Dopa-positive melanocytes ( $P < 0.05$ ), the number and length of dendrites were alleviated with significant difference as well ( $P < 0.05$ ). The expression of TYR, TYRP1, TYRP2 and MITF were increased by UVB irradiation of the ear, however, the increase in those genes were suppressed by TA treatment ( $P < 0.05$ ).

**Conclusion** Tranexamic acid suppresses the activity of epidermal melanocyte after UVB ear irradiation by decreasing the expression of TYR, TYRP1, TYRP2 and MITF.

PO03-074

**Short-term ozone exposure stimulates insulin growth factor receptor (IGF1R) and epidermal growth factor receptor (EGFR) crosstalk to promote diabetic wound healing**Jian-Yun Lu<sup>1</sup>, Xiao-Qi Wang<sup>1,2</sup>, Li-Hua Gao<sup>1</sup>, Jin-Hua Huang<sup>1</sup>, Amy Paller<sup>2</sup>1. *the Third Xiangya Hospital of Central South University*2. *Northwestern Univ., Chicago, IL, USA*

As a potent disinfectant and oxygen (O<sub>2</sub>) donor, ozone (O<sub>3</sub>) has been studied for therapeutic use. By topical application of ozonated oil to the lesional area of chronic wounds, we have observed improved oxygenation and enhanced healing. The mechanism of O<sub>3</sub> action on skin cells during wound healing is largely unknown. We hypothesized that topical application of O<sub>3</sub> stimulates IGF1R/EGFR crosstalk and related downstream signaling pathways to promote wound healing. Using a diet induced obese diabetic mouse model, we observed that topical application of O<sub>3</sub> oil promoted diabetic wound healing clinically through activation of IGF1R, EGFR and VEGFR in diabetic wounds. Histopathological examination showed increased (2-2.5 fold) 5-Bromo-2-Deoxyuridine (BrdU) labeling index and keratinocyte migration (1.9-2.3 fold) on the wound edge along with decreased (2-3.1 fold) epidermal gap and increased (1.7-fold) granulation tissue. The mechanisms of O<sub>3</sub> exposure facilitated wound healing involved in increased crosstalk of IGF1R and EGFR and their downstream signaling pathways, PI3K/Akt and ERK. By WST (water soluble tetrazolium) assay, *in vitro* wound scratch assay and immunoblotting, we demonstrated that briefly exposure to O<sub>3</sub> (20 mM, 2 h) daily increased cell proliferation ( $p < 0.001$  HG vs. HG+O<sub>3</sub> within 24h, and  $p < 0.01$  NG vs. NG+O<sub>3</sub> by 72h) and enhanced cell migration ( $p < 0.001$  HG vs. HG+O<sub>3</sub> by 24h and  $p < 0.05$  NG vs. NG+O<sub>3</sub> by 60h post scratch in mouse KCs and  $p < 0.01$  HG vs. HG+O<sub>3</sub> by 6h and  $< 0.05$  NG vs. NG+O<sub>3</sub> by 18h post wounding in human KCs). Furthermore, we found that, under NG condition, brief O<sub>3</sub> exposure increased EGF-stimulated ERK phosphorylation by 1.7-fold, AKT phosphorylation at Thr 308 and PI3K by 2.1-fold and AKT at Ser 473 by 2.9-fold, and increased IGF-1 stimulated ERK phosphorylation by 1.5-fold. Interestingly, under HG condition, both EGF and IGF-1 reversed HG inhibition on PI3K/Akt and ERK activation. We have also noted that O<sub>3</sub> exposure stimulated keratinocyte proliferation and migration was completely inhibited by disrupting of both EGFR and IGF1R. These findings suggest that topical exposure O<sub>3</sub> requires both EGFR and IGF1R to accelerate wound healing.

PO03-075

**Ozonated oil suppresses and ameliorates allergic contact dermatitis induced by 2,4-dinitrochlorobenzene in guinea pig**Jian-Yun Lu<sup>1</sup>, Zhi-Bing Fu<sup>1</sup>, Jie Zhang<sup>1</sup>, Ya-Ping Xiang<sup>1</sup>, Li-Hua Gao<sup>1</sup>, Xiao-Qi Wang<sup>1,2</sup>1. *the Third Xiangya Hospital of Central South University*2. *Northwestern Univ., Chicago, IL*

Allergic contact dermatitis (ACD) is a common, irritability, T-cell-mediated cutaneous inflammatory skin disease. Our previous studies have shown that topical ozone treatment can effectively ameliorate skin lesions in AD patients, but it is yet to be determined if ozone can suppress development of allergic contact dermatitis induced by 2,4-dinitrochlorobenzene (DNCB) and ameliorate it. In this study, guinea pigs were repeatedly challenged with DNCB on the back to develop ACD lesions and were treated with ozonated oil simultaneously (compared to the group treated with vehicle) or subsequently (compared to the groups treated with vehicle and Mometasone Furoate Cream). Photographing guinea pig's back skin lesions, thickness measurement of skin epidermis by histological analysis and reflectance confocal microscopy (RCM), scratch times were used for the measurement of efficacy. We found that ozonated oil significantly suppressed the formation of skin lesions of allergic contact dermatitis and has a therapeutic effect on the dermatitis lesions. After the experimental treatment of ozonated oil, the thickness of epidermis did not proliferate significantly, which was significantly different from non treatment ( $p < 0.01$ ). From the histopathology and RCM pictures we found that topical ozone treatment significantly improved keratinization of the stratum corneum, clear basal layer structure and reduction in inflammatory cell infiltration. Scratch times of groups treated simultaneously or subsequently with ozonated oil were also significantly less or decreased compared to others

groups ( $p < 0.05$ ). Taken together, ozonated oil is a well-tolerated and effective prophylaxis/treatment for allergic contact dermatitis, and shows comparable efficacy to Glucocorticoid external agents such as Mometasone Furoate Cream, may be a potential remedy for persistent allergen exposure in patients with allergic contact dermatitis.

PO03-076

### Up regulation of $\beta$ -catenin delay UVB-induced senescence in human skin fibroblasts by antioxidant stress and suppressing p16INK4a

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**Background**  $\beta$ -catenin has critical roles in regulating cell proliferation, differentiation, apoptosis, and senescence. However, the impact of  $\beta$ -catenin activation on life span of primary cultured human skin fibroblasts (HSF) are poorly understood. The aim of this study was to investigate the effect of over-expression  $\beta$ -catenin on oxidative stress and the expression of p16INK4a in Ultraviolet-B (UVB)-induced premature senescence of HSF.

**Methods.** The recombinant plasmid (pcDNA3.1- $\beta$ -catenin) and pEGFP were cotransfected into HSF. Empty vector pcDNA3.1 was used as a negative control. Then transfection cells were exposed for UVB irradiation (30 mJ/cm<sup>2</sup>). The reverse transcription-polymerase chain reaction (RT-PCR) and Western blot to determine the expression of  $\beta$ -catenin and p16INK4a in these cells, the cell morphological change was analyzed by microscopy, and the kits to estimate the activities of the senescence-associated  $\beta$ -galactosidase (SA- $\beta$ -gal), reactive oxygen species (ROS), and superoxide dismutase (SOD).

**Results** Over-expression of  $\beta$ -catenin in HSF led to a marked delay of many senescent phenotypes induced by UVB, including UVB-induced cell morphology changes, UVB-induced increases in SA- $\beta$ -gal activity, UVB-induced decreases in cell viability, UVB-induced ROS accumulation and UVB-induced decreases of SOD. Furthermore, over-expression of  $\beta$ -catenin in HSF can antagonize the alteration of p16INK4a expression induced by UVB treatment.

**Conclusions** Our data provided evidence that the up-regulation of  $\beta$ -catenin in HSF can delay UVB-induced premature senescence by its antioxidant ability and suppressing p16INK4a expression.

PO03-078

### Treatment and mechanism of alpha 1 antitrypsin on guinea pig skin photoaging model

Chunli Yao, Xue Li, Shuang Wang

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**Objective** To explore the prevention and therapeutic effect of AAT on Guinea pig skin photoaging as well as the possible mechanism.

**Methods** Sixty female guinea pigs were randomly divided into ten groups: blank control group, model group, prevent group, high-dose treatment group by intraperitoneal injection, low-dose treatment group by intraperitoneal injection, high-dose treatment group by external use, low-dose treatment group by external use, positive control group, negative control group one, negative control group two. Except the blank control group, all the others were exposed to 20 W UVA and UVB light combined with 0.1% Methoxsalen Solution for 80 days, add up to about 120 hours to establish photoaging model. And then those photoaging animal models were given different drugs separately. Observe and compare each group through general skin changes and pathological changes. Quantify the related cytokines and enzymes of each group with Elisa. Statistical analysis was carried out by one-way analysis of variance followed by SNK test or Dunnett's T3 test.

**Results** The guinea pigs of model group showed typical changes both in general skin and in pathology, however, those photoaging changes of prevent group, positive control group and four treatment groups were significantly reduced especially those of prevent group and two high-dose treatment groups. The IL-1, IL-6 and TNF- $\alpha$  level of model group were significantly high than that of blank control group ( $P < 0.05$ ). Compared with model group, IL-1,

IL-6 and TNF- $\alpha$  level of prevent group and four treatment groups were decreased with significance ( $P < 0.05$ ). The IL-1, IL-6 and TNF- $\alpha$  level of two high-dose treatment groups (both by intraperitoneal injection and by external use) were significantly lower than that of corresponding two low-dose treatment groups ( $P < 0.05$ ). Those enzymes level of NE, MMP-1, MMP-2 and Cath-G showed almost the same changes as the cytokines.

**Conclusion** AAT could prevent and treat skin photoaging in a dose-dependent manner, the therapeutic effect of which is better than that of tretinoin. The possible mechanism may exist in that AAT could reduce the expression of related cytokines such as IL-1, IL-6, TNF- $\alpha$  and related enzymes such as NE, MMP-1, MMP-2, Cath-G.

PO03-079

### Expression of IL-17 in different organs of MRL/lpr mice

Lihua Zeng, Xue-Biao Peng

Nanfang Hospital, Southern Medical University

**Objective** In order to confirm whether IL-17 and IL-17+T cells are involved in the pathogenesis of SLE and whether they are related to the involved tissues and organs, the expression of IL-17 in peripheral blood and kidney and the expression of  $\alpha\beta$  T cells and  $\gamma\delta$  T cells secreting IL-17 in the spleen of MRL/lpr mice were detected.

**Methods** The experimental animals were 10-week-old female C57BL / 6J mice and 10, 16 and 22-week-old female MRL/lpr mice. Serum IL-17 level was determined by ELISA. The expression of IL-17, IgG and C3 in kidney was detected by immunohistochemical method. The percentage of  $\alpha\beta$  T cells and  $\gamma\delta$  T cells producing IL-17 in the spleen were detected by flow cytometry.

**Results** 1. The level of serum IL-17 in MRL/lpr mice increased. 2. The expression of IgG, C3 and IL-17 in the kidney tissues of MRL/lpr mice was apparently more than that in control group, and with the increase of week age, it was progressively higher. 3. The percentage of IL-17+ $\alpha\beta$  T cells and IL-17+ $\gamma\delta$  T cells in the spleen of MRL/lpr mice was significantly lower compared to control group.

**Conclusions** IL-17A in serum and kidney of MRL/lpr mice increases significantly with the increase of week age. IL-17 is mainly produced by  $\gamma\delta$  T cells. The proportion of IL-17+T cells in spleen of MRL/lpr mice decreases.

PO03-080

### Expression of IL-17-producing T lymphocytes in peripheral blood of patients with systemic lupus erythematosus and their correlations with disease activity

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**Objective** To determine the types of T cells secreting IL-17 in peripheral blood of patients with SLE and the role of  $\gamma\delta$  T cells in the pathogenesis of SLE.

**Methods** The levels of TCR  $\alpha\beta$ , TCR  $\gamma\delta$  and IL-17 in peripheral blood of patients with SLE and healthy people were detected by flow cytometry. To explore the correlations between them and SLEDAI and identify which kind of cells that mainly secrete IL-17.

**Results** The percentages of IL-17+PBMC and IL-17+ $\alpha\beta$  T cells in SLE patients were significantly higher than those in the control group. The percentage of  $\gamma\delta$  T cells in peripheral blood of SLE patients was significantly lower than that of control group. The percentage of  $\alpha\beta$  T cells, IL-17+PBMC, IL-17+ $\alpha\beta$  T cells and IL-17+ $\gamma\delta$  T cells in patients with SLE were positively correlated with disease activity. Percentage of  $\gamma\delta$  T cells was associated with primary lupus, but not with disease activity.

**Conclusions** IL-17 is mainly produced by  $\alpha\beta$  T cells in human PBMC.  $\alpha\beta$  T cells, IL-17+PBMC, IL-17+ $\alpha\beta$  T cells and IL-17+ $\gamma\delta$  T cells can be used to reflect the activity of SLE. The number of  $\gamma\delta$  T cells in peripheral blood of SLE patients is declining.

PO03-082

**Long noncoding RNA associated-competing endogenous RNAs in UVB-induced premature senescence of human dermal fibroblasts**

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MicroRNAs have been discovered playing an important role in the regulation of gene expression at the post-transcriptional level. Recently, some researches suggest a complex post-transcriptional regulatory network mediated by miRNAs. Protein-coding and noncoding RNAs can regulate expressions of each other by competing for binding to miRNAs in the ceRNA network. In this study, we focused on lncRNAs which is associated with UVB-induced premature senescence and several experimental databases were used to predict the ceRNA network.

Normal human dermal fibroblasts were exposed to 50 mJ/cm<sup>2</sup> of UVB irradiation. The cells were collected post-irradiation for RNA extracting. Microarrays and qRT-PCR were used to study global miRNA and lncRNA expression profiles. MiRcode, an lncRNA-miRNA interaction prediction algorithm, was utilized for predicting the lncRNA-miRNA interactions during the ceRNA network. The targeted mRNAs of changed miRNAs were summarized from TarBase, an experimentally validated microRNA-target interactions database.

In total, 54 miRNAs were up- or down-regulated for more than 5-fold while 181 lncRNAs were differentially expressed between UVB irradiated and non-irradiated dermal fibroblasts (fold change > 5, P-value < 0.05). Based on miRcode and Tarbase, we constructed an lncRNA-miRNA-mRNA ceRNA network. In this ceRNA network, eight lncRNAs and one miRNAs were involved.

Our study demonstrates that lncRNA plays an important role in ceRNA network and suggests a predictive and functional link in gene expression regulation. Research of ceRNA might be a new approach to interfere cellular processes and may be a potential therapeutic method for diseases.

PO03-083

**Langerhans cells, dermal Langerin(+) dendritic cells and monocyte-derived dendritic cells contribute differentially to atopic dermatitis in mice via modulating TSLP production in early stage**Zhen-Lai Zhu<sup>1</sup>, Chun-Ying Xiao<sup>1</sup>, Chen Zhang<sup>1</sup>, Er-Le Dang<sup>1</sup>, Yu-Feng Liu<sup>1</sup>, Gang Wang<sup>1</sup>, Wei Li<sup>1,2</sup>*1. Department of Dermatology, Xijing Hospital, Fourth Military Medical University, Xi'an, China**2. Department of Dermatology, Huashan Hospital, Fudan University, Shanghai, China*

**Objectives** Skin dendritic cells (DCs) orchestrate the immune responses in atopic dermatitis (AD). However, the function of different DCs in AD remains elusive. In the present study, the role of Langerhans cells (LCs), dermal Langerin (+) DCs and monocyte-derived DCs in AD, especially for their role in regulating TSLP production at initial stage, was investigated in MC903-induced AD mice model.

**Methods** With mLangerin-DTR and hLangerin-DTA mice, MC903 was painted to induce AD-like dermatitis when LCs were consecutive or inducible loss, or absence of only dermal Langerin (+) DCs or both LCs and dermal Langerin (+) DCs. Ear thickness, infiltrating cells, scratching behavior, skin barrier, serum IgE and percutaneous sensitization were assessed. Moreover, TSLP production at early stage was measured. In addition, monocyte-derived DCs were monitored using Lyz2cre-Rosa26YFP mice.

**Results** Deletion of both LCs and dermal Langerin (+) DCs, neither LCs or dermal Langerin (+) DCs alone, can significantly alleviate the AD phenotypes including milder ear thickness, lower transepidermal water loss, less scratch behavior, lower IgE and percutaneous sensitization. Furthermore, absence of both LCs and dermal Langerin (+) DCs, not LCs alone, can significantly reduce the TSLP production from skin lesion, while deletion of dermal Langerin (+) DCs up-regulated TSLP production. Moreover, monocyte-derived DCs rapidly infiltrated into the skin lesion to up-regulate the TSLP production.

**Conclusion** Our data suggested that LCs and dermal Langerin (+) DCs play a compensatory role in facilitating the MC903-induced AD in mice, while absence of LCs alone was dispensable. At the early stage, monocyte-derived DCs can be rapidly recruited into dermis and promote the production of TSLP.

PO03-084

**Study of correlation between HLA allele and leprosy in Guizhou province**

Jie Fang

*Department of Dermatology, the First People's Hospital, Bijie***Objective** To explore the association of HLA-A, HLA-B, HLA-DRB1 and HLA-DQ alleles with leprosy.**Methods** Polymerase chain reaction-sequence specific primers (PCR-SSP) was used to genotype HLA-A, HLA-B, HLA-DRB1 and HLA-DQ alleles in 43 patients. 23 cases of Healthy adult were enrolled as the control group.**Results** The allele frequencies of HLA-A\*02 was lower in leprosy patients than that in healthy controls ( $\chi^2 = 6.629$ ,  $P < 0.05$  vs. control for both alleles). The allele frequencies of HLA-A\*02 was lower in LL leprosy patients than that in healthy controls ( $\chi^2 = 7.935$ ,  $P < 0.05$ ). The allele frequencies of HLA-B\*46 were lower in LL leprosy patients than those in healthy controls ( $\chi^2 = 3.893$ ,  $P < 0.05$ ). The allele frequencies of HLA-DRB1\*15 was higher in leprosy patients than that in healthy controls ( $\chi^2 = 3.987$ ,  $P < 0.05$  vs. control for both alleles). The allele frequencies of HLA-DRB1\*16 was lower in LL leprosy patients than that in healthy controls ( $P < 0.05$ ). The allele frequencies of HLA-DRB1\*15 were higher in LL leprosy patients than those in healthy controls ( $\chi^2 = 4.840$ ,  $P < 0.05$ ).**Conclusion** HLA-B\*46 could be protective genes against LL leprosy. HLA-A\*02 may be protective genes against leprosy patients. HLA-DRB1\*16 could be protective genes against LL leprosy. HLA-DRB1\*15 may be a susceptibility gene in leprosy patients.

PO03-085

**Study on mechanism of atenolol in treatment of infantile hemangioma**

Keyao Li, Jian-Ping Tang

*Hunan Children's Hospital***Objective** This research mainly through the study of atenolol on Hemangioma endothelial cells (HemEC) viability and apoptosis, and to explore the mechanism of atenolol in the treatment of infantile hemangioma.**Methods** the effects of drugs atenolol: infantile hemangioma endothelial cells (HemEC) cultured in vitro, and the cultured Umbilical Vein Endothelial Cells (HUVEC) as the control group. Used the MTT test and flow cytometry to cell viability and apoptosis of two kinds of cells.**Results** Compared with the control group, the low dose atenolol ( $< 75 \mu\text{mol/L}$ ) had no significant effect on the activity of HemECs, but when the concentration was more than  $75 \mu\text{mol/L}$ , the cell activity was significantly reduced at 24h and 48h. The apoptosis rate also increased at the concentration of more than  $75 \mu\text{mol/L}$ , especially when the concentration was  $300 \mu\text{mol/L}$ .**Conclusions** Atenolol has obvious anti proliferation effect on HemEC.

PO03-086

**Effect and mechanism of IL-33 on skin wound healing in diabetic mice**

Rong-Guo He, Kang Zeng

*Department of Dermatology, Nanfang Hospital, Southern Medical University***Objectives** To investigate the potential efficacy of IL-33 on dermal wound healing in streptozotocin-induced diabetic mice.**Methods** A full-thickness skin wound was generated on the back of diabetic mice and treated with IL-33 or vehicle topically. ECM formation, neovascularization and granulation tissue generation on local wound tissues were detected by histopathological examination. In vitro, the effect of IL-33 on the proliferation, chemotaxis and secretion function of NIH3T3 cells was studied, and the induction effect of IL-33 on macrophage polarization and the effect of

macrophage polarization on NIH3T3 cells were explored.

**Results** Our data showed that IL-33 delivery contributed to diabetic wound closure with wounds gaping narrower and exhibiting elevated re-epithelialization. IL-33 promoted the new extracellular matrix (ECM) deposition and angiogenesis formation, which indicates an important role of IL-33 on matrix synthesis and neovascularization. Meanwhile, IL-33 accelerated the development of M2 macrophages in wound sites in vivo, and amplified IL-13-induced polarization of bone marrow-derived macrophages toward a M2 phenotype in vitro. Furthermore, IL-33-amplified M2 macrophages augmented the proliferation of fibroblasts and ECM deposition.

**Conclusions** IL-33 treatment accelerates the skin wound healing in diabetic mice. IL-33 can directly and indirectly affect the biological functions of fibroblasts, such as chemotaxis, proliferation and secretion, and then accelerates the generation of ECM, new vessels and granulation tissue. These results strongly suggest manipulation of IL-33-mediated signal might be a potential therapeutic approach for diabetic skin wounds.

PO03-087

### Comparison of the effect of propranolol and itraconazole on biological behavior of HUVEC

Yi Zhao, Hong Liang

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**Objective** To observe and compare the effect of propranolol and itraconazole on the biological behavior of human umbilical vein endothelial cells (HUVEC) in vitro.

**Methods** HUVEC was cultured in Dulbecco's modified Eagle's medium (DMEM) supplemented with 10% Fetal Bovine Serum (FBS) and exposed to the different concentrations of Propranolol and Itraconazole. Cell counting kit-8 (CCK-8) assay was employed to detect the cell proliferation, Annexin V-FITC/PI double-staining was used to determine the apoptosis of HUVEC, and the ability of HUVEC migration and tube formation were examined by cell migration assay (wound scratch assay and transwell assay) and tube formation assay respectively. The concentration of two drugs in cell apoptosis assay, migration assay and tube formation assay was based on the result of CCK-8 assay.

**Results** The inhibition rate of propranolol and itraconazole on proliferation of HUVEC were increased in a dose-dependent after drug processing for 24 h, and then we acquire suitable concentration of propranolol and itraconazole by calculated IC<sub>50</sub> (164.58±3.27 μM and 1.54±0.13 μM) separately. As compared with untreated control, the early apoptosis rate of propranolol (100 μM) and itraconazole (1.0 μM) were significantly increased respectively, while the migration ability and the tube formation capacity were significantly inhibited. The effect of itraconazole on the biological behavior of HUVEC is more powerful when compared with propranolol.

**Conclusion** Propranolol and itraconazole dramatically suppress the ability of proliferation, migration and tube formation and promote the apoptosis of HUVEC. The effect of itraconazole on the biological behavior of HUVEC is more powerful when compared with propranolol.

PO03-090

### Pruritus: progress toward pathogenesis and treatment

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Pruritus, a most common cutaneous symptom, is widely seen in many skin complaints. It is an uncomfortable feeling on the skin, and sometimes impairs patients' quality of life. At present, the specific mechanism of pruritus still remains unclear. Antihistamines, which are usually used to relieve pruritus, ineffectively work in some patients with itching. Recent evidence has suggested that, apart from histamine, many mediators and signaling pathways are involved in the pathogenesis of pruritus. Various therapeutic options for itching correspondingly have been developed. In this review, we summarize the updated pathogenesis and therapeutic strategies for pruritus.

Pruritus or itching is an unpleasant feeling that causes a desire to scratch, which negatively affects psychological and physical aspects of the life. It is the most common symptom of skin diseases, sometimes trifling or light and

sometimes intolerable. It is also the most common reasons for patient to consult dermatologist. The pruritus may exist continuously or occur intermittently. Its site may be local or generalized. Itching is primarily associated with the free teloneuron which distributes in the superficial layers of the epidermis. The most of itching-related skin diseases are contact dermatitis, eczema, urticaria, neurodermatitis, prurigo and cutaneous pruritus. In addition, the pruritus may emerge from systemic diseases including inflammatory diseases, metabolic diseases, infection, neurologic disorders, endocrine diseases, psychiatric disorders, cancer, etc.

It is generally considered that the cause of itching is extremely complicated and many factors are involved in itching including internal and external factors. The intrinsic factors may be related to chronic infection, block of blood circulation, change of endocrine and metabolism, hereditary tendency to allergies, and so on, while the extrinsic ones are more complex and changeable, consisting of food, inhaled substances, chemical materials, animal hair and fur skin, etc.

Until now, the exact pathogenesis of pruritus keeps unknown. Previously, it was thought that histamine mediator was primarily involved in the attack of pruritus. However, recent reports show that some mediators, such as 5-hydroxy tryptamine (5-HT), proteases, opioid peptide, peptides, and so on, play crucial role in the mechanism of itching. Besides, signaling pathways have important effects on it. Accordingly, phototherapy, topical medication, systemic treatment and traditional Chinese medicine are developed to pave the way for the relief of pruritus.

PO03-091

### **Mechanism about treatment of nourishing the liver and kidney to regulate melanocyte apoptosis induced by oxidative damage**

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**Objective** exploring the mechanism treatment of nourishing the liver and kidney for vitiligo by melanocyte apoptosis induced by oxidative damage in mice.

**Methods** the model is preconditioning B16 melanocytes with nourishing liver-kidney and paeoniflorin, using hydrogen peroxide to induce apoptotic, then observing its effect on melanocytes. It have four groups: normal cell control group; hydrogen peroxide injury model group; nourishing liver kidney recipe group and paeoniflorin group. The cell viability was detected by MTT assay, cell apoptosis by flow cytometry, the nuclear changes of apoptotic cells by Hoechst33342, and Caspase-3 and Caspase-9 by Western blot.

**Results** In the experiments of mitochondrial membrane potential, cell viability, apoptosis and nuclear changes of apoptotic cells, the activity of the cells in the model group was the lowest, and the activity in the control group was the highest. The activity of the cells in the whole group and the peony group was middle. There was a significant difference in the cell activity ( $P<0.01$ ). There was differences among the apoptosis-related proteins Caspase-3, Caspase-9. The indicators of apoptosis in the model group increased significantly, the drug group was centered.

**Conclusion** The herbs can increase the activity of melanocytes and reduce the sensitivity of apoptosis of melanocytes. The two groups of drugs can maintain the stability of melanocyte mitochondrial membranes and prevent cell depolarization and apoptosis. Therefore, the nourishing liver and kidney method of traditional Chinese medicine may be one of the mechanisms that can effectively treat vitiligo by preventing mitochondria-mediated apoptosis.

PO03-092

**miRs-103/107 regulate autophagy in the epidermis**

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**Purpose** In our previous studies, we have shown that microRNAs-103 and 107 (miRs-103/107) positively regulate end-stage autophagy via ensuring dynamin activity in cultured human limbal epithelial keratinocytes. Most work in end-stage autophagy has been conducted using in vitro model systems. However, in vivo regulation of end-stage autophagy in epidermis remains unknown.

**Methods** We used antagomirs to subcutaneously knock-down miR-107 in the mouse skin; conversely, we delivered miR-107 mimic subcutaneously via in vivo transfection to increase this miRNA.

**Results** We found that antagomir-107 treatment in epidermis: (i) depleted endogenous miR-107; (ii) increased GFP-LC3 puncta in epidermal basal layers of GFP-LC3 transgenic mice, indicative of an accumulation of autophagosomes; (iii) inhibited LC3 turnover and increased p62, suggesting an inhibition of autophagy flux; and (iv) increased phosphorylated dynamin (p-dynamin, an inactive form), a key enzyme in end-stage autophagy. Conversely, miR-107 mimic treatment in mouse epidermis: (i) increased miR-107; (ii) decreased GFP-LC3 puncta in epidermal basal layers of GFP-LC3 transgenic mice; (iii) increased LC3 turnover and inhibited p62; and (iv) diminished p-dynamin, indicative of activation of this enzyme. In human epidermal keratinocytes, antagos-103/107 lead to the formation of large vacuoles in the cells and an increase in p-dynamin, which can be rescued by inhibition of PKC pathway.

**Conclusion** Collectively, these results suggest that the miRs-103/107 family have a critical role in regulating end-stage autophagy in mouse epidermis via PLD1/2 / PKC / dynamin pathway.

PO03-095

**Serum levels of brain-derived neurotrophic factor are associated with depressive symptoms in patients with acne vulgaris**

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**Objective** The aim of this study was to investigate the prevalence of depressive disorder in patients with acne vulgaris and explore its potential association with serum brain-derived neurotrophic factor levels.

**Methods** The study included 118 consecutive acne vulgaris patients and 56 controls. The presence of depressive symptoms was defined as PHQ-9 scores  $\geq 10$ . The measurement of serum BDNF was performed by ELISA.

**Results** Depression was identified in 20 acne vulgaris patients (17%). There was a negative correlation between levels of BDNF and the PHQ-9 scores ( $r = -0.486$ ,  $P < 0.001$ ) in acne vulgaris patients. Patients with depression showed lower serum BDNF levels compared with patients without depression and controls ( $z = 4.498$ ,  $4.533$ ,  $P < 0.001$ ). No difference was found in serum BDNF levels between normal controls and acne vulgaris patients without depressive symptoms ( $z = 0.964$ ,  $P > 0.05$ ). The lower serum BDNF was a risk factor for acne vulgaris patients with depression symptoms ( $OR$  0.531, 95%  $CI$ : 0.360-0.784;  $P < 0.05$ ). With the area under the ROC curve at 0.82 (95%  $CI$ , 0.714-0.925), the optimal cutoff value of serum BDNF levels as an indicator for screening of depression was estimated to be 12.275 ng/ml, which yielded a sensitivity of 72% and a specificity of 85%.

**Conclusion** Serum BDNF levels were decreased in acne vulgaris patients with depression. Serum BDNF levels could serve as a novel predictor for depression in acne vulgaris patients.

PO03-096

**Regulation of hair follicle development by exosomes derived from dermal papilla cells**

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**Background** Dermal papilla cells (DPCs) play a critical role in the regulation of hair follicle (HF) growth, formation, and cycling. DPCs are thought to regulate HF growth through a paracrine mechanism, in which exosomes may play a critical role. In this study, we investigated the function of exosomes derived from DPCs (DPC-Exos) in HF cycle regulation and hair cell growth.

**Methods** DPC-Exos were isolated by ultrafiltration and detected by tunable resistive pulse-sensing analysis, transmission electron microscopy, and western blotting. DPC-Exos were cutaneously injected into HFs at different HF cycle stages and the effects were evaluated by histological and immunohistochemical analyses. The effects of DPC-Exos on proliferation, migration, and cell cycle status of outer root sheath cells (ORSCs) were evaluated with the MTS assay, transwell and scratch assays, and flow cytometry, respectively. After treatment of DPC-Exos, changes in mRNA and protein levels of  $\beta$ -catenin and Sonic hedgehog (Shh) in ORSCs were detected by reverse transcription PCR and western blotting, respectively.

**Results** DPC-Exos were approximately 105 nm in diameter and expressed tumor susceptibility gene 101, cluster of differentiation (CD)9, and CD63. Injection of DPC-Exos delayed HF catagen and accelerated the onset of anagen in mice. Immunohistochemical analyses revealed that  $\beta$ -catenin and Shh levels were upregulated in the skin. In vitro, DPC-Exo treatment enhanced ORSC proliferation and migration, and stimulated the expression of  $\beta$ -catenin and Shh.

**Conclusion** DPC-Exos contribute to the regulation of HF growth and development, and provide a potential avenue for the treatment of hair loss.

PO03-097

**IL-17R adaptor Act1 D10N missense variant impairs CD40 signaling in human B-cells**Ning Yu<sup>1</sup>, James<sup>2</sup>*1. Shanghai Skin Disease Hospital**2. University of Michigan*

The TRAF3IP2 gene resides within one of at least 63 psoriasis susceptibility loci and encodes Act1, an adapter protein involved in IL-17 receptor and CD40 signaling pathways. TRAF3IP2 is distinctive (among 10% of candidate susceptibility genes) in that a strongly disease-associated variant encodes a missense SNP predicted to be functionally relevant (SNP rs33980500 C/T encoding Act1 pD10N). As assessed by flow cytometry, Act1 protein was expressed at the highest levels in monocytes, with lower levels in T-cells and B-cells. However, monocytes, T-cells and B-cells failed to respond to IL-17A stimulation of PBMC, as measured by flow cytometric determination of NF- $\kappa$ B phospho-p65. As an alternative stimulus, we treated PBMCs with trimerized recombinant human CD40L and assessed p65, p38 and Erk phosphorylation in CD19<sup>+</sup> B-cells as a function of D10N genotype. The increase of phosphorylated p65, p38, and Erk was well-correlated across individuals, and CD40L-induced phosphorylation of p65, p38, and Erk was significantly attenuated in B-cells from Act1 D10N homozygotes, compared to heterozygotes and nullizygotes. Our results indicate that the Act1 D10N variant is a relevant genetic determinant of CD40L responsiveness in human B-cells, with the risk allele being associated with lower B-cell responses in an acute signaling context.

PO03-098

**Long Noncoding RNA RP11-670E13.6 Activate DAG/PKC Signaling pathway by inhibiting Diacylglycerol kinase epsilon expression in UVB Damaged Human Dermal Fibroblasts**

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Solar ultraviolet (UV) radiation especially UVA and UVB induces cutaneous lesions such as erythema, sunburn, hyperplasia, immunosuppression, photoaging, and photocarcinogenesis. Long noncoding RNAs (lncRNA) are involved in various biological processes, and their role in UV radiation-induced skin photodamage is emerging. We initially found that lncRNA RP11-670E13.6 was upregulated in UVB-irradiated primary human dermal fibroblasts (HDFs). In this study, we aim to investigate how lncRNA RP11-670E13.6 contributes to UVB responses in HDFs by characterizing its molecular function. We used high-throughput RNA sequencing and mass spectrometry to compare expression profiles of mRNAs and proteins in RP11-670E13.6-depleted HDFs and controls. The results showed that the level of diacylglycerol kinase epsilon (DGKE) was increased and the protein kinase C (PKC) activity was inhibited in RP11-670E13.6-depleted HDFs. In addition, western blot analysis showed that knocking down of RP11-670E13.6 inhibited PI3K/Akt Signaling pathway, mitogen-activated protein kinase Signaling pathway, and NF- $\kappa$ B Signaling pathway activation in RP11-670E13.6-depleted HDFs compared with controls, which may be a result of PKC activity decreased. Furthermore, detecting by enzyme-linked immunosorbent assay and western blot analysis, we found that RP11-670E13.6 promoted the activation of nuclear erythroid 2-related factor, which potentiate the activity of anti-oxidant enzymes and lessen the intracellular reactive oxygen species accumulation. Taken together, our results have provided mechanistic evidence for the role of RP11-670E13.6 in modulating UVB-induced skin photodamage responses via activation of DAG/PKC Signaling pathway by down-regulating DGKE expression. These results also identify RP11-670E13.6 as a biomarker and putative therapeutic target in UVB damaged HDFs.

PO03-099

**Toll-like receptor 4 attenuates a murine model of atopic dermatitis through inhibition of langerin-positive DCs migration**

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**Objective** To investigate the immunoregulatory role of TLR4 in AD and illuminate the mechanism.

**Methods** Repeated application of a hapten, 2,4-dinitrochlorobenzene (DNCB), was performed on the skin of wild-type (WT) and TLR4 deficient (TLR4<sup>-/-</sup>) mice to induce AD-like symptoms. Pathology, inflammatory infiltration and quantity of langerin-positive DCs were assayed. And, etanercept was applied to explore the impact of TNF- $\alpha$  signaling on langerin-positive DCs migration in AD mice model.

**Results** TLR4<sup>-/-</sup> mice exhibited more severe AD symptoms than WT mice after DNCB challenge. TLR4 deficiency promotes production of serum IgE and IgG1, and enhances the infiltration of mast cells and eosinophils to skin lesions ( $P < 0.05$ ). TLR4<sup>-/-</sup> mice also displayed higher expression levels of inflammatory cytokines and stronger Th2 response than WT counterparts. Furthermore, we demonstrated that the migration of langerin<sup>+</sup> DCs into draining lymph nodes (dLNs) was enhanced in TLR4<sup>-/-</sup> mice upon DNCB challenge ( $P < 0.05$ ). After application of TNF- $\alpha$  inhibition, the percentage of langerin<sup>+</sup> DCs in dLNs was strongly decreased, and showed no significant difference between WT and TLR4<sup>-/-</sup> mice. Blockade of TNF- $\alpha$  markedly reduction of the DNCB-induced AD symptoms in both WT and TLR4<sup>-/-</sup> mice, as evidence by skin pathology, Th2 related cytokines and serum IgE level ( $P < 0.05$ ).

**Conclusion** These results determined that TLR4 modulated TNF- $\alpha$  profiles that have impact on langerin<sup>+</sup> DCs migration, which plays a crucial role in the pathogenesis of the hapten-induced AD model.

PO03-100

**Diclofenac potentiates vemurafenib-induced apoptosis in human melanoma cells**

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**Objective** BRAF inhibitor is one of the most effective drug towards melanoma, however its clinical application is largely limited by drug resistance. This research aims at finding a safe, effective as well as cheap sensitizer of BRAF inhibitor from the conventional drugs and explore the mechanism.

**Methods** 1. Set up melanoma cell lines SK-MEL-5R and A375R with acquired resistance to BRAF inhibitors and apply diclofenac and PLX4032 afterwards. Cell toxicity induced by the combination of the two drugs is identified by MTT; cell proliferation is determined by crystal violet stains; cell apoptosis is investigated by flow cytometry; the expression level of cell apoptosis related proteins such as PARP, Caspase 3 and Survivin is measured by Western Blot. 2. Investigate whether diclofenac increases intracellular ROS level and induces mitochondrial apoptosis: DCFH-DA to assay the intracellular ROS level; JC-1 stain to study the mitochondrial transmembrane potential; Western Blot to measure the expression level of Bcl-2, Bax, Caspase 9 and cytochrome C.

**Results** 1. Diclofenac significantly magnifies the cell toxicity induced by PLX4032 on melanoma cell lines SK-MEL-5R and A375R. It promotes the cell apoptosis caused by PLX4032, enhances the activation of Caspase 3 and PARP and inhibits the expression of Survivin. 2. Diclofenac increases the intracellular level of ROS in SK-MEL-5R and A375 melanoma cell lines and promotes the mitochondrial apoptosis of these drug-resistant cell lines.

**Conclusion** Diclofenac can significantly increase the sensitivity of resistant melanoma to BRAF inhibitors. And it is mediated by increased ROS level and the mitochondrial apoptosis activation.

PO03-101

**LncRNA UCA1 inhibits the melanogenesis by inhibiting cAMP/CREB signaling pathway.**

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**Objective** LncRNA UCA1 was first found in bladder cancer and involved in the regulation of biological behaviors. At present, studies have shown that UCA1 can regulate the proliferation and migration of melanoma cells. However, few studies have been reported the mechanism of LncRNA UCA1 in pigmented disease. This study aims to explore the role and mechanism of LncRNA UCA1 in melanogenesis.

**Methods** Melanocyte (MC), PIG1 cell and human melanoma cell line (SK-MEL-28, A375), sodium hydroxide were used to detect the content of melanin. qRT-PCR was used to detect the expression of UCA1. Collected nevus tissues of different color from patients, the expression of UCA1 was detected and the relationship between the expression of UCA1 and the content of melanin was explored. Overexpression and knockout of UCA1 in PIG1 cells, and the levels of the genes related to melanin were detected by qRT-PCR and Western Blot. We used RNA-seq to analyze differentially expressed genes between NC cells and UCA1 overexpressed cells. qRT-PCR and Western Blot were used to verify the candidate target molecules.

**Results** In MC, PIG1, SK-MEL-28 and A375 cells, the expression of UCA1 was negatively correlated with the content of melanin. The expression level of UCA1 of nevus tissues were also negatively correlated with the content of melanin. After upregulating UCA1 expression in PIG1, the level of genes related to melanogenesis such as TYR, TYRP1, TYRP2, Rab27A, FSCN1 and MYO5A was obviously reduced. And after downregulating UCA1 expression in PIG1, the level of TYR, TYRP1, TYRP2, Rab27A, FSCN1 and MYO5A significantly upregulated. RNA-seq analysis showed that MiTF, one of the most important transcription factor of melanogenesis, was reduced in UCA1 overexpressed PIG1 cells, and the cAMP/CREB signaling pathway was also inhibited. Furthermore, we demonstrated that the expression of MiTF, CREB, P-CREB and cAMP was downregulated in UCA1 overexpressed PIG1 cells. On the contrary, the expression of MiTF, CREB, P-CREB and cAMP was upregulated in UCA1 downexpressed PIG1

cells.

**Conclusion** UCA1 may inhibit the melanogenesis by inhibiting cAMP/CREB signaling pathway.

PO03-102

### **Dendrobium candidum polysaccharide stimulates melanocytes melanogenesis by paracrine effect of keratinocytes and activate cAMP/PKA and MAPK signaling pathway**

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**Objective** Previously we found that *Dendrobium candidum* polysaccharide (DCP), a Chinese medicine, with anti-oxidation and immunomodulatory properties. However, effects of DCP on melanocytes melanogenesis are unclear. Keratinocytes secretory paracrine mediators are important for melanocytes melanogenesis. Here we aimed to investigate the efficacy and mechanism of DCP in melanocytes melanogenesis through paracrine effect.

**Methods** Cell viability of melanocytes (PIG1), keratinocytes (HaCaT) exposed to DCP was measured by MTT assay. Then, treating HaCaT cells with DCP, major melanogenic paracrine mediators (POMC, FGF2, ET-1, PTGS2) were evaluated by qRT-PCR. After co-culturing supernatant of DCP treated HaCaT with PIG1, melanogenesis-associated genes expressions in the PIG1 were measured by qRT-PCR and Western Blot. cAMP level detected by bioluminescence. Furthermore, CREB, ERK, JNK and p38 phosphorylation levels were detected.

**Results** We found that DCP had no cytotoxicity to skin cells, and could stimulate major melanogenic paracrine mediators expressions in HaCaT. Moreover, after cell supernatant of DCP treated-HaCaT were co-cultured with PIG1 cells, the levels of MITF, TYR, TYRP1, DCT, Rab27A and MYO5A were upregulated in PIG1 cells, and ERK, JNK and p38 phosphorylation were also upregulated. Besides, DCP also increased cAMP level in PIG1 cell.

**Conclusion** DCP stimulates melanocytes melanogenesis by paracrine effect of keratinocytes and activate cAMP/PKA and MAPK signaling pathway.

PO03-103

### **Establishment of SPINK6 knockout mouse model**

Rong-Bing Zheng, Yuan-Yuan Wu, Jia-Yi Shen, Dan Li, Xiao-Xiao Chen, Fang-Yuan Bao, Wei-Jun Xia, Zhi-Hong Wu

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**Objective** The proteolytic regulation of the desquamation process by kallikrein-related peptidases (KLKs) is crucial for epidermal barrier function. Its unbalance might cause severe skin diseases. SPINK6 is an important inhibitor of KLK5 and KLK7 while its biological role in skin function remains unclear. This study is to understand the biological function of SPINK6 as well as its role in the development of skin diseases by establishing SPINK6 knockout mouse model.

**Method** According to the gene structure of SPINK6, the exon 4 was targeted to be knocked out. The sgRNAs were designed in the non conservative regions intron 3-4 and intron 4-5. To obtain F0 chimeric mice and reproducing stable heredity F1 mice, the F0 microinjection fertilized eggs were implanted into pseudopregnant mice uterus. PCR and Southern blot were used to screen genetically targeted mice that have been correctly reorganized.

**Result** Results from PCR and sequencing showed that the mice numbered 3, 4, 5, 8, 9, 12, 13, 14, 15, 17, 18 and 19 were positive mice. The Southern blot results further showed that nine mice (3, 4, 5, 8, 9, 12, 13, 14, 15) were correctly reorganized without random insertion.

**Conclusion** The F1 generation of SPINK6 KO mice was successfully established. The generation of F2 homozygote mice will be further tested.

PO03-104

**Establishing filaggrin-2 gene knockout mice**

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**Objective** Skin barrier homeostasis is essential for human survival. Impaired epidermal barrier function often leads to serious skin diseases such as atopic dermatitis (AD). Recently loss-of-function mutations in the filaggrin (FLG) gene, encoding an epidermal scaffold protein, were uncovered to be major predisposing factors for AD. Meanwhile, FLG mutations might also not lead to AD. To understand the underlying mechanisms, this study is to establish the gene knockout mouse model of the FLG2, one of the FLG sister genes. This model might help understand the biological functions of FLG2 as well as its role in the occurrence and development of AD.

**Methods** The fluorescent protein gene (Tdtomato) with a terminator T (WPRE) was inserted into the front of the exon 3 by the Cas9/CRISPR technique. To obtain the F0 generation allophenic mice, the F0 generation microinjected oosperm were implanted into surrogate mice uterus. The F1 Stable genetic generation mice were obtained by mating and breeding.

**Results** The PCR results showed that these mice including No.1, 6, 14, 16, 17, 20, 21, 22, 23, 24 and 25 of the F1 generation heterozygote were knockout positive mice. Further southern blot analysis showed that four of them (No.6, 22, 24 and 25) were correct recombined without random insertion. The PCR results in Fig.d showed the five KO mice including No.16, 17, 20, 21, 22 of the F2 generation were homozygote.

**Conclusion** Filaggrin-2 gene knockout mice were successfully established by mating homogenization and targeting.

PO03-106

**TUG1 negatively regulates melanogenesis**

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**Objective** Hyperpigmented dermatosis is very common in clinical practice. Its etiology is complex and treatment is extremely difficult. The melanin production in melanocytes directly affects the pigmentation process, and recent studies have found that long non-coding RNA (lncRNA) is closely related to the formation of melanin. TUG1 is one of the important members of the lncRNAs family and has been reported to participate in the regulation of proliferation and metastasis of melanoma cells. However, the effect of TUG1 on melanocyte has not been reported in literature. This study sought to explore the effect of TUG1 on the melanogenesis of melanocytes.

**Methods** (1) Detection of TUG1 expression in immortalized melanocytes (PIG1), Hacat cells and fibroblasts by PCR. (2) After UVB irradiation of PIG1, the expression of TUG1 was detected by PCR. (3) The expression of TUG1 in PIG1 was inhibited by lentivirus infection, knockdown efficiency was verified by PCR, and the expression of melanogenesis-related genes was detected by WB and RT-PCR.

**Results** (1) TUG1 was expressed in PIG1, Hacat cells and fibroblasts. (2) The expression of TUG1 is increased after UVB irradiation of PIG1 cells. (3) The melanogenesis-related genes such as MITF, TYR, and TYP2 in PIG1 cells are up-regulated after knockdown of TUG1.

**Conclusion** TUG1 may negatively regulate the melanogenesis of melanocytes.

PO03-107

**Traditional Chinese medicine SK promotes wound healing by up regulation of TGF- $\beta$ 1 expression**Yufang Ding<sup>1</sup>, Jinhua Huang<sup>1</sup>, Shuanghai Hu<sup>1</sup>, Ling Jiang<sup>1</sup>, Aiyuan Guo<sup>1</sup>, Chuhan Fu<sup>1</sup>, Shiyao Pei<sup>1</sup>, Yujie Ouyang<sup>1</sup>, Xiaojiao Zhao<sup>1</sup>, Li Lei<sup>2</sup>, Jing Chen<sup>1</sup>, Qinghai Zeng<sup>1</sup>

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**Objective** To study the therapeutic effect of Traditional Chinese medicine SK (SK is named by our team) on wound healing and its mechanism, compare the efficacy of the traditional Chinese medicine and Western Medicine in the management of injury, and develop a cheap convenient and effective healing of Chinese medicinal materials.

**Methods** After treating keratinocytes (HaCat) with different concentrations of traditional Chinese medicine (SK), the cell viability was measured by MTT assay and the migration of cells was observed by Transwell and scratch test, and the expression of TGF- $\beta$ 1 was detected by quantitative real-time polymerase chain reaction (qRT-PCR) and enzyme linked immunosorbent assay (ELISA). A wound regeneration model was constructed with zebrafish caudal fin, and the regeneration length of caudal fin was observed after treatment with different concentrations of traditional Chinese medicine (SK).

**Results** 1. Traditional Chinese medicine (SK) can promote the proliferation and migration of keratinocytes; 2. Traditional Chinese medicine (SK) can promote the expression of TGF- $\beta$ 1 in keratinocytes; 3. Being compared with the control group, the Traditional Chinese medicine (SK) can significantly promote the regeneration of the caudal fin of zebra fish.

**Conclusion** Traditional Chinese medicine (SK) has significant effect on promoting wound healing, and its mechanism may be related to the promotion of TGF- $\beta$ 1 expression

PO03-108

**Therapeutic role of Sphingosine Kinase 1 (sphk1) inhibitor in the passive cutaneous anaphylaxis (PCA) model**Si Yan<sup>1,2</sup>, Wang-Qing Chen<sup>1,2</sup>, Ni Tang<sup>1,2</sup>, Man-Yun Mao<sup>1,2</sup>, Jie Li<sup>1,2</sup>, Xiang Chen<sup>1,2</sup>

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**Aim** Sphingosine Kinase 1 (sphk1) is an enzyme that generates sphingosine-1-phosphate (S1P). S1P participates in the pathogenesis of allergic disease. In this study, we investigated the therapeutic role of S1P in mice allergic skin diseases.

**Method** In order to investigate the S1P anti-allergic role, a passive cutaneous anaphylaxis (PCA) method was used to induce the allergic reactions in mice. After the subcutaneous injection into the ear margin with anti-DNP-IgE (25 ng) antibody for 24h, we peritoneally injected sphk1 inhibitor PF-543 (20 ug) for 30 min and then DNP-has (100 ug) stimulation for 30min to detect the phenotype changes through the Evans blue and toluidine blue stain. Tissue sphk1 Immunohistochemistry (IHC) was used to detect sphk1 expression level. The immune cells such as CD4+CD25+ T cells in the mice blood were evaluated via flow cytometry. And tissue cytokines changes were assessed through RT-PCR.

**Result** In the PCA model, the evans blue sign and sphk1 expression in the mice ear margin treated by PF-543 alleviated significantly, and the inflammatory cells such as CD4+CD25+ T cells also decreased when compared with those in mice ear margin treated with saline. The same trend was seen in the degranulated mast cells and cytokines such as IL-6 and TNF- $\alpha$ . And blood CD4+CD25+ T cells showed a decrease in PF-543 treated mice compared with saline treated mice (P =0.0196).

**Conclusion** In the PCA model, sphk1 inhibitor could alleviate the mice phenotype and attenuate the immune cells and cytokines' production. Therefore, sphk1 inhibitor may serve as a therapeutic role in allergic reactions.

PO03-109

**Network integration of parallel metabolic and transcriptional data reveals metabolic modules in azithromycin induced macrophage M2 polarization**

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**Objective** To reveal the mechanism in azithromycin induced macrophage M2 polarization by parallel metabolic and transcriptional data analysis and to call for to prevent antibiotics abuse in fungal diseases.

**Methods** Using in-vitro cryptococcus-macrophages infection assay and cryptococcus inhalational mouse model to demonstrate the dampening effect of AZM in the immunity against cryptococcus pneumonia. LC-MS and data analysis for metabolomics are used for locating the differential central module in metabolic pathways. To construct the network for integrated analysis of metabolomic and RNA-seq data by downloading KEGG databases.

**Results** AZM treated macrophages show M2 polarization and decreased ability in phagocytosis and NO/ROS generating. Fungal burden of AZM treated mice is higher than the PBS group and the survival rate of AZM treated mice is lower than the PBS group. The glycolysis rate of AZM treated macrophages is lower.

**Conclusions** AZM could induce M2 polarization, restrain glycolysis metabolic pathways in macrophages to disturb the energy generating which is essential for killing the lethal fungi. The clinicians should prevent antibiotics abuse especially on systematic fungal diseases.

*PO04 Benign and Malignant Tumors*

PO04-006

**A case of HMB-45 and Melan-A negative melanoma**

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Malignant melanoma is a fatal skin cancer, which accounts for 4% of all skin cancer but is responsible for 80% of deaths from skin cancers. It can be usually confirmed by skin biopsy with immunostaining including HMB-45 and Melan-A. A 79-year-old woman presented with 2 cm sized ill-defined bleeding oozing plaque on right 2nd toe. Duration of the lesion was 10 months. Skin biopsy specimen was taken by punch biopsy. Specimen showed cord like basophilic tumor cells extending from upper dermis to deep dermis. Tumor cells showed mitotic figure, abundant cytoplasm and pleomorphic nucleus. Unexpectedly, the tumor cells did not stain for HMB-45 and Melan-A. However, S-100 protein, which has known as the most sensitive marker for tumors of melanocytic origin, showed positive result for this case. Clinically, she had the history of a preceding long standing pigmented lesion on non-sun exposure area with irregular borders before visit to hospital. The patient was finally diagnosed as malignant melanoma based on immunohistochemical findings and clinical features. There was no evidence of metastasis in PET-CT and the laboratory study showed normal findings. She was referred to plastic surgeon for wide excision and full thickness skin graft. We emphasized that the traditional melanocyte markers are not always positive for melanoma and additional stainings including S-100 protein or Microphthalmia-associated transcription factor (MITF) may be helpful. Herein we reported a rare case of HMB-45 and Melan-A negative melanoma.

PO04-007

**A case of trichoblastoma with plasma cell infiltration**

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Trichoblastoma is a rare benign follicular neoplasm, presenting as solitary, well-defined, dark colored nodule on the head or neck. It can arise within a nevus sebaceous and can also coexist with basal cell carcinoma. Meanwhile, cutaneous plasma cell infiltration can be seen in various disorders, including amyloidosis, lupus erythematosus, plasma cell neoplasm and infectious diseases such as syphilis and deep fungal infections. It can also occur with lymph node disease and polyclonal hypergammaglobulinemia. A 53-year-old woman presented with scaly erythematous plaque on her left cheek. Duration of the lesion was one year. Skin biopsy specimens were taken by punch biopsy. Smooth-bordered collections of large basaloid proliferation and fibrotic stroma were seen in entire dermis. Interestingly, mixed inflammatory cell infiltrations were seen in upper dermis and they were mainly plasma cells. There was no evidence of other organ involvement and infection in laboratory tests. Preceding unnoticeable infection might independently leave a plasma cell infiltration regardless of trichoblastoma. However, we could not exclude the possibility of association between trichoblastoma and plasma cell infiltration. She was diagnosed as trichoblastoma with plasma cell infiltration based on histological findings and was treated with topical and oral steroid. In the literature review, there were some cases of squamous cell carcinoma with plasma cell infiltration but there was no reported study about the association between plasma cell infiltration and adnexal neoplasm except syringocystadenoma papilliferum. Herein we reported a peculiar case of trichoblastoma with plasma cell infiltration.

PO04-008

**A case of adenoid type basal cell carcinoma on philtrum**

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Less common subtypes of basal cell carcinoma (BCC), namely, widely regarded as the most common malignant skin tumor, are usually seen in the head and neck region, especially on the nose and eyelids. It constitutes about 65% of all epithelial tumors, and there exists several histological variants. Rare histological subtypes of BCC include pigmented, superficial, morpheaform, and adenoid. Adenoid BCC is considered a low-grade malignancy compared to other subtypes. One recent study estimated its overall incidence at 1.3%. Adenoid BCC exhibits no site predilection and has been identified at various regions including forehead, inner canthus of eye, chin, trunk and extremities. A 78-year-old woman presented with over 7-year history of slow-growing, 0.8 cm sized pigmented, ulcerative, and eroded plaque with a rolled-up edge on philtrum. She had no past or family history of skin neoplasm. She complained of no other symptoms except a recent hemorrhagic change. Skin biopsy specimen revealed multiple cystic structures with strands of basaloid cells arranged in a lace-like pattern and stroma of a mucoid substance. On immunohistochemical staining, SMA, CK19, C-kit were all negative while CD 10, CK 5/6 and p53 were positive. Ki-67 was 70%. She underwent wide excision of the tumor followed by skin-fat composite graft from the preauricular area. The final diagnosis was BCC of adenoid type on histological ground. Herein we reported a rare case of adenoid BCC.

PO04-009

**A case of extramammary Paget's disease restored with modified keystone flap**

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Extramammary paget's disease (EMPD) is a rare, slow-growing intraepithelial malignancy that mainly involves the

genital region. The excision area required to obtain negative margin is often much greater than the visible area of the disease. Reconstruction of large penoscrotal soft-tissue defects after wide local excision remains a challenge to the surgeon. A 58-year-old man presented with asymptomatic several various sized erythematous to hyperpigmented plaques on suprapubic area and gradually spreading to penile root and scrotum for a year. A skin biopsy revealed that the hyperkeratosis, parakeratosis, acanthosis and paget's cells were randomly dispersed throughout the epidermis. There was no abnormality on abdominal-pelvis CT to confirm the presence of internal malignancy. The clinical, histological and imaging features of our case was compatible with primary extramammary Paget's disease. One month later, the patient underwent Mohs micrographic surgery (MMS), which was completed through a total 7 stages. There were primary closure, local flap and skin graft to repair the penoscrotal area defect. Because there were many branches of blood vessels around the penoscrotal area, we used the flap to repair the defect. To reduce the tension at the site of excision, "type D" modified keystone flap was used. Until now, the wound is recovering without any complications such as pain, scar contracture and erectile dysfunction. Because EMPD is more extensive than it is with the naked eye, the use of the following flap may be helpful, since the size of defect may increase during MMS.

PO04-021

### **Epidermodysplasia verruciformis associated multiple sweat gland tumors and squamous cell carcinomas**

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Epidermodysplasia verruciformis (EV) is a rare autosomal-recessive genodermatosis characterized by high susceptibility to human papillomavirus (HPV). It is well-known that EV patients have increased risk of cutaneous epithelial malignancies, such as actinic keratosis (AK) and squamous cell carcinoma (SCC). Sweat apparatus tumors were rarely reported in a patient with EV. A 43-year-old woman presented with multiple erythematous plaques and tumors on scalp. The patient had history of facial AK and SCC of scalp about 9 years ago. She also had generalized brownish flat papular lesions since childhood and the similar generalized verruca plana-like lesions were observed in two sisters of patient. Histologically, the papular lesions presented stereotypical enlarged keratinocytes with a grey-blue cytoplasm and pyknotic nucleus in the upper epidermis and the *in situ* hybridization revealed presence of various types of HPV. Results of histopathologic examination from three scalp lesions were consistent with microcystic adnexal carcinoma, eccrine poroma, and eccrine porocarcinoma, respectively. The other two scalp biopsy specimens showed features of SCCs. The patient was finally diagnosed with EV and associated multiple sweat gland tumors and SCC. To the best of our knowledge, only four cases of sweat gland tumors arising in EV patients have been reported in dermatologic literature. Herein, we presented a rare case of EV associated with heterogeneous, multiple skin cancers originating from squamous epithelium and sweat glands, which have rarely been reported in dermatologic literatures.

PO04-022

### **Primitive non-neural granular cell tumor: S-100-negative granular cell tumor**

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Granular cell tumors (GCTs) are rare benign neoplasms which have distinctive eosinophilic granules in their cytoplasm. Generally, the GCTs are considered as tumors that originate from neural crest because the granular cells are typically strongly positive to S-100 stain. Exceptionally, a rare variant of GCTs, called primitive non-neural GCT, is not reactive with S-100 protein. Based on those immunohistologic findings, primitive non-neural GCTs are regarded to derive from undifferentiated mesenchymal stem cells. A 20-year-old woman presented with a solitary painless brownish nodule. The lesion appeared on her right arm 3 months ago without any symptom. At histopathologic examination, a poorly demarcated tumor mass was located throughout the entire dermis. The tumor

cells were large and polygonal in shape with a number of eosinophilic small granules in the cytoplasm. The granules were reactive with periodic acid-Schiff stains (PAS) and resistant to diastase digestion. They were not stained with S-100 protein and neuron-specific enolase. From these findings, the diagnosis of primitive non-neural GCT was made. The nodule was removed with a complete excision and there was no recurrence at current 5-month follow-up. Herein, we reported a rare case of primitive non-neural GCTs with review of literatures.

PO04-023

### **Acantholytic mammary Paget's disease with ductal carcinoma *in situ***

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Mammary Paget's disease (PD) is a rare form of intra-epithelial adenocarcinoma of the breast. Many histopathologic variants of PD make it difficult to differentiate from other diseases such as pagetoid Bowen's disease and pagetoid melanoma. Until now, few cases of mammary PD with acantholytic feature have been reported. A 70-year-old woman presented with an erythematous plaque with erosion and crust around the right nipple for 2 years. Histopathologic examination of skin showed distinct intra-epidermal blisters and acantholytic pagetoid cells showing large, clear cytoplasm. In an immunohistochemical study, these cells were positive for CK7 and CAM 5.2 and negative for CK20. There was no significant mass in mammography and ultrasonography. Whole body position emission tomography-computed tomography showed no distant metastasis. The patient underwent modified radical mastectomy with axillary lymph node dissection and there was no regional metastasis. Paget cells were also found in the breast ductal epithelium, but no invasive carcinoma was observed. From these findings, she was diagnosed with PD with ductal carcinoma *in situ* presenting acantholytic feature. Although the pathophysiology of acantholysis in the PD is not fully understood, it is presumed that the Paget cells may cause epidermal changes and impaired cellular adhesions leading to acantholysis. Herein, we presented a rare case of acantholytic PD.

PO04-024

### **Clinical study of basal cell carcinoma developed in young adults**

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Basal cell carcinoma (BCC) is the most common malignant cutaneous tumor, and the peak of the age-frequency distribution is the 7<sup>th</sup> decade in BCC. Therefore, patients who develop BCC at a younger age are more likely to have predisposing characteristics, such as a history of trauma and sunburn. The purpose of this study was to evaluate the clinical and histopathological features of BCC of the young adults in Korea. We reviewed all cases of patients diagnosed with BCC less than 50 years of age at Kyung Hee University Hospital at Gang-dong in Seoul, Korea between 2006 and 2017. The study included 11 males and 10 females, aged from 28 years to 49 years. Among those 16 cases that occurred in the head and neck, the most common clinical subtype was the ulcerative type (71%). Also, the most common histological subtype was the infiltrative type (33%). Five of 21 patients had the history of trauma. In all cases, no family history was noted. Local wide excisions were performed in all 21 patients, and none of those showed signs of recurrences. Contrary to the general belief that the prevalence of BCC in young adults is low, BCC occurs rather frequently among young adults in this study. These patients tended to have a higher prevalence of risk factors and the higher occurrences of the infiltrative type. So, if a young patient is diagnosed with BCC, an active treatment such as a surgery and continuous follow-ups are of necessities.

PO04-025

**Molluscum contagiosum occurring in an epidermal cyst developed on frontal hairline**

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Molluscum contagiosum (MC) is a common self-limiting skin infection due to the molluscum contagiosum virus (MCV). MCV infects epidermal keratinocytes and leads to the formation of pear-shaped epithelial downgrowing lobules that contain the characteristic molluscum bodies. MCV may rarely infect keratinocytes of the hair follicle and a few cases of MC occurring in an epidermal cyst (EC) reported in the literature. An 8-year old girl presented with asymptomatic, solitary 1 × 1 cm sized, skin colored, firm, subcutaneous nodules on the frontal hairline for several months. The patient had no known history or evidence at presentation of MCV lesions on the skin surface. On histologic examination, there were multiloculated cysts containing laminated horny material. The wall of the cyst contained all layers of the epidermis, including a granular layer. There were abundant eosinophilic inclusion bodies inside the cyst, dispersed among the keratinous contents, consistent with MCV cytopathic changes. She was diagnosed with MC occurring in an EC. The coexistence of MCV infection in an EC is an unusual presentation. The exact pathomechanism is not well known, but there are two hypotheses. One is coinoculation of MCV at the time of development of the EC, and the other is the invasion of MCV into a preexisting EC. Because there were not only changes of MCV infection through the entire lesion but also multiloculated changes with close approximation of the adjacent cystic components, it was considered that MC occurring in an EC was developed by the former pathomechanism.

PO04-029

**CD34 stromal expression is inversely proportional to smooth muscle actin expression and extent of morphea**Ji Su Lee<sup>1,2,3</sup>, Hyun-sun Park<sup>1,2,3</sup>, Hyun-Sun Yoon<sup>1,2,3</sup>, Jin Ho Chung<sup>2,3,4</sup>, Soyun Cho<sup>1,2,3,4</sup>

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**Background** Fibrosis is thought to be the main pathophysiology of scleroderma, and myofibroblasts play the main role in abnormal fibrotic pathologies. Altered distribution of dermal dendritic cells (DDCs) and vascular abnormalities has been reported to relate to the pathogenesis of scleroderma. This study aimed to investigate fibrotic pathogenesis of morphea (localized scleroderma) by demonstrating the relative expression and distribution of DDCs and myofibroblasts; we performed immunohistochemical stains using several relevant antibodies.

**Methods** Skin lesions of 50 patients with morphea and the age-, sex- and site-matched normal skin of 50 subjects were evaluated for the following antibodies: CD34, factor XIIIa (FXIIIa), smooth muscle actin (SMA), CD31, and vascular cell adhesion molecule-1 (VCAM-1).

**Results** CD34 stromal stain was significantly lower in patients than controls ( $P=0.000$ ), while FXIIIa, SMA and VCAM-1 stains were significantly higher in patients than controls ( $P=0.043$ ,  $P=0.000$  and  $P=0.027$ , respectively). In subtype analysis within patients, CD34 stromal stain showed decreasing trends with increasing disease extent and increasing fibrosis, respectively. CD34 stromal stain showed an inverse correlation and mutually exclusive spatial expression pattern with SMA stain ( $r=-0.286$ ,  $P=0.044$ ). The inverse relationship was maintained in each dermal layer analysis, upper and lower dermis ( $r=-0.397$ ,  $P=0.004$  and  $r=-0.281$ ,  $P=0.048$ , respectively).

**Conclusions** Mutually exclusive staining patterns of CD34 stromal and SMA stains suggest a phenotypic change of CD34+ DDCs into SMA+ myofibroblasts with increasing disease extent and fibrosis in morphea. Degree of loss of CD34+ DDCs can be a useful marker in predicting the extent and severity of morphea.

PO04-030

**Angioimmunoblastic T cell lymphoma presenting as Henoch-Schonlein purpura**

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A 78-year-old man presented with tender, multiple erythematous purpura on the trunk and extremities. He had abdominal pain, diarrhea, arthralgia and edema of both lower legs for two months. The patient had a history of chronic obstructive pulmonary disease, hypertension and prostate cancer operation. Laboratory findings showed pancytopenia, elevated blood urea nitrogen and creatinine. Urinalysis showed hematuria and proteinuria. A punch biopsy specimen of left arm revealed leukocytoclastic vasculitis without immunoglobulin and complement deposits. Lymph node biopsy showed small clusters of neoplastic cells around follicles with CD3, CD4, and CD10 positivity. Bone marrow aspiration showed increased plasma cells with infiltration of CD3, CD5, CD10-positive atypical lymphocytes. Tumor involvement of spleen and ascites, pleural effusion were shown in positron emission tomography-computed tomography image. After one cycle of cyclophosphamide-hydroxydaunorubicin-ondansetron-prednisone (CHOP) chemotherapy, patient died due to acute respiratory distress syndrome. Angioimmunoblastic T cell lymphoma (AITL) accounts for approximately 15–20% of peripheral T-cell lymphomas. The most common cutaneous presentation of AITL consists of macules and papules, while Henoch-Schonlein purpura (HSP) is a rare clinical manifestation. HSP can behave like a paraneoplastic syndrome in malignancy including lymphoma through several mechanisms. Herein, we reported a rare case of AITL presenting as HSP.

PO04-032

**Two cases of lymphomatoid papulosis type D**

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A 29-year-old woman presented with 3-year history of erythematous papules on the right shoulder and left arm. The patient had no history of underlying disease. A 36-year-old woman presented with several erythematous to brownish macules and papules on the trunk and extremities. The patients had a history of thyroid cancer. Skin biopsy taken from these two patients showed wedge-shaped infiltration of atypical lymphocytes admixed with histiocytes, neutrophils and extravasated red blood cells, along with coexpression of CD3, CD8 and CD30 in T lymphocytes associated with prominent epidermotropism. Based on these clinical and histological findings, two patients were diagnosed with lymphomatoid papulosis (LyP) type D. During 4-year follow-up period, patients reported spontaneous occurrence and disappearance of erythematous papules. LyP subtype D is characterized by medium to large atypical cells with marked epidermotropism and coexpression of CD8 and CD30 in a scant inflammatory background with no known risk of progression to lymphoma. It is a rare subtype of LyP, which has only one reported case in Korea. Herein, we reported two rare cases of lymphomatoid papulosis type D.

PO04-036

**Two cases of HPV-positive Bowen's disease of nail unit**

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Bowen's disease (BD) is uncommon in the nail unit and periungual areas. BD of the nail unit has multiple clinical presentations, which often makes diagnosis challenging. It can present as hyperkeratotic, papillomatous, warty proliferations, erosions, scaling of the nail fold, or ulceration of the lateral nail groove, sometimes with granulation-like tissue underneath. The most reported BD of nail unit cases have been associated with human papillomavirus (HPV) infection, predominantly HPV type 16. Other HPV types such as 34, 35, 52, 56, and 73 also have been reported. To our knowledge, there is only one case of BD of nail unit associated HPV type 52. Herein, we reported two cases of BD of nail unit associated HPV type 52 and 56, respectively. A 62-year-old man presented with a 3-months history of a hyperkeratotic plaque on the lateral aspect of right second finger nail plate. A 42-year-old man presented with a 4-months history of a brownish hyperkeratotic plaque on the lateral aspect of right third finger. Skin biopsies taken from nail beds of these two patients commonly showed a marked acanthotic epidermis with full-thickness disorganization with atypical keratinocytes. Additionally, HPV types 52 and 56 were detected in the former patient and the latter patient by DNA microarray test, respectively. Based on these clinicopathological findings, these cases were diagnosed as BD. Wide excision was performed in both cases and the patients are under observation without recurrence.

PO04-037

**A case of extraskeletal chondroma developed on the neck, an unusual location**

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Extraskeletal chondroma is a rare benign cartilaginous tumor of soft tissue. The tumor occurs primarily in the soft tissues of the hands and feet, usually with no connection to the underlying bone. The most common site is the fingers, where more than 80% are found, followed by the hands, toes, feet, and trunk. Extraskeletal chondromas in the head and neck are rare and have been reported to occur primarily in the tongue. To our knowledge, only two cases of extraskeletal chondroma developed on the neck have been reported in the literatures. Herein we reported a rare case of extraskeletal chondroma developed on the neck. A 41-year-old female presented with an asymptomatic, 2 cm-sized, skin-colored palpable nodule on the neck since birth. There was no history of trauma and the nodule had been growing slowly. Excisional biopsy was performed and the histopathological examination showed well-demarcated, encapsulated round nodules composed of mature hyaline cartilage. There were nests of benign-appearing cells in lacunae of mature hyaline cartilage. Chondrocytes in lacunae showed lesional hypercellularity, with binucleated nuclei. There was no cytologic atypia. These findings were consistent with extraskeletal chondroma. The patient is under observation without recurrence.

PO04-060

**A case of cutaneous interdigitating dendritic cell sarcoma**

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Dendritic cells are non-lymphoid, non-phagocytic, immune accessory cells that are essential for antigen presentation, and they are present in both lymphoid and non-lymphoid organs. Four types of dendritic cells are present in the lymph nodes: follicular, interdigitating, langerhans and histiocytic/fibroblastic cells. Interdigitating dendritic cell sarcoma (IDCS) is an extremely rare neoplasm that mainly occurs in lymph nodes and primary cutaneous IDCS, with no nodal or other organ involvement is even rarer, with less than 10 cases reported to date. We reported a case of a 62-year-old woman who presented with an easily-bleeding pinkish papule clinically mimicking pyogenic granuloma on her left mid back. It was found 3 to 4 months ago. The lesion was a 0.6 cm × 0.6 cm sized dome-shaped, pink to reddish, partially eroded and crusted papule, 2 to 3 mm elevated from the ground. H&E stained specimen revealed a histological pattern characterized by a dense nest of epithelioid polygonal cells infiltrating throughout the dermis. Tumor cell nest was covered by flattened epidermis and surrounded by acanthotic collarette. Tumor cells had large oval nuclei with prominent nucleoli and broad pinkish cytoplasm. Immunohistochemical studies showed that the tumor cells were positive for S-100 and CD68, but negative for CD1a, CD23, CD 138, C-kit, HMB45, and Melan-A. Though there may be still other entities to be considered for confirmatory diagnosis, with above histopathological findings, a provisional diagnosis of dendritic cell sarcoma was favored as the most feasible entity.

PO04-062

**Solitary juvenile xanthogranuloma: Clinical and dermoscopic findings**

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**Background** Juvenile xanthogranuloma (JXG) is a common non-Langerhans cell histiocytose, most often affecting infants and children. JXG can have two main clinical forms: popular form as multiple papules in infant and children, and nodular form as one or a few lesion in adult. Most data about JXG have been commonly focused on popular form, and clinical data about nodular form or solitary JXG are very limited. This study aimed to investigate the clinical and dermoscopic findings of solitary JXG.

**Methods** We retrospectively reviewed medical records, clinical and dermoscopic photos, and histopathologic slides of 51 patients diagnosed with solitary JXG by skin biopsy in Pusan National University Hospital (Busan and Yangsan) over the 12 year period (2005–2017).

**Results** Among 93 patients with JXG, 51 (54.8%) had a solitary nodule. Of 51 patients, 40 (78.4%) were child (range in 0.25–6 years) and 11 (21.6%) were adult (range in 22–55 years). The mean diameter of child JXG (6.3 mm) was bigger than that of adult JXG (3.7 mm,  $P < 0.0001$ ). The predominant involved anatomical site of child JXG was scalp (35%) and adult JXG most frequently involved face (36.4%). Setting sun appearance was the most common dermoscopic feature and xanthomatous cell with foamy xanthomatous cytoplasm was the most common histopathologic feature.

**Conclusion** A majority of reported JXG patients were Caucasians and there has been no study focusing on solitary JXG. The result of this study could be helpful for dermatologist when encountering child and adult patients with solitary JXG.

PO04-063

**Large infantile hemangioma on subfascial location: It may have features of the malignancy on clinical & radiologic findings?**

Hoon-Soo Kim, Dae-Lyong Ha, Woo-Il Kim, Won-Ku Lee, Tae-Wook Kim, Sung-min Park, Hyun-Joo Lee, Gun-Wook Kim, Byung-Soo Kim, Moon-Bum Kim

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The unexpected finding of newly growing lump in an infant induces anxiety to parents and results in an urgent visit to hospital. Before performing invasive interventions for this infant patient, benign conditions like infantile hemangioma (IH) should be excluded as it could show variable clinical characteristics. A 6-month-old girl was presented with huge protruding skin-colored tumor on right upper back, with approximately 10 cm in diameter and without surface change. The tumor abruptly enlarged over the period of 2 weeks without any previous episode. MRI showed a lobulated hypervascular mass in the subfascial layer with neovascularization inside. Through these findings, thought by radiologist and orthopedic surgeon to be malignant tumor, exploratory surgery was planned. Before surgical excision, this patient was consulted to our department. As the lesion was softly palpable and movable, incisional biopsy was performed to rule out the benign tumor like deep type IH. Histopathologic examination showed multilobular proliferation of numerous vessels lined by plump endothelial cells. Immunohistochemical staining revealed the positivity of endothelial cells for CD-31, GLUT-1. Under the diagnosis of IH, the patient received oral propranolol medication for one year. Following the patient, we found the tumor diminished dramatically in volume. Although IHs are common benign tumor in infancy, subfascial location is unfamiliar and rare. So, we herein reported a case of subfascial large IH.

PO04-075

**Pedunculation in squamous cell carcinoma: Is this a predictive factor of less invasiveness?**

Hoon-Soo Kim, Kyung-Nam Bae, Woo-Il Kim, Min-Young Yang, Won-Ku Lee, Tae-Wook Kim, Sung-Min Park, Hyun-Joo Lee, Gun-Wook Kim, Hyun-Chang Ko, Byung-Soo Kim, Moon-Bum Kim

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Cutaneous squamous cell carcinoma (cSCC) is the secondary most common malignant neoplasm of the skin. There have been several studies conducted on the risk factors of cSCC, and particularly it is well known that large size highly affect to invasiveness of tumor. However, we have experienced that the invasion depth of the pedunculated SCC (pSCC) is not relatively deep even though the tumor size is large and rapidly growing. For one example, a 104-year-old female presented with a huge pedunculated mass on the left cheek. The result of biopsy was consistent with cSCC. Although the tumor was rapidly increasing in size, it was not easy to perform general anesthesia and prolonged surgery when the patient's age and other general conditions was considered. However, when considering the clinical appearance of pedunculation of tumor, we predicted that the invasion depth would not be deeper than expected. Fortunately, the invasion depth was limited to the upper subcutaneous fat layer, with the extent of skin defect remained nearly similar to that of tumor size. The patient is currently undergoing follow-up without local recurrence or metastasis. Although only several series of cases, we have experienced relatively small resection range and short stages in the surgical procedure of pSCC. Therefore, we propose carefully that pSCC could show relatively less invasiveness in the prognostic aspect of cSCC.

PO04-076

**Three zone of purple, red and white patch, a characteristic dermoscopic sign for glomus tumor**

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**Background** Despite characteristic clinical features of glomus tumor, dermatologists can meet diagnostic difficulty in some cases with glomus tumor. This study aimed to investigate clinical features and dermoscopic findings of glomus tumors.

**Methods** For 22 cases of glomus tumors, sex, age of initial visit, disease duration, site of lesion, size, associated symptoms and nail deformities and dermoscopic findings were investigated.

**Results** Mean age of initial visit and disease duration was  $43.4 \pm 13.4$  years and  $5.6 \pm 5.1$  years, respectively (19 females, 3 males). Both 1st fingers (9, 40.9%) were most common involved site. Nail lunula (12, 54.5%) was more frequently involved than proximal nail fold (6, 27.3%) or nail bed (4, 18.2%). The 15 cases were identifiable for size, and mean size was  $6.0 \pm 1.9$  mm. There was associated symptoms such as pain (16, 72.7%), tenderness (7, 31.8%) and cold intolerance (2, 9.1%). Onychoschizia (13, 59.1%), longitudinal ridging (12, 54.5%) and distal nail notching (8, 36.4%) were commonly associated nail changes. On dermoscopic examination, whitish patch (16, 72.7%), purplish patch (15, 68.2%), erythematous patch (13, 59.1%) and irregular linear vessel (1, 4.5%) were observed. In 9 cases (40.9%), characteristic three zones consisting of central purplish patch, middle erythematous patch and peripheral whitish patch were observed.

**Conclusion** Characteristic dermoscopic findings of this study can help making more accurate diagnosis and performing appropriated treatment in glomus tumors.

PO04-077

**A case of lymphangioma like kaposi sarcoma**

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Lymphangioma-like kaposi sarcoma (LLKS) is a rare histologic variant of kaposi sarcoma that can present as any of the four known clinical variants. LLKS is a vascular neoplasm that develops secondary to infection by human herpesvirus type 8 (HHV-8), which is also known as the kaposi sarcoma virus. Clinically, it can present with the usual manifestations, namely, patches, plaques, or nodules. An 85-year-old female presented with painful plaque on the both sole that first appeared one month ago. She reported that the lesions had gradually increased in number and size. Physical examination revealed raised erythematous, oval plaques measuring 1 cm in diameter. She had hypertension and otherwise healthy. Skin biopsy from the right sole demonstrated an atypical vascular proliferation of spindle cells interanastomosing as lymphangioma-like pattern. Immunohistochemical evaluation showed that tumor proliferation was positive for the endothelial markers such as CD31 and CD34. A Genotyping by PCR confirmed HHV-8 infection. After diagnosed with LLKS, the patient was referred to the plastic surgery department for surgical excision. We herein reported a rare case of lymphangioma like kaposi sarcoma.

PO04-079

**Solitary folliculotropic mycosis fungoides presenting as a nodule on the forehead in a young female patient**

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Folliculotropic mycosis fungoides (FMF) is a variant of mycosis fungoides (MF) characterized by infiltration of atypical T-cells into follicular epithelium. It usually appears as grouped follicular papules, plaques and tumors on the head and neck area. Solitary FMF is an extremely rare presentation of FMF. Here, we reported a solitary FMF presenting as a nodule on the forehead of a young Korean female patient. A 28-year-old female visited our hospital for an asymptomatic erythematous protruding nodule on forehead. She stated that the lesion appeared 3 weeks ago and continues to grow. She had no underlying disease nor takes any medication. The biopsy specimen showed diffuse infiltration of atypical lymphocytes from dermis to upper subcutis. There were prominent folliculotropism throughout the specimen and focal presence of epidermotropism. Immunohistochemical staining showed that the infiltrating cells were CD3-, CD4-, CD8+, CD20-, PD-1+ with alteration in CD4/CD8+ ratio (>10: 1). There were some CD30+ large cells comprising less than 10% of total T-cells. PCR test for the T-cell receptor (TCR)  $\gamma$  gene revealed monoclonality. After extensive studies including whole body PET-CT and bone marrow biopsy, there was no evidence of systemic lymphoma. Based on these findings, solitary FMF was diagnosed. Since the biopsy procedure had removed the entire lesion, no further treatment was considered. She is currently under close follow-up. In summary, we reported a case of solitary FMF presenting as an erythematous nodule that could easily be misdiagnosed as a benign condition. This case enlightens the need for histopathological examination and prudent differential diagnostic approach for such lesions.

PO04-108

**Two cases of congenital Becker's nevus presenting only linear hypertrichosis in children**

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*Chonbuk National University Medical School*

Becker's nevus typically presents as a brown hyperpigmented, hypertrichotic patch predominantly on shoulder, chest, or upper back. It usually occurs in male, first appearing as an irregular brown flat patch during or short after puberty. After a few years of appearing, coarse hair grows in the lesion. Herein, we reported two congenital Becker's nevus showing unusual presentation. The first case was a 5-year-old girl with a circumscribed hypertrichotic patch on the right posterior thigh since birth. The hairy lesion showed linear configuration that might follow the Blaschko's line, and there was no pigmented change. First impression of the skin lesion was nevoid hypertrichosis. The second patient was a 20-month-old girl with a hypertrichotic patch on the middle part of the right posterior leg since birth. Physical examination revealed grouped terminal hairs without pigmented lesion. Histopathological findings of the both patients revealed epidermal changes including mild acanthosis, elongation of rete ridges, basal hyperpigmentation, and slight smooth-muscle hamartomatous changes, which was consistent with Becker's nevus.

PO04-110

**Three prognostic factors in human melanoma: PD-L1 expression is associated with M2 macrophage infiltration but not with stromal periostin.**Fumitaka Ohno<sup>1</sup>, Takeshi Nakahara<sup>1,2</sup>, Masutaka Furue<sup>1,2,3</sup>*1. Department of Dermatology, Graduate School of Medical Sciences, Kyushu University, Fukuoka, Japan**2. Division of Skin Surface Sensing, Graduate School of Medical Sciences, Kyushu University, Fukuoka, Japan**3. Research and Clinical Center for Yusho and Dioxin, Kyushu University Hospital, Fukuoka, Japan*

Melanoma is one of the most aggressive neoplasia that exhibits poor prognosis and resistance against classic chemotherapy. Currently, immune-checkpoint therapy including anti-programmed cell death 1/ligand 1 (PD-1/PD-L1) antibodies proves to be a clinically effective anti-melanoma treatment. Although much attention has been paid on the PD-1/PD-L1 and T cell pathway, little is known about relationship among this pathway, periostin and M2 macrophage infiltration. We immunohistologically examined the expression of PD-L1, stromal periostin and the infiltration of CD163+ M2 macrophages, and statistically analyzed the association among these variables with the patients' histological features, clinical stage and prognosis. The PD-L1 expression in melanoma cells was significantly associated with poor prognosis. In addition, either stromal periostin expression or the number of infiltrated CD163+ M2 macrophages had a significant association with poor prognosis. Notably, melanomas with PD-L1 expression had significantly larger number of infiltrated CD163+ M2 macrophages, while the expression of PD-L1 was not correlated with the expression of periostin. These findings pointed a potential linkage between PD-L1 and M2 macrophage in melanoma progression.

PO04-112

**Long-term observation of dermoscopic findings in patients with infantile hemangioma**Jinnin Masatoshi<sup>1,2</sup>, Satoshi Fukushima<sup>2</sup>, Hironobu Ihn<sup>2</sup>*1. Department of Dermatology, Wakayama Medical University Graduate School of Medicine**2. Department of Dermatology and Plastic Surgery, Kumamoto University*

Clinical course of infantile hemangioma, the most common vascular tumor of infancy, is characterized by the progression after birth due to diffuse proliferation of endothelial cells and subsequent spontaneous involution. In addition, the lesions are classified into three clinical subtypes according to the depth of soft tissue involvement (superficial, deep and mixed): The superficial type has bright reddish and bumpy appearance, whereas the deep type shows normal or bluish surface. Because most of the tumor is located in the head and neck region, they often cause disfigurement. There is no need for immediate therapy in most cases where spontaneous involution can be expected. However, treatments should be considered against lesions preventing normal vision or large lesions causing cosmetic disfiguration. The evaluation of clinical staging or the tendency of involution is important for the decision of therapeutic approach. There have been a few reports about dermoscopic features of infantile hemangioma, which indicated their usefulness for more accurate diagnosis or for estimating depth of the lesions. In the present study, we focused on the changes in dermoscopic findings caused by clinical course or treatments. We discussed putative specific changes to involuting stages or treated lesions.

PO04-114

**A case of metastatic angiosarcoma on the abdominal wall following pelvic lymph node dissection**

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Angiosarcoma is a rare, malignant endothelial-derived tumour that occurs in various anatomical sites. Cutaneous angiosarcoma usually occurs in the head and neck region of elderly males. Post-mastectomy lymphedema or previous irradiation is well-known causes. This is a case of metastatic angiosarcoma of the abdominal wall following pelvic lymph node dissection. A 64-year-old Chinese female presented with a 2-month history of rapidly enlarging nodules on the abdomen. She developed persistent bleeding from these nodules, resulting in anaemia and hospitalization. Examination revealed multiple, bleeding exophytic nodules arising from large, ulcerated and infiltrative plaques on the abdomen. Incisional biopsies from two sites showed histological findings consistent with that of angiosarcoma. PET scan revealed multiple deposits in the axial skeleton, with tiny nodules in both lung fields and right iliac fossa. Three years ago, she was diagnosed with cervical cancer for which she underwent Wertheim's hysterectomy with bilateral pelvic lymph node dissection. She had no chemotherapy or radiotherapy. Subsequent gynecological reviews, including annual CT scans of abdomen/pelvis, did not reveal any recurrence. Diagnosis of metastatic angiosarcoma involving the right abdominal wall, retroperitoneal and right iliac fossa nodes, lungs, skin and bones was made. She underwent palliative radiotherapy for hemostasis. Angiosarcoma is an aggressive vascular tumour. While its occurrence in post-mastectomy patients with chronic extremity lymphedema is well-established, we have described a unique presentation of metastatic angiosarcoma of the abdominal wall arising after pelvic lymph node dissection. Patients who have undergone similar surgical procedures should be monitored closely to facilitate prompt diagnosis.

PO04-119

**Cytotoxic mycosis fungoides with clinical features of hypopigmentation and poikiloderma at the same time**Shinwon Hwang<sup>1</sup>, Jaemin Kim<sup>1</sup>, Sun Och Yoon<sup>2</sup>, Sang Ho Oh<sup>1</sup>

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There are many variants type of mycosis fungoides (MF), including folliculotropic MF, hypopigmented MF, and so on. Those variant types are usually rarely presented. Also, pathologically cytotoxic MF which expresses a CD8+ phenotype rather than CD4 is a rare clinical variant. We reported a case of cytotoxic MF which showed clinical features of hypopigmentation and poikiloderma simultaneously. A 51-year-old woman presented with about 20 cm-sized erythematous telangiectatic atrophic patch and several ill-defined hypopigmented patches on both buttock and thigh. She reported that she has had erythematous lesion on left buttock for more than 20 years and she noticed hypopigmented lesions since several months ago. There were atypical infiltration with epidermotrophism in the epidermis and dermis with linear accumulation of atypical lymphocyte along the basement membrane on center of both pokiloderma and hypopigmented lesion. Immunohistochemistry study showed that most infiltrated cells were CD3 positive, CD30 negative with CD8 dominant pattern. Positive clonality of T cell receptor was observed in gene rearrangement study. Therefore, she was diagnosed as cytotoxic MF due to CD8+ dominant infiltration with epidermotrophism. MF variant is usually rare presentation of cutaneous MF. Even in our case, disease showed that cytotoxic MF with hypopigmentation and poikilodermic features rare presentations of MF. Therefore, we reported a unique MF case showed all of these features.

PO04-120

**A case of virginal malignant melanoma treated with Mohs paste therapy**

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*Hiroshima University Hospital*

A 65-year-old woman presented with an intravaginal node with a pigmented macule spreading to the entire circumference of the vagina. She had a history of vaginal bleeding from 3 months ago. She was diagnosed with an inoperable malignant melanoma by a lesional biopsy. She started treatment with nivolumab but the tumor progressed with topical bleeding and prolapses through the vagina. She was admitted in order to control the bleeding and prolapse. She received Mohs' paste therapy three times per week. After 5th treatment, she got free of bleeding and prolapses and left the hospital. During the treatment, she did not feel any pain. Since the virginal mucosal tumor prolapsed through the vagina, the vulval skin was not exposed to Mohs' paste and the therapy was performed without any adverse effect. Mohs' paste therapy may be one of the options of treatments for mucosal tumor including genital region.

PO04-122

**Successful treatment of mycosis fungoides with mogamulizumab: Report of two cases.**

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Mogamulizumab induces cytotoxicity against CCR4+ lymphoma cells by antibody-dependent cell-mediated cytotoxicity in advanced cutaneous T cell lymphoma patients. Since the efficacy of mogamulizumab in mycosis fungoides (28.6%) is lower than that in Sezary syndrome (47.1%), reagents that enhance the antitumor immune response induced by mogamulizumab are needed to further optimize its use for the treatment of mycosis fungoides. In this report, we presented two cases mycosis fungoides, follicular mycosis fungoides and erythrodermic mycosis fungoides, successfully treated with mogamulizumab based therapy. Since mogamulizumab monotherapy had tolerated, post treatment was needed in both cases. We selected cyberknife for the post treatment in the first case, which induced abscopal effects of mogamulizumab. Since the second case was erythrodermic mycosis fungoides, we selected etoposide monotherapy for the post treatment of mogamulizumab, which achieved complete remission. Our present cases suggested the possible sequential therapy, which might achieve long time remission of therapy-resistant mycosis fungoides. Since this report presented a single case by each, further cases might provide fundamental insights into the mechanisms of the anti-CTCL response of mogamulizumab.

PO04-125

**Langerhans cell sarcoma on the shoulder**

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A 76-year-old man who had been treated with methotrexate for rheumatoid arthritis for more than 10 years noticed a reddish papule with 2 mm in size on the right shoulder in September 2015. After the biopsy at another clinic, he visited us for the treatment in January 2016. At the first visit, a dark purple, painless tumor with smooth surface and 4.5 × 2.0 cm in size was observed. No metastasis was detected by FDG-PET scan. Histopathological findings showed a lot of atypical cells which had nuclei with irregular shapes, constriction, and mitosis infiltrated diffusely throughout the dermis. In addition, tumor cells with multinuclei were observed. S100 and CD1a were positive and MIB-1 labeling rate was 60% in the tumor cells. Based on the above, a diagnosis of Langerhans cell sarcoma (LCS) was made. We resected this tumor including the fascia 3 cm apart from the margin of the tumor. LCS is a rare, malignant

tumor with poor prognosis, which often appears on the skin. Thus, we should take LCS into account for skin tumors with rapid growth.

PO04-127

### **An extradigital glomus tumor on the back mimicking keloid scar**

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A glomus tumor is a vascular neoplasm arising from neuromyoarterial glomus cells. Because glomus body is most concentrated in the distal extremities, glomus tumors occasionally appear a blue-red papule or nodule of the distal extremities, most commonly in the subungual region. A 57-year-old male patient visited our dermatology clinic with dark-red colored painful nodule on the right upper back. The patient mentioned the lesion had rapidly increased after laser treatment at the local clinic. The patient had no underlying diseases including hypertrophic and keloidal scar. Histopathological examination showed monomorphic cells with round to oval bluish nuclei. Immunohistochemically, tumor cells were strongly positive for smooth muscle actin (SMA) and negative for CD31, confirming the diagnosis of glomus tumor. After surgical excision, the patient had no tumor recurrence for 3 months. We herein reported an extradigital glomus tumor on the back, which had begun after CO<sub>2</sub> laser ablation. This case indicated extradigital glomus tumor could progress rapidly after laser treatment and mimic other cutaneous tumors including hypertrophic scar, keloid and traumatic neuroma.

PO04-130

### **A case of cutaneous dermoid cysts on the eyebrow and the neck**

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*Hirosaki University Graduate School of Medicine*

Dermoid cysts are benign developmental anomalies that occur as a result of the sequestration of the skin along the lines of embryonic closure. The common site is the lateral eyebrow region. Although the lesion is usually solitary, occurring in the two regions concurrently is uncommon. We reported a case of a 4-year-old female with two dermoid cysts on the eyebrow and the neck. A one-month-old girl presented to our hospital with elastic-hard, nontender, right lateral eyebrow and anterior neck swelling respectively 20 mm and 7 mm in diameter. The margins of the regions of swelling were well defined on palpation, and there was no associated erythema or induration. The patient had no significant past medical history. Upon clinical assessment, the two lesions were thought to be dermoid cysts. Ultrasound showed well-defined homogenous rounded hypoechoic and cystic lesions in the right lateral eyebrow and anterior neck areas measuring 20 mm × 18 mm × 8 mm, 5.4 mm × 5.0 mm × 4.8 mm, respectively. As she was too young to be taken for surgery, we took a wait-and-see approach. Then, she was taken for surgery four years later under general anesthesia. The cysts were excised completely, and the histopathological examination showed cysts lined by stratified squamous epithelium with mature adnexal structures. Finally we made a diagnosis of the two lesions as dermoid cysts on the right lateral eyebrow and the anterior neck.

PO04-142

**A case of the rapidly growing fibro-osseous pseudotumor of the digit after trauma**

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Fibro-osseous pseudotumor of the digit (FOPD) is a rare benign disease, usually developing on the fingers and toes of middle-aged adults. It originates from the soft tissue adjacent to the short bones of the hands or feet. Although FOPD is a reactive proliferation, clinical and histological characteristics often appear to be malignant. But, FOPD has excellent prognosis and recurrence is unusual, so this mass should be carefully distinguished from the malignancy such as an extraskeletal osteosarcoma. A 38-year-old man presented with a 7-month history of enlarging nodule on his right second toe. Before 7 months to his visit, his foot was stuck in the door and a small papule developed in the right second toe. Before 3 weeks to his visit, same toe was injured while cutting his toenail. After that trauma, the nodule grew rapidly in diameter up to 2.4 cm. We partially excised the tumor for the biopsy. Histopathological finding showed immature woven bone formation, spindle cell proliferation and many multinucleated giant cell. Osteoblastic rimming was uniform and marked pleomorphism was lacking. With these clinical and histological findings, we diagnosed him as FOPD. The remnant tumor was just followed up without further treatment and completely regressed after 3 months.

PO04-143

**Basal cell carcinoma in the genital areas: a report of 11 cases**

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In this study, we investigated 11 cases of genital basal cell carcinoma that we experienced in our department over the past 11 years. We used our department database to search for all cases of genital basal cell carcinoma recorded between March 2004 and June 2015, and identified 11 such cases. The age at the first visit ranged from 64 years to 97 years, and the average age was 73.1 years. The numbers of males and females were 3 and 8, respectively. Among the 11 cases, 2 were perineum cases, 1 was penile case and 1 was a scrotal case. Many of the clinical types showed dark brown or blackish nodules. Resection was performed in all cases, and simple closures were frequently employed.

PO04-144

**Thirteen cases of nodular cystic fat necrosis**

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Between 2004 and 2017, 13 cases were histologically diagnosed as nodular cystic fat necrosis (encapsulated fat necrosis) in our department. The mean age at the diagnosis was 56.4 years, ranging from 30 to 75 years, and all cases were female. Six of the 13 patients had lesion in the lower extremities, two in the thigh, two in the buttock, and two in the forearm. Histological examination revealed well-circumscribed tumor composed of degenerated fat cells with lipomembraneous lesions surrounded by a thin fibrous capsule, with or without secondary calcification. Some of the patients had underlying diseases, such as systemic lupus erythematosus (2), rheumatoid arthritis (1), sarcoidosis (2), Cushing's disease (1), aplastic anemia (1), and malignant melanoma (1).

PO04-145

**An unusual case of lymphomatoid papulosis showing histological features of both type D and type E**

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Lymphomatoid papulosis (LyP) is a lymphoproliferative disorder characterized by chronic, recurrent, self-healing popular, papulonecrotic, and nodular lesions that show histological features suggestive of a cutaneous T-cell lymphoma. It is currently classified within the spectrum of primary cutaneous CD30-positive lymphoproliferative disorders. Although waxing and waning of the eruption often last for more than a decade, patients with LyP usually show a benign clinical course. Histologically, three subtypes (types A, B, and C) were described in the 2008 WHO classification. In recent years, additional two subtypes have been proposed as distinct histological subtypes of LyP, namely, type D and type E. Type D and type E are extremely rare, accounting for less than 5 % of LyP cases, respectively. In addition, most reported cases of LyP showing histological features of type D and type E had CD8-phenotype. We reported a 47-year-old female patient with LyP who showed various skin eruptions, such as papulonecrotic lesions, large necrotic eschar-like lesions, and disseminated small papules. Several biopsy specimens were taken from eruption showing different clinical features during her clinical course. Histological and immunohistochemical examination revealed prominent infiltration of CD4+ medium-sized atypical T-cells into the acanthotic epidermis in one specimen, and massive angiocentric infiltration of CD4-positive large atypical cells in the dermis in another specimen. These histological features corresponded to type D and type E LyP, respectively. The patient responded well to low-dose methotrexate (2.5–5.0 mg/week).

PO04-048

**Aneurysmal fibrous histiocytoma: clinicopathology analysis of 30 cases of a rare variant of cutaneous fibrohistiocytoma**

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**Objective** Aneurysmal fibrous histiocytoma is often clinically misdiagnosed. So in this review, we put forward an insight on how to help diagnose this disease clinically.

**Method** We performed a retrospective chart review on all patients diagnosed with aneurysmal fibrous histiocytoma from 2007–2017 in Department of Dermatology, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, and all clinical data collected from the hospital archives.

**Results** From a total of 418 patients diagnosed with cutaneous fibrous histiocytoma, only 30 patients were confirmed to have aneurysmal fibrous histiocytoma. The remaining 28 patients were diagnosed with various types of vascular tumors although pathology classified them as having aneurysmal fibrous histiocytoma. Among 30 patients, 9 were male while 21 were female with ages ranging from 13–63 years (median 31.5 years). Tumors were predisposed on the head, neck, back, waist, gluteal and upper and lower extremities. After complete excision, there was no recurrence and no complications. Histologically, lesions showed the typical pseudoangiomatoid spaces without endothelial lining and infiltration of fibrohistiocytes in hemosiderotic pigmentation.

**Conclusion** Although the prognosis of aneurysmal fibrous histiocytoma is useful, accurate diagnosis is paramount to avoid misdiagnosis and subsequent complications.

PO04-109

**Fifteen cases of pilomatricoma with bullous appearance in children: analysis of the clinical and pathological features**

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**Objective** The clinical and pathological features of pilomatricoma with bullous appearance in children were summarized.

**Method** The clinical and pathological features of 15 cases of pilomatricoma with bullous appearance who had presented to Beijing Children's Hospital were analyzed.

**Result** Of the 15 cases, the ratio of female to male was 2: 1. The youngest case was 4 months old, while the oldest was 15 years old. The course of the disease was between 2 months and 4 years. The tumors were found predominantly on the arm and face, but the tumor can occur at the neck and shoulder as well. All tumors appeared as a semitransparent wrinkled blister with a hard nodule underneath. The coloration of the surface was all red. The dermatoscope examination of the 15 cases revealed similar findings: white unstructured area in red background, partly with arborizing vessels. All tumors were excised. All had typical histopathologic features: shadow cells, basophilic cells, transitional cells in tumor nests and dilated lymphatic vessels. In some cases, giant cell inflammation reactions and fibrous capsule surrounded the nest.

**Conclusion** Pilomatricoma with bullous appearance in children has a predilection for occurring on the arm and face regions, predominantly in females. The performance of white unstructured area in red background, partly with arborizing vessels can be seen in the dermatoscope examination. The prognosis of surgical excision is good. The pathological features include shadow cells, basophilic cells and dilated lymphatic vessels.

PO04-115

**A case of classical kaposi sarcoma in young men**

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A 26-year-old previously healthy, Chinese man presented for evaluation of several small lesions over his palm of left foot that developed over 2 months. He reported no associated pain, discomfort, or itching, nor did have a medical history suggestive of immunosuppression. There was no special physical examination in the system. Physical examination found several 4- to 5-mm, slightly raised, dark purple-black tumors on the left foot palm. In addition, two well-healed post-operative scars are visible, approximately 1 cm in length. A shave biopsy of the lesion had been performed. Laboratory blood testing including TPPA, TRUST, and HIV found no abnormalities. Our presumptive diagnosis was KS in an HIV-negative patient.

PO04-135

**Diagnostic value of immunohistochemical E2-2 expression in blastic plasmacytoid dendritic cell neoplasm (BPDCN)**Jing-Shu Xiong<sup>1</sup>, Hai-Sheng Yu<sup>2</sup>, Hao Chen<sup>1</sup>, Xiu-Lian Xu<sup>1</sup>, Wei Zhang<sup>1</sup>, Yi-Qun Jiang<sup>1</sup>, Li-Guo Zhang<sup>2</sup>, Jian-Fang Sun<sup>1</sup>*1. Institute of Dermatology, Chinese Academy of Medical Sciences and Peking Union Medical College**2. Institute of Biophysics, Chinese Academy of Sciences*

**Background** Blastic plasmacytoid dendritic cell neoplasm (BPDCN) is a rare and aggressive hematologic malignancy that predominantly involves the skin in its early phase and then can disseminate widely. E2-2, which is

also called transcription factor 4 (TCF4), plays an important role in the development of B-lymphocyte, T-lymphocyte and plasmacytoid dendritic cells. In some cases, it's difficult to differentiate BPDCN from other hematologic malignancies such as AML. We undertook the novel antibody E2-2 investigating its expression in BPDCN and its mimics.

**Methods** We analysed 18 patients diagnosed with BPDCN, 5 patients diagnosed with AML and 2 patients diagnosed with ALL. Immunocytochemistry of E2-2 antibody, along with CD2, CD3, CD4, CD7, CD20, CD79a, CD56, CD123, TdT, TCL-1, CD34, CD68, CD163, CD1a, MPO and ki67, were performed on the specimens.

**Results** Morphological analysis showed similar features for cases of BPDCN and its mimics with aggregation of large atypical cells, high nuclear to cytoplasmic ratio, frequent mitotic figure and prominent nucleoli. E2-2 expression was found in 17 of 18 BPDCNs, 0 of 5 AMLs and 0 of 2 ALLs.

**Conclusion** E2-2 showed promising positive results in BPDCN. Positive staining for CD4, CD56, CD123 and TCL1 was associated with BPDCN. E2-2 seems to have the same value as TCL-1 in distinguishing BPDCN from AML. Further validation is required to establish E2-2 as a novel biomarker.

PO04-049

### **Extramammary Paget disease: female is more affected than is male?**

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Extramammary Paget disease is the proliferation of malignant abnormal large pale cells within the epidermis. It manifests as well-defined border, but occasionally less defined edge, red patch with scaling or mild exudation on the surface. It is believed affected females are much more than are males. Here we had 71 patients with Extramammary Paget disease, its male to female ratio is 66 to 5. The detailed clinical data including age, duration, symptoms, characteristics of the lesions were recorded and analyzed. This fact is very extraordinary and impressive. As to the cause of different phenomenon, further data from various centers are awaited to establish.

PO04-146

### **Cutaneous and hepatic hemangioma associated with Kasabach-Merritt syndrome in an adult patient with discoid lupus erythematosus**

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This is a case of cutaneous and hepatic hemangioma with disseminated intravascular coagulopathy (Kasabach-Merritt syndrome) in an adult patient with discoid lupus erythematosus (DLE). The 52-year-old female presented with a dark redness macula with scale and mass in the right face for 11 years. The lesion of the face had become swelling and pain for 2 months. Owing to the low platelet count, the patient was not able to take the skin biopsy, except for ultrasonography, which displayed right cheek dark redness macula and hemangioma. Initial medicine treatment improved the low platelet count; meanwhile, the patient accepted the excision surgery to remove the left hepatic lobe hemangioma and spleen. After operation, the patient recovered well, all coagulation parameters returned to normal, and the right cheek hemangioma was disappeared. However, the redness macula with scale of the right facial which was in the same position as the hemangioma relapsed, especially being exposed to the sunlight for a long time. Skin biopsy and direct immunofluorescence (DIF) test conformed to DLE. According to the clinical manifestation and test results, the patient was diagnosed as adult Kasabach-Merritt syndrome with DLE.

PO04-002

**A rare case of sebaceous adenoma on the face and its dermoscopic features**

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A 74-year-old Chinese man presented with a 10-year history of a nodule on the left cheek. Skin examination revealed a red-yellowish firm lesion measuring around 1 cm in diameter. Dermoscopy showed a central crater filled with yellowish-white keratotic cores and surrounded by yellow lobular-like structures on erythematous background, with irregular arborizing vessels and crusts. Skin biopsy revealed that lobules of sebaceous glands composed of peripheral basaloid cells and central mature sebocytes. This patient was diagnosed with sebaceous adenoma. Sebaceous adenomas are rare, and the differential diagnosis should be made with sebaceous hyperplasia. Although sebaceous adenomas are benign, an excessively rapid growing lesion is highly suspicious of being malignant.

PO04-001

**Retrospective reviews of 34 cases of microscopic excision of digital glomus tumor**

Jian-Bo Zhong, Ping Yang, Li-Ming Wu

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**Background** Glomus tumors are rare benign neurovascular neoplasms arising from the hyperplasia of glomus body. And the most common location is the hand, particularly the subungual area. Recurrence and cosmetic outcome of nail are of the concern of dermatological surgeons. This study aimed to evaluate the recurrence and aesthetic outcome of microscopic excision of subungual glomus tumors.

**Methods** The 34 cases of digital glomus tumors from May 2014 to December 2016 at our hospital were reviewed. Patients were evaluated preoperatively with standard physical examinations, ultrasonography and magnetic resonance imaging. All cases underwent microscopic surgical excision with tourniquet under anesthesia of proximal digital block. The 30 cases underwent excision via ventral or lateral transungual approach, 2 cases via lateral perisubperiosteal subungual approach, 1 case via perisubperiosteal approach, and 1 via finger pulp approach. Symptom relief, recurrence, digit function, nail deformity or any other complications were reviewed.

**Results** Total 27 females and 7 males with a mean age of 42.9 years at diagnosis had been reviewed. The 30 tumors were located in fingers and 4 in toes. With a mean follow-up of 13.2 months (3–29 months), no recurrence had been reported. Short-term edema of digits was complained by 4 patients. One case of postoperative infection had been recorded. The aesthetic outcome was satisfying except one case with extremely nail plate deformity at the first visit of diagnosis already.

**Conclusions** Microscopic surgical approach provides the complete removal of digital glomus tumors by a minimum injury with satisfying result of recurrence and cosmetic outcome.

PO04-003

**Efficacy and safety of interferon-alpha-2a intralesional injection for the treatment of focally recalcitrant mycosis fungoides**

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**Background** Effective and safe therapies for mycosis fungoides (MF) resistant to conventional treatment are currently elusive. Intramuscular or subcutaneous interferon (IFN) has been administered to treat MF alone in combination with other treatment. However, few data are available on the efficacy and safety of intralesional IFN in focally recalcitrant MF patients. This study aimed to evaluate the efficacy and safety of IFN- $\alpha$ -2a intralesional

injection treatment of focally recalcitrant MF.

**Methods** We retrospectively analyzed cases of focally recalcitrant MF treated with IFN- $\alpha$ -2a intralesional injection in Peking Union Medical College Hospital and evaluated the efficacy and safety of the therapy. Clinical photography of all injected lesions, records of symptoms, and results of complete blood count and liver function test before therapy, every other week during therapy, and 1, 2 weeks after therapy were reviewed thoroughly. A total of 15 patients (4 males and 11 females) were identified. The mean age of all patients was  $48.5 \pm 11.6$  years. The patients were treated with IFN- $\alpha$ -2a intralesional injection 3 times per week. The average number of lesions treated with interferon intralesional injection was  $2.7 \pm 1.6$ .

**Results** The median number of treatment was  $25.3 \pm 11.1$  sessions in  $58.7 \pm 25.9$  days. The median total dose was  $75.8 \pm 33.3$  MU. Ten patients achieved complete response. One patient had partial response. The overall response rate was 73.3%. Four patients had stable disease. There were no severe acute or chronic side effects.

**Conclusion** IFN- $\alpha$ -2a intralesional injection is an effective and safe treatment modality in the treatment of focally recalcitrant MF.

PO04-004

### **TWEAK/Fn14 interaction confers aggressive properties to cutaneous squamous cell carcinoma**

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**Objectives** Recent studies showed that tumor necrosis factor (TNF)-like weak inducer of apoptosis (TWEAK)/fibroblast growth factor inducible 14 (Fn14) signaling participates in the progression of internal malignancies. However, its role in the biological properties of cutaneous squamous cell carcinoma (SCC) remains unclear. This study was designed to explore the effect of TWEAK/Fn14 activation on cutaneous SCC as well as the relevant mechanism.

**Methods** The expression of TWEAK and Fn14 was determined in tissue samples of patients with cutaneous SCC. Human primary keratinocytes and SCC cell line (A431) were cultured *in vitro*, receiving the stimulation of TWEAK. The xenografts of SCC were generated subcutaneously in BALB/c nude mice.

**Results** Both TWEAK and Fn14 were highly expressed in cutaneous SCC. Moreover, TWEAK/Fn14 activation promoted the proliferation, migration, and invasion of A431 cells. Interestingly, TNF receptor type 2 (TNFR2) was upregulated in A431 cells, and transfection TNFR2 siRNA abrogated the effect of TWEAK on these cells. Finally, the favorable effect of TWEAK/Fn14 signals was confirmed in BALB/c nude mice with SCC xenografts.

**Conclusions** The TWEAK/Fn14 signals contribute to the progression of cutaneous SCC, possibly involving the TNF- $\alpha$ -independent TNFR2 signal transduction.

PO04-005

### **Granular cell tumor of skin: presenting as a task**

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Granular Cell Tumor (GCT) is a unusual neoplasms that Clinical features often appear atypical and can be misdiagnosed or missed completely. Herein, through awareness, we improve the clinical diagnosis of granulosa cell tumor, in order to ensure early diagnosis and prompt treatment. A 43-year-old woman found a genital nodular mass on her right genital that appeared for 3 months with a smooth surface and pale color. The tumor size was  $1.5 \times 2$  cm and continuously increased. There were no other clinical symptoms. No family history was found. The history of obstetrics and gynecology showed that she started menarche at the age of 13 and her menstrual cycle was normal. She had two normal deliveries and had no history of caesarean section. The lump was completely removed. Tissue sections were histopathologically evaluated and stained with hematoxylin-eosin and periodic acid Schiff.

Immunohistochemistry then used pre-diluted antibodies that were S-100 protein, vimentin, CD68, Ki67, P53, CD34, and SMA. Histologically, a typical granulose cell was showed, which meant a large pale round or oval cell with a pale stained nuclei in the centrally situated and surrounded by abundant fine or coarse eosinophilic cytoplasm, growing like broad or nested arrangement and separated by fibrous tissue. The main morphological feature was the granularity of the cytoplasm, which was caused by the massive accumulation of phagolysosomes. Immunohistochemistry revealed the following: S100 (+++), Vimentin (+++), CD68 (+), P53 (+), CD34 (-), SMA (-) and Ki67 (+) >10%. PSA staining showed negative. The rest of the examination was insignificant. The final diagnosis revealed granular cell tumor. No recurrence of the tumor occurred during the 6-month follow-up period. GCT was first reported by Abrikossoff in 1926, initially thought to be muscle origin, named due to the granular eosinophilic cytoplasm. Macroscopically, it manifests as a solitary nodule, sessile, not more than 3 cm, firm, white and painless. Its presence in the vulva is very rare (5–16% of all cases). The absence of specific clinical features often leads to a delayed diagnosis of GCT. The appearance of these lesions differentiates them from benign cystic lesions such as epidermal cysts, sebaceous cysts, Bartholin gland tumors, and painless benign nodules of the vulva such as lipomas, fibroids, and hidradenomas and papillomas. In this case, the female patient presented with a genital pale mass was considered as leukoplakia vulvae firstly, which caused a serious psychological burden on the patient. The patient assertively used oral Chinese medicine of an undetermined type and several topical drugs to stimulate the lesion. The case provided a powerful reminder of how valuable earlier histopathological and immunohistochemical examinations, and surgery with an appropriate margin can be in the diagnosis of GCT at an advanced stage, which could have allowed the patient in the current case to avoid a nonstandard treatment or a overdiagnosis of malignancy.

PO04-010

### Expression and significance of TIPE1 in skin squamous-cell carcinoma

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**Objective** To investigate the expression and significance of TIPE1 in the skin squamous-cell carcinoma (SCC).

**Methods** Immunohistochemistry was carried out to examine the expression of TIPE1 in tissue specimens from the lesions of 31 SCC patients, as well as from the skin of 31 normal human controls.

**Results** In normal skin tissues, TIPE1 was weakly expressed in the basal layer and the lower layers of stratum spinosum of the epidermis, and the positive rate was 23.2% in the whole epidermis. In SCC, TIPE1 was highly expressed in most of the tumor cells, and in the whole epidermis, the positive rate was 77.4%. The expression of TIPE1 in SCC was significantly higher than that of normal skin ( $P < 0.005$ ).

**Conclusion** The expression of TIPE1 in SCC was significantly higher than that of normal skin, and TIPE1 may be involved in the occurrence and development of SCC.

PO04-011

### Skin metastases of lung cancer as the first sign: a case report and review

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The skin metastases from lung cancer are uncommon, the incidences are less than 1%, and all histological types may metastasize from lung to skin. Here, we reported a case of male patient who presented with multiple skin metastasis lesions as the initial clinical manifestation of lung cancer. An 82-year-old male who presented with three painless nodules for two months; two of nodules were localized on his right arm and one on the abdomen. A series of examinations including the biopsy, immunohistochemistry and a CT scan of chest, confirmed the presence of lung squamous cell carcinoma. In conclusion, skin metastasis as the first sign of lung cancer is an extremely rare occurrence. Despite its rarity, the appearance of skin lesions, in patients with a history of smoking, requires much attention. For this reason, the histologic and immunohistochemical markers examination from the skin is necessary for diagnosis. Patients should also have a bone scan and brain CT to investigate other common metastatic sites.

PO04-012

**Synergistic targeted chemo-photothermal therapy mediated by pH-triggered controlled drug release from ZnO-functionlized Gold@Mesoporous silica to elicit antitumor immunity and inhibit progression of melanoma**Ya-Min Zhang<sup>1</sup>, Jin-Tao Zhu<sup>2</sup>, Juan Tao<sup>1</sup>

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**Background** The relatively ineffectiveness, nonselectivity and severe side effects of conventional therapies have driven malignant melanoma with high incidence and mortality, while checkpoint inhibitors-based immunotherapies only benefit a minority of melanoma patients. The purpose of this study was to fabricate a highly effective, minimal toxic and tumor-specific immunotherapy for melanoma.

**Methods** Herein, we developed a versatile ZnO-capping and doxorubicin-loaded multifunctional Gold@Mesoporous Silica to integration photothermal properties of gold nanoparticles, pH-responsive properties of ZnO and chemotherapy in a single nanoplatform. The cytotoxicity of this nanocarrier to melanoma cells, the promoting effect and related mechanisms on the activation of tumor-specific immune response were determined *in vitro*. In addition, the effect of inhibiting tumor growth and lung metastasis, eliciting antitumor immune responses and its safety profiles in murine melanoma models were also monitored *in vivo*.

**Results** As an effective drug carrier, the outer ZnO-capping mesoporous silica exhibited a high drug payload up to 33.89% and controlled drug release in targeted tumor. Upon near-infrared (NIR) laser irradiation, the nanocomposite could not only destroy tumor by inducing necrosis, but also induce a strong tumor-specific immune response by releasing tumor-associated antigens and resulting in calreticulin exposure on the surface of cancer cell, further promoting the maturation of dendritic cells. Furthermore, the nanocomposite involved simple steps and forcefully inhibited tumor growth and lung metastasis.

**Conclusions** This study presented a promising nanoplatform which combined local hyperthermia, pH-sensitive drug release and gating strategy, chemotherapeutics and induced immunotherapies, providing a potential strategy for synergistic treatment of melanoma.

PO04-013

**Leclercia adecarboxylata in a patient with malignant solitary fibrous tumor**Wei-Tao Zhang<sup>1</sup>, Peng-Jun Zhou<sup>1</sup>, Yan-Fei Zhang<sup>2</sup>

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Malignant solitary fibrous tumor is a rare spindle cell tumor that derives from mesophyll cells. The most common location is the visceral pleura. In addition, it involving peritoneal, pericardial soft tissues, lungs, liver, kidney, breast, thyroid, prostate and kidney had been reported. There are no obvious symptoms in the early stage. Leclercia adecarboxylata is a rare gram-negative bacillus, which can cause gastrointestinal infection. It may be conditional pathogenic bacteria. Blood and wound are easied to infect when the immune function of the patient is low. Herein, we reported the first case of leclercia adecarboxylata in a patient with malignant solitary fibrous tumor in Chinese and English literature. A 37-year-old previously healthy man was referred to our department presenting with a nodule on his left shoulder that had developed 6 months. Physical examination revealed a 10 cm × 10 cm × 6 cm verrucous hyperplasia lump, with the exudation, stink and bleeding. He denied any genetic history. No systemic abnormalities were detected. The lesion was toughness and painless on palpation. The patient was afebrile, and other than the lesion, physical examination were unremarkable. Blood culture was negative, however both smear and culture from the purulent secretion showed gram-negative bacilli, which was eventually identified as leclercia adecarboxylata. The microorganism was sensitive to cephalosporin. After treatment with cefuroxime sodium, both smear and culture was

negative. And then, he underwent surgical resection of the lesion. The biopsy of the lesion showed spindle cell soft tissue tumor with hemorrhage and necrosis. The tumor was composed of abundant cell and sparse cell area. Some of them showed hemangiopericytoma like structure, heteromorphic, multinucleated giant cells and nuclear mitotic figures. Immunohistochemical studies showed the cells positive for CD99, bcl-2, STAT6 and MDM2, but negative for S-100, CK, EMA, HMB45, SMA, CD34, and AB, proliferation index of Ki-67 was 30%. Based on the clinical and histologic findings, the diagnosis of MFST was made. The wound healed well and the patient was under follow-up.

PO04-014

### **Vulvar edema: a sign of metastatic carcinoma**

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Skin is the most common metastatic site of visceral malignant tumors. Sometimes it's the only sign for visceral malignant tumors. In female, breast and colon cancer are easiest metastasis to skin, and the male is mainly with lung cancer, stomach and colorectal cancer. Clinical, there is no specific manifestation. When there are papules, plaques and nodules with skin color or poor activity and no obvious pain, it is possibility of metastatic carcinoma of the skin. Herein, we reported a case of rectal cancer with vulvar edema, which was the only sign of metastatic carcinoma. A 42-year-old woman was referred to our department presenting with vulvar edema and walking pain that had developed 6 months. Physical examination revealed bilateral large labia markedly swollen. He denied any genetic history. No systemic abnormalities were detected except stools 5–6 times/day, sometimes with bloody stool. The lesion was toughness and painless on palpation. The biopsy of the lesion showed heterotypic cell infiltration in the superficial and deep dermis, large and deep staining of the nucleus, in the lymphatic vessels, cells with adenoid differentiation can be seen. Immunohistochemical studies showed the cell positive for CK18, CK20, but negative for CEA, TTF-1, CK7, EMA, proliferation index of Ki-67 was 80%. The histologic findings indicated metastatic carcinoma. Tumor markers showed: CEA was 3.6ng/ml, CA19-9 was 500.70 U/ml and CA72-4 was 17.31 U/ml. The enteroscopy inspect found rectum mass distance 5–8 cm from the anus mucous and pathological biopsy suggested was adenocarcinoma. Groin lymph node puncture tissue showed cancer cells. This patient was recommended to the oncology department for chemotherapy. In this patient, vulvar edema caused by tumor cells infiltrating the skin and blocked the lymphatics. It is easy to misdiagnose as contact dermatitis and angioneurotic oedema.

PO04-015

### **Mycosis fungoides palmaris et plantaris: Clinicopathological study and comparison between the Asian and Western patients**

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**Objective** Mycosis fungoides palmaris et plantaris (MFPP) is a rare form of mycosis fungoides (MF), and often misdiagnosed as an inflammatory disease. This study aimed to describe the clinical features, histopathologic characteristics, response to therapy and compare the Asian and Western patients with MFPP.

**Methods** We reported in details one case of MFPP. A literature search was performed on PubMed, Wanfang data, and China National Knowledge Infrastructure. The 41 patients were reviewed in this study.

**Results** The male to female ratio was almost 1:1 and 5:1 in Western and in Asian countries, respectively. MFPP usually presented with pruritus (20/48.78%), plaques (24/58.58%) located bilaterally on hands and feet clinically, and showed epidermotrophism, hyperchromatic lymphocytic infiltrate in the dermis, and Pautrier's microabscess

(20/48.78%) histopathologically. The Western patients were often treated with phototherapy and radiotherapy, however, the Asian patients with a combination of different therapies.

**Conclusion** MFPP is more common in males than females, and usually occurs between the ages of 40 and 70 years. The major differences in MFPP between the Asian and Western patients are the gender predilection and the therapeutic strategies.

PO04-016

### **A case of cutaneous plasmacytosis**

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A collection of plasma cells in the skin can represent a broad spectrum of disease entities. Secondary syphilis, primary cutaneous plasmacytoma, primary cutaneous plasmacytosis, cutaneous lymphoid hyperplasia and nodular amyloidosis are considered possible differential diagnoses. The primary cutaneous plasma cell disorders can range from malignant to benign plasma cell neoplasms. We presented a case of cutaneous plasmacytosis. The patient was a 34-year-old man, presented with disseminated reddish-brown plaques and nodules on the right side of the hips, inguinal groove, and the thigh. Histopathologically, mature plasma cells perivascular infiltrate were observed mainly in the dermis. Polyclonality of infiltrating plasma cells with coexistence of both kappa and gamma chain-positive cells can be demonstrated with immunohistochemistry, as well as CD20<sup>+++</sup>, CD38<sup>++++</sup>, CD79a<sup>++++</sup>, CD138<sup>++</sup>, Ki67<30%. The diagnosis of cutaneous plasmacytosis was established by pertinent laboratory findings. Primary cutaneous plasmacytosis (PCP) is an uncommon reactive lymphoplasmacytic disorder of uncertain etiology. Cutaneous plasmacytosis is a rare disease characterized by peculiar multiple eruptions and hypergammaglobulinemia. It has been mainly described in patients of Japanese descent, with only few reports in Caucasians and Chinese, although information concerning the disorder was limited to individual case reports. Cutaneous plasmacytosis is characterized by multiple red to dark-brown nodules and plaques on the trunk and usually associated with polyclonal hypergammaglobulinaemia. Histologically, lesions contain dense perivascular infiltration of mature polyclonal plasma cells without any atypia, in the dermis and subcutaneous fat. The clinical course is chronic and benign without spontaneous remission. Available treatments for cutaneous plasmacytosis include Psoralen Ultraviolet A radiotherapy, systemic chemotherapy and intralesional steroid injection. In this report, we presented a patient with cutaneous plasmacytosis who was treating with Tacrolimus Ointment and Psoralen Ultraviolet A.

PO04-017

### **A case reported of hypopigmented mycosis fungoides in a middle-aged woman misdiagnosed as tinea versicoeor**

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A 48-year-old woman was admitted to our hospital with the chief complain of multiple hypopigmented patches on the trunk and limbs for 10 years. The hypopigmented patches were first found in her bilateral axillae 10 years ago. Soon after within months, similar lesions showed around the lateral areas of both her hip joints and the inner area of her upper limbs. The patient did not seek for any treatment until multiple hypopigmented patches started to involve her chest, abdomen and back 4 years ago. She was diagnosed as tinea versicoeor and given ketoconazole cream for 6 months. No improvement was noticed but in the meanwhile, the lesions stopped developing. Nevertheless, 2 months ago, new hypopigmented patches were found on her lateral inguens and thighs. Physical examination revealed multiple well-defined hypopigmented patches on her trunk and limbs, symmetrically distribution, without scale on the surface. Fungal direct microscopic examination and cultures were negative. The histopathological examination found epidermotropism of lymphocytes and perivascular lymphocytic infiltrate. Immunohistochemical staining was positive for CD3 (in epidermis and dermis), CD4 (predominantly in epidermis), and CD8 (in epidermis and dermis).

TCR gene rearrangement studies demonstrated clonal rearrangement. Hypopigmented mycosis fungoides (HMF) was diagnosed accordingly. Topical corticosteroid was given combined with PUVA1 phototherapy. HMF is a rare variant of cutaneous mycosis fungoides, with most cases reported in children. Hereby we reported a rare case of female suffering from HMF in her middle age. Due to the very low incidence and usually asymptomatic features, HMF is commonly misdiagnosed.

PO04-018

### **Diagnosis of subclinical extramammary Paget's disease with a combination of non-invasive photodynamic diagnosis and reflectance confocal microscopy: A case report**

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Extramammary Paget's disease involves rare skin malignancy, and its diagnosis requires invasive biopsy and pathological examination. Surgery is the standard treatment for extramammary Paget's disease patients; however, as incision boundaries and the depth of tumour cell infiltration are often unclear, the post-operative recurrence rate is high. We presented a case in which we used photodynamic diagnosis in combination with reflectance confocal microscopy before surgery to detect an extramammary Paget's disease lesion that was located 3 cm from the classical lesion. This secondary lesion exhibited a subclinical presentation, and it was eventually confirmed as an extramammary Paget's disease lesion by pathological examination. During detection, using our technique, we delineated the boundaries of the extramammary Paget's disease lesion as a guide for surgical excision. The findings of our case demonstrated that photodynamic diagnosis combined with reflectance confocal microscopy could be used for the non-invasive diagnosis of subclinical extramammary Paget's disease and might be used to guide strategies for planning treatment and preventing relapse.

PO04-019

### **A case of clear cell acanthoma**

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A 64-year-old man presented with a neoplasm on his lower left leg over 7 years. Remove the lesion by operation. Pathology reports: The boundary between the lesion and the normal tissue was clear. The acanthotic epidermis was composed of large amount of clear cells. Parakeratosis presented on the surface and with scattered neutrophils distributed. Diagnosis: Clear cell acanthoma.

PO04-020

### **Study of Mohs microsurgery modified by photodynamic diagnosis combined with ultrasonography to treat extramammary Paget's Disease**

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**Objective** To investigate the value of modified Mohs microsurgery, which is processed by photodynamic diagnosis combined with preoperative ultrasonography, in the treatment of Extramammary Paget's Disease (EMPD).

**Methods** The 20 EMPD patients were enrolled in this study. The patients were divided into modified Mohs group (Group A) and traditional Mohs group (Group B) equally. All patients were male and aged from 51–78 years. All the lesions located at the lower abdomen, groin, perineum, scrotum and penis. In Group A, 5-aminolevulinic acid (ALA) was used to cover the lesion and margin as 3 cm for 3 h. The tumor's size and border were marked by Woods lamp. Ultrasonography was performed within the tumor area to locate the bottom and investigate its depth. Then, Mohs microsurgery was performed as normal. In Group B, the traditional Mohs microsurgery was performed. After excision, all defects were repaired by scrotal flap, inguinal flap, scrotum flap or other local flap transplantation, including free skin grafts. Paraffin sections were reexamined postoperatively. All patients were followed up for 1–3 years.

**Results** In Group A, 7 cases experienced only one stage during Mohs microsurgery, while 3 cases with two stages. In Group B, 4 cases with one stage, 4 cases with two stages, and 2 cases with three stages. During reexamination, 2 cases were found false positive, 2 cases were found false negative. During 3-year follow-up, no recurrence was found in Group A, as one in Group B.

**Conclusions** The method of photodynamic diagnosis combined with preoperative ultrasonography examination can improve the traditional Mohs microsurgery for EMPD. It could alter the limitations of Mohs microsurgery for single central tumors that are not applicable to multicenter tumors, shorten the duration of Mohs surgery, and improve the therapeutic effect of EMPD.

PO04-027

### **Superficial angiomyxoma of the scrotum in a child: A case report and literature review**

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A 13-year-old Chinese boy presented with a 1-year history of a slowly growing cutaneous tumor on the scrotum. Clinical examination revealed a yellowish nodule with a smooth surface on the left scrotum. It was about 0.8×0.8 cm in size, oval-shaped, soft, non-tender, palpable, and without invoking any pain. The patient did not have any similar nodules in other areas of the skin. The nodule was completely excised under local anesthesia. Histopathologically, the lesion was a well-circumscribed, nodular myxoid tumor and involved the reticular dermis on low power examination. At higher magnification, the myxoid stroma contained spindle-shaped, fibroblast-like cells and small, thin-walled vessels. There were no atypical or mitotic figures in the tumor cells. Clinical and histological findings were diagnosis of benign superficial angiomyxoma. No recurrence was observed during a postoperative 6-month follow-up. At present, only about a hundred cases were reported. It occurs mostly in adults, and is common in the trunk, limbs, vulva, and head and neck. The present case is interesting and unusual as the lesion manifested on the scrotum of a child. In 1985, Carney and colleagues first defined SA as a part of Carney's complex syndrome. However, angiomyxoma can be seen in patients without this syndrome. The affiliation of SA and Carney's syndrome is still controversial. Currently, our patient had no family history of myxomas. He was healthy and did not have any other features of Carney's syndrome. Nevertheless, a careful follow-up may still be required because of his young age.

PO04-028

### **ATP-citrate lyase contributes to melanoma growth and MAPK inhibition resistance by regulating P300-MITF-PGC1 $\alpha$ signaling and mitochondrial function**

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**Objective** To investigate the role of ATP-citrate lyase in melanoma growth and MAPK inhibition resistance, and the underlying mechanism.

**Methods** ACL expression in melanoma cell lines and tissues was analyzed via qRT-PCR, Western blot and immunohistochemistry staining; the correlation between ACL expression and patients' survival was analyzed in TCGA database; the role of ACL in melanoma growth was investigated via CCK8, colony formation and xenograft

tumor model; mRNA expression profile, qRT-PCR and Western blot were performed to identify downstream genes of ACL; qRT-PCR, Western blot, transmission electron microscope, cell metabolism-related assays and chromatin immunoprecipitation were performed to investigate how mitochondria function was regulated by ACL; the correlation between ACL expression and downstream genes was analyzed in TCGA database; qRT-PCR, Western blot, flow cytometry and xenograft tumor model were performed to elucidate the role of ACL in MAPK inhibitor resistance and the underlying mechanism.

**Results** ACL expression was markedly increased in melanoma and highly associated with poor patients' outcome. ACL promoted melanoma growth by specifically regulating cell-cycle progression. ACL specifically regulated MITF-PGC1 $\alpha$  axis to promote mitochondrial biogenesis via P300-mediated histone acetylation. ACL expression was highly correlated with MITF-PGC1 $\alpha$  axis molecules in TCGA database. The combined inhibition of ACL sensitized melanoma cells to MAPK inhibition by suppressing MITF-PGC1 $\alpha$  axis.

**Conclusions** ACL alters histone acetylation via P300 to promote MITF-PGC1 $\alpha$  axis and mitochondria function, thus contributing to melanoma growth. The combined inhibition of ACL sensitizes melanoma cells to MAPK inhibition by suppressing MITF-PGC1 $\alpha$  axis.

PO04-031

### **Clinicopathological and immunohistochemical analysis of the outpatients diagnosed with tufted angioma at Xijing Hospital**

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**Objective** To retrospectively investigate the clinicopathological and immunohistochemical manifestations and characteristics among the outpatients diagnosed with Tufted Angioma (TA).

**Methods** The data of TA patients who received medication at the outpatient department of Xijing Hospital from 2003 to 2014 were collected. We retrospectively analyzed 54 cases of TA and performed immunohistochemical study with vascular markers and antibodies to sex hormone receptors.

**Results** Forty-six cases were presented as solitary lesion and 8 cases were presented as multiple lesions and most of them were presented as plaques. Histopathologically most cases showed proliferation of endothelial cells in a cannonball pattern, while in several early and regressed lesions the tufted appearance was not prominent. The proliferated endothelial cells were positive for CD31 and Wilms tumor1, focally positive for D2-40 and Prox1, and negative for Glut-1. Androgen receptor, estrogen receptor, and progesterone receptor were negative in all cases.

**Conclusions** Tufted angioma should be recognized as a vascular tumor with lymphatic differentiation. It seemed that sex hormone receptors are not pathogenically related with TA.

PO04-033

### **Role of cathepsin D in human skin melanocytes and skin melanoma cells**

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**Background** Cathepsin D, an aspartate protease, relates to epidermal differentiation. Our previous study found that cathepsin D decreased in chronic photodamaged skin *in vivo*. We questioned whether the downregulation of cathepsin D might contribute to the UV induced melanoma. This study investigated the role of cathepsin D in human skin melanocyte and skin melanoma cell.

**Methods** Human skin normal melanocyte and skin melanoma cell were cultured separately. The 100  $\mu$ g/L Cathepsin D were then added and cultured with in skin melanoma cell for 24 h. P53, p16INKa, p19ARF, p21Cip1 in human skin melanocyte, skin melanoma cell (control) and skin melanoma cell cultured with cathepsin D were detected and compared by Western blot analysis.

**Results** Skin melanoma cell expressed low level P53 and high level p21Cip1, compare to normal melanocyte. After

culture with 100 µg/L cathepsin D for 24 h, melanoma cell expressed higher p16INKa and P53 which was close to normal melanocytes expressed level while p21Cip1 expression was no changed. The p19ARF expression was negative in all three group cells.

**Conclusions** These data suggested that P53 and p21Cip1 might act as one of the biomarker to identify skin normal melanocytes and skin melanoma cells. Cathepsin D might change the melanoma biological process by acting on P53. The use of cathepsin D products may be extended as an ingredient of topical drugs and chemicals in skin melanoma treatment.

PO04-034

### Oncogenomic analysis identifies novel biomarkers for tumor stage mycosis fungoides

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**Background** Patients with mycosis fungoides (MF) developing tumors or extracutaneous lesions usually have a poor prognosis with no cure. This study aimed to identify potential novel biomarkers for MF at the tumor stage, a genomic mapping of 41 cutaneous lymphoma biopsies was used to explore for significant genes.

**Methods** The gene expression profiling datasets of MF were obtained from Gene Expression Omnibus database (GEO). Gene modules were simulated using Weighted Gene Co-expression Network Analysis (WGCNA) and the top soft-connected genes (hub genes) were filtrated with a threshold (0.5). Subsequently, module eigengenes were calculated and significant biological pathways were enriched based on the KEGG database.

**Results** Four genetic modules were simulated with 3263 genes collected from the whole genomic profile based on cutoff values. Significant diseases genetic terminologies associated with tumor stage MF were found in black module. Subsequently, 13 hub genes including *CFLAR*, *GCNT2*, *IFNG*, *IL17A*, *IL22*, *MIP*, *PLCG1*, *PTH*, *PTPN6*, *REG1A*, *SNAP25*, *SUPT7L*, and *TP63* were shown to be related to cutaneous T-cell lymphoma (CTCL) and adult T-cell Lymphoma/leukemia (ATLL).

**Conclusion** In summary, in addition to the reported genes (*IL17F*, *PLCG1*, *IFNG*, and *PTH*) in CTCL/ATLL, the other high instable genes may serve as novel biomarkers for the regulation of the biological processes and molecular mechanisms of CTLT (MF/SS).

PO04-035

### Hydroa vacciniforme-like lymphoma: a case report

Rong-Yi Chen, Hui-Zhi Yang, Wei Wu

Affiliated Hospital of Guangdong Medical University

Hydroa vacciniforme-like lymphoma is a cutaneous cytotoxic T-cell or natural killer cell originated lymphoma occurring in children and adolescents. We would like to report a rare case of a 19-year-old Asian male who had a 3-month history of lesions including erythema, vesicles, ulceration, crusting and smallpox-like scar on his face, neck and all four arms and legs. EBV-DNA level was positive. Immunohistochemistry showed CD2 (+++), CD3 (+++), CD4 (+), CD5 (++), CD7 (+), CD8 (±), CD20 (-), CD30 (-), CD56 (+), ki67 (30% +), Gr-B (+++). The patient showed significant improvement in clinical symptoms after being treated with IFN-α.

PO04-038

**Clinical and pathological analysis of 10 patients with microcystic adnexal carcinoma**

Ying Zhang, Hao Chen, Wei Zhang, Xiu-Lian Xu, Yi-Qun Jiang, Xue-Si Zeng, Jian-Fang Sun

*Institute of Dermatology, Chinese Academy of Medical Sciences and Peking Union Medical College***Objective** To investigate the diagnosis and differential diagnosis of microcystic adnexal carcinoma (MAC).**Methods** Totally, 10 patients with MAC visiting the Institute of Dermatology, Chinese Academy of Medical Sciences from 2003 to 2017 were enrolled. The clinical manifestations, histopathological and immunohistochemical features, treatment and prognosis of MAC were retrospectively reviewed.**Results** The average age at onset of MAC was  $51.7 \pm 10.2$  years in the 10 patients, with a mean disease duration of 5 years. The lesions all occurred on the face, and 6 cases located at the nasolabial regions. The lesions typically presented as solitary plaque or nodule in all cases, and arisen ulcer in 4 cases. Histologically, it was characterized by consisting of epithelial nests or cords, keratinous cysts and tubular structures and enveloped by desmoplastic stroma, and 6 cases showed perineural invasion, mitotic figures and cytologic atypia were rare. Immunohistochemical staining showed that epithelial and keratinous cysts were positive for cytokeratin (CK), and tubular structures positive for carcinoembryonic antigen (CEA) and epithelial membrane antigen (EMA). One of the patients was recurrent at the primary site 13 years after resection of skin lesion, and no distant metastasis or death occurred in these patients.**Conclusions** MAC is rare and easily misdiagnosed, and can be confirmed based on histopathological and immunohistochemical findings. Local recurrence of MAC is common, but lymphatic and distant metastases are rare.

PO04-039

**Two cases of metastatic breast cancer with special skin manifestations**

Yan-Yan Feng

*People's Hospital of Xinjiang, Uygur Autonomous Region***Objective** To report 2 cases of metastatic breast cancer with special clinical manifestations.**Methods** The diagnosis was confirmed by histopathology, immunohistochemistry and imaging examination.**Results** Case 1, a case of breast cancer with "triple negative cancer" developed local skin blister necrosis in the distal skin (toe), and finally confirmed distant skin metastasis. The second case, painless vesicles, herpes collicularis and inflammatory erythema appeared in the left anterior chest, armpit and posterior part of the disease in the early stage of the disease, "herpes zoster" was misdiagnosed clinically. After that, the disease progressed rapidly, with various skin metastasis patterns, such as armored hardening, and so on. While imaging examination and clinical physical examination revealed that primary tumor was located in the right breast and the skin manifestation of left breast may be metastasis.**Conclusion** The special clinical manifestations of 2 patients might be associated with special biological and clinicopathological features resulting from the deletion of ER, PR and Her-2 phenotypes.

PO04-040

**Rosai-Dorfman disease presenting with auricular enlargement as the first manifestation**

Lu Gan, Wan-Ting Yu, Jian-Fang Sun, Yi-Qun Jiang, Wei-Da Liu

*Institute of Dermatology, Chinese Academy of Medical Sciences and Peking Union Medical College***Objective** To improve understanding of the clinical and histopathological features of Rosai-Dorfman disease.**Methods** We analyzed the clinical and histopathological features of both sites of our case presenting with unilateral auricular enlargement for 10 months and a plaque and overlying nodules of the back for 1 month.**Results** The biopsy specimen from the affected area of the ear showed dermal inflammatory infiltration of plasma cells, lymphocytes, and histiocytes. Meanwhile pathology from the lesion on the back showed sheets of histiocytes

with abundant and foamy cytoplasm, within some of which intact lymphocytes and plasma cells were engulfed, which was called emperipolesis. Aggregates of plasma cells along with numerous infiltrations of lymphocytes were also remarkable. Thus related immunohistochemical staining of both lesions were strongly suggested. It revealed that the histiocytes were strongly positive for CD68 and S100 protein, and negative for CD1a. Thus, the diagnosis of CRDD was confirmed.

**Conclusion** As to our case, the manifestation of lesions on his back and pathological characteristics of both sites helped us lead to the final diagnosis. Of note, the presence of foamy histiocytes with emperipolesis may be variable in different cases, and plasma cells could be strong indication of RDD in this condition. In conclusion, despite distinctive histological features, the clinical diagnosis of CRDD is sometimes difficult because its clinical presentation varies and may be nonspecific without lymphadenopathy. Enlargement of the ear is a rare indication of CRDD. Correlation of the clinicopathologic features and close follow-up to search for other lesions is critical.

PO04-041

### Lymphomatoid papulosis type D: Case reports and literature review

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2. Guangzhou KingMed Dignostics

**Objective** To report three cases of lymphomatoid papulosis (LyP) type D.

**Methods** Collecting the clinical pictures, histopathological results and immunohistochemical results, and then making a review.

**Results** It was a new reported morphological subtype of LyP recently. Type D LyP manifested marked epidermotropism and showed co-expression of CD8 and CD30.

**Conclusions** It is necessary to differentiate Type D LyP from other benign and malignant diseases which have similar clinical and histopathological features. Awareness of this entity can lead to rapid diagnosis of this disease.

PO04-042

### Cutaneous schwannoma on the back with a targetoid clinical feature

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Department of Dermatology, Chinese PLA General Hospital

Cutaneous schwannoma, also known as cutaneous neurilemoma, is a benign neoplasm derived from Schwann cells. Clinically, it often presents as a solitary papule, nodule or plaque, with or without peduncle along the course of peripheral nerves, arising on head, ear, neck, abdomen or the limbs, etc. However, the targetoid lesion is rarely reported. Herein, we reported a 48-year-old, otherwise healthy woman presented with a slowly enlarging, intermittently painful lesion with one year history. Physical examination revealed a targetoid lesion consisting of a brown nodular center surrounded by a paler, intermediate area and a peripheral dusky halo. The lesion measured about 2.0 × 1.5 cm, locating on the upper back. Under the center lesion, a round nodule without adhesion was palpable and the intermediate area was soft with hernial sac feeling. Histological findings confirmed the diagnosis of cutaneous schwannoma. Additionally, focally, some sweat glands were entrapped in the tumor. Immunohistochemistry through serial sections indicated that tumor cells were strongly positive for S100. All of the glandular epithelium stained with epithelial membrane antigen (EMA) and cytokeratin (CK) 8/18, but not with S-100 protein. Myoepithelial cell layers surrounding each gland labeled for smooth muscle actin (SMA). There was no atypia, mitotic activity, hemorrhage or necrosis. No other lesions have been found and no recurrence was noted after 6 months. She denied any other systemic diseases. Family history was also negative. Based on clinical and histological findings, the patient was diagnosed with cutaneous schwannoma.

PO04-043

**One case of primary cutaneous follicle center lymphoma**Min Hang<sup>1</sup>, Feng-Mei Zhao<sup>1</sup>, Song Zheng<sup>2</sup>, Bo Li<sup>2</sup>, Long Geng<sup>2</sup>*1. Department of Dermatology and Venereology, General Hospital of Fushun Mining Bureau**2. Department of Dermatology and Venereology, The First Hospital of China Medical University*

A 76-year-old woman initially presented with a 4–5 month history of the red papule on left temple with no obvious cause. The skin lesions were not pain and itch. The similar lesions gradually appeared nearby the edge of papule. There were multiple, millimetric, hard, red, skin-colored papules and nodules with a cluster pattern on the left temple. The patient was diagnosed to have primary cutaneous follicle center lymphoma (PCFCL).

PO04-044

**A case of generalized eruptive histiocytoma**

Jian-Xin Xia

*The Second Hospital of Jinlin University*

A 53-year-old woman presented with reddish-brown papules on the trunk and extremities with no adverse complaint for more than 20 days. The lesions originally began with military, red-brown papules on the right forearm, and then gradually spread to the trunk and limbs. Dermatologic examination showed red-brown papules and nodules on the trunk and limbs of military to sorghum grain size. The lesion temperature was generally normal, and tenderness was not present. Histiopathology revealed dense histiocyte-like cells infiltration around the blood vessels and between the collagen fibers throughout the superficial dermis, along with a few lymphocytes infiltration. The histiocyte-like infiltrates were positive for CD68, LCA and less than 5% expression of ki67, but negative for CD1a and S100. According to the above findings, the patient was diagnosed as generalized eruptive histiocytoma (GEH). Treatment with oral Tripterygium Glucosides and topical propionate ointment for 2 months resulted in completely remission, leaving only a little pigmentation.

PO04-045

**A case of hepatocellular carcinoma diagnosed as facial cutaneous metastasis survives for 18 months**

Jing-Xin Zeng, Xi-Bao Zhang, Quan Luo, Hui-Lan Zhu

*Guangzhou Institute of Dermatology*

Cutaneous metastases from hepatocellular carcinoma (HCC) is uncommon, accounting for less than 0.8% of all known cutaneous metastases and occurring in 2.7–3.4% of HCCs. Hepatocellular carcinoma is a very rare source of skin involvement (with less than 300 such cases worldwide over the past decade) and presents with a protean morphology. Most of which were diagnosed histologically on excised lesions, it can only be expected that diagnosis made on cytological features alone would be challenging. We would like to report a case of long survival of hepatocellular carcinoma as an instance of nasal cutaneous metastasis which was diagnosed based on cytological features and confirmed by Hepocyte and Arginase-1 immunopositivity of cell block material. A 66-year-old man with hepatocellular carcinoma for 17 years developed nasal cutaneous metastasis by blood circulation, which in the skin showed as a hemorrhagic nodule. We analyzed 22 cases from the literature and presented a practical review of the subject.

PO04-046

**A case of multiple clear cell acanthoma**

Sha Zhou, Jian-Jun Qiao, Juan Bai, Yin-Hua Wu, Yun-Lei Pan, Si-Ting Zheng, Hong Fang

*The First Affiliated Hospital, College of Medicine, Zhejiang University*

A 54-year-old Chinese woman presented to our department with multiple itching erythematous to brown rounded papules and papule-nodules and irregular plaques on the perineal. No abnormal symptoms were described by the patient except for pruritus. The lesions started 7 years previously and gradually increased in number and size. There presented more than 20 lesions with the long axis of 5 mm to 50 mm. The papules were rounded, rufous or brownish red and sharply circumscribed, with a diameter. The plaques presented with irregular shape, pink or reddish colour, sometimes with a peripheral scaling collarette or slightly moist surface. Clinical examination did not reveal any systemic abnormalities. There was no history of trauma or insect bite. An incisional skin biopsy from a plaque on her left inguina was performed. Histologically the specimen revealed a psoriasiform pattern with papillomatosis. Acanthosis, hyperkeratosis, parakeratosis, and neutrophils in the epidermis and inflammatory cells infiltration and blood vessels dilation in the upper dermis were seen. Clear cytoplasm was noted in the epidermis and no nuclear division was recognized. As for the immunohistochemically study, those clear cells showed abundant cytoplasmic glycogen by period acid-Schiff staining. High molecular weight cytokeratins CK34βE12 and CK 5/6 presented intensely positive in almost all keratinocytes. EMA was also positive, while CK20 and CEA were negative in the keratinocytes. Taking together, a diagnosis of multiple clear cell acanthoma (CCA) was made.

PO04-047

**Skin metastasis of breast carcinoma a case report**

Jun-Qin Liang, Wen-Jing Chen

*Department of Dermatology, People's Hospital of Xinjiang Uygur Autonomous Region*

Metastatic carcinoma of the skin is clinically uncommon, indicating that carcinomas of viscera or other organs invade the skin through lymph-vessel, vascular spread, direct expansion or other routes. This study reported a case suffering from skin metastasis of breast carcinoma. A 42-year-old female patient manifested 15 × 15 cm<sup>2</sup> and 10 × 10 cm<sup>2</sup> cauliflower-like masses on the left neck, chest, and shoulder, respectively, accompanied by bleeding, purulent exudate, and malodor. The histopathological examination of the skin lesions confirmed: parakeratosis with abscess of neutrophils, acanthosis, a regular downward extension of skin process, perivascular lymphocytic infiltration in the upper dermis, and nested or trabecular infiltrative growth of a larger amount of plasmacytoid cells in the middle and deep dermis. Therefore, the patient was diagnosed with metastatic carcinoma of the skin.

PO04-050

**A case of mycosis fungoides in late adolescent**

Cai-Xia TU, Xiu-Hua Sun, Chao Yu, Xin-Di Mu

*The Second Affiliated Hospital of Dalian Medical University*

A 29-year-old female presented with itching erythema or plaques on trunk and limbs for 4 years and progressive aggravation for 4 months. It was diagnosed as dermatitis in other hospital. There were many patches of infiltrating erythema and plaques with different sizes on face, neck, trunk and limbs when she was admitted to our hospital. Histopathological examination taken from the plaque showed quantities of small to medium sized lymphocytes with irregular or partly gyrus-like nuclei infiltrating into the dermal papilla and superficial dermis while it was not obvious in the epidermis. Immunohistochemistry showed that most lymphocytes infiltrating into the dermis were CD3 (+), CD5 (+), CD2 (+), CD4 (+), CD7 (+) and Ki-67 index was about 10–20%. According to the features of skin lesions

and histopathology, the patient was diagnosed as mycosis fungoides (stage IV A), and treatment with radiotherapy and chemotherapy led to slightly improvement.

PO04-051

### **A subungual squamous cell carcinoma of the thumb clinically mimicking a glomus tumour**

Xiu-Fen zheng<sup>1</sup>, Ren-Liang He<sup>2</sup>

1. *Shunde Hospital of Southern Medical University*

2. *Dermatology Hospital of Southern Medical University*

Subungual tumors are rare in general. However, squamous cell carcinoma (SCC) is the most frequent tumor of the nail. Its diagnosis is often missed or delayed because the clinical features are multiple and subungual lesions may be particularly difficult to evaluate on physical examination. Moreover, it can mimic a range of other pathological conditions, such as fungal infection, posttraumatic dystrophy, or viral wart. Because of these factors, together with general lack of awareness of this disease among physicians, often lead to a delay in diagnosis. Here, we reported a case of subungual SCC, which was primitively misdiagnosed as a subungual glomus tumor in our outpatient dermatology.

PO04-052

### **Eccrine angiomatous hamartoma with plexiform vascular hyperplasia**

Qian Shang, Hong-Mei Zhou, Qiang Zhao, Song-Mei Geng

*Department of Dermatology, the Second Affiliated Hospital of Xi'an Jiaotong University*

This report investigated the clinical and histopathologic features of eccrine angiomatous hamartoma (EAH). A case of eccrine angiomatous hamartoma was presented by clinical manifestation, pathological characteristics and the curative effect after treatment, along with review of the literature. A 31-year-old female presented with a dark-red plaque on the right forearm flexion accompanying with hyperhidrosis and pain for 3 years, which gradually progressed in size. Dermatological examination revealed a dark-red infiltrated plaque of 16.0 cm × 10.0 cm in size with irregular borders on the right forearm flexion and local tenderness was obvious. Histopathology showed normal epidermis and proliferation of well-differentiated eccrine glands in the middle and deep dermis. Furthermore, plexiform vascular hyperplasia was also observed in the middle dermis. This disease should be differentiated from Tufted Angioma in clinical and pathological aspects. TA generally presents with a slow extending erythematous macule and it has a classical “cannon ball” like appearance of vascular tufts on histopathology, which shows clustered immature capillaries in the dermis surrounded with dilated lymphatic vessels. Surgical removal was difficult due to its large size. We took the treatment of Recombinant Human Interferon for subcutaneous injection and Timolol Maleate Eye Drops for external application by considering obvious vascular proliferation. After 4 months' observation, the lesion regressed gradually and become soft. The long-term effect should be evaluated further. EAH is a rare benign cutaneous hamartoma characterized by proliferation of mature eccrine structures and small blood vessels. Combination of clinical manifestations and histopathological changes is useful for diagnosis and differential diagnosis.

PO04-053

**Rosai-Dorfman disease with systemic multiple involvement: A case report.**

Jiang-Fan Yu, Bing-Si Tang, Ya-Qian Shi, Pu-Yu Zou, Gui-Ying Zhang, Rong Xiao

*The Second Xiangya Hospital of Central South University*

Rosai-Dorfman disease (RDD) is an uncommon benign non-Langerhans cell histiocytic disorder, typically with bilateral painless cervical lymphadenopathy. Extranodal disease was reported in 43% of patients, including skin, orbit, respiratory tract, central nervous system, and soft tissues. Ophthalmic involvement is rare, and multiple system involvement is more infrequent. The etiology of the disease is unknown, immune disorder due to cytokine over-expression (interleukin [IL]-6, IL-1b and tumor necrosis factor) has been considered the cause of RDD. Although it is a self-limited disease, the prognosis may be life-threatening if vital organs are involved. The efficacy of treatment is not clear yet. Here, we described a patient who suffered from multiple systems involvement, specific manifestations of macular involvement, bilateral ocular vasculitis, extensive body lesions and mediastinal lymph node enlargement. Consistent with the literature, his serum IL-6 and aqueous humor IL-6, IL-10 were both elevated. The biopsy displayed large histiocytes positively staining for S-100 and CD68, negative for CD1a and immunohistochemical also showed IgG4 (+)/IgG (+) >40%. We have chosen oral glucocorticoid therapy. After one year follow-up, this patient achieved clinical remission, without recurrence. At the same time, we discussed the relationship between RDD and IgG4 related diseases.

PO04-054

**Influence of acitretin on the growth and apoptosis of fibroblasts of keloid**

Da-Wei Zhang

*The Second People's Hospital of Chengdu*

**Objective** To investigate the effect of Acitretin on the growth and apoptosis of keloid fibroblast.

**Methods** Acitretin was put into the experimental group (keloid fibroblasts) and control group (normal skin fibroblasts), respectively (the concentration was  $10^{-7}$ ,  $10^{-6}$ ,  $10^{-5}$  mol/L). Cell proliferation was detected by CCK8 at 24 h, 48 h and 72 h. Then the Acitretin was put into the two groups (the concentration was  $10^{-5}$  mol/L), and the cell cycle and apoptosis were detected with flow cytometry at 24 h, 48 h and 72 h.

**Results** After 24 h, compared with the NSFB, the growth of keloid fibroblasts (KFB) dealt with Acitretin (the concentration were  $10^{-7}$ ,  $10^{-6}$ ,  $10^{-5}$  mol/L) was significantly inhibited; compared with the NSFB which was not dealt with Acitretin, the growth of NSFB dealt with Acitretin (the concentration was  $10^{-5}$  mol/L) was significantly inhibited; compared with the KFB which was not dealt with Acitretin, the growth of KFB dealt with Acitretin (the concentration was  $10^{-5}$  mol/L) had been significantly inhibited. After 48h, the growth of KFB dealt with Acitretin(the concentration was  $10^{-5}$  mol/L) had been significantly inhibited; the growth of NSFB dealt with Acitretin (the concentration was  $10^{-5}$  mol/L) had been significantly inhibited; the growth of KFB dealt with Acitretin (the concentration was  $10^{-5}$  mol/L) had been significantly inhibited. After 72 h, the growth of KFB dealt with Acitretin (the concentration was  $10^{-5}$  mol/L) had been significantly inhibited; the growth of KFB dealt with Acitretin (the concentration was  $10^{-5}$  mol/L) had been significantly inhibited. After 24 h, compared with the NSFB, the proportion of G1 phase cells of KFP dealt with the Acitretin (the concentration was  $10^{-5}$  mol/L) had no significant difference change. After 48 h and 72 h, compared with the NSFB, the proportion of G1 phase cells of KFP dealt with the Acitretin (the concentration was  $10^{-5}$  mol/L) increased significantly. That is, cell arrest in the G1 phase. After 24 h, compared with the NSFB, the KFP dealt with the Acitretin (the concentration was  $10^{-5}$  mol/L) had no significant change of apoptosis level. After 48 h and 72 h, the cell apoptosis level of the KFP dealt with the Acitretin (the concentration was  $10^{-5}$  mol/L) significantly increased.

**Conclusions** Keloid fibroblast activity could be inhibited by all levels of concentration of acitretin, and when the concentration was higher, the inhibition effect was stronger, and the difference was statistically significant. Compared with normal skin fibroblasts, the difference was statistically significant. After the two groups were dealt with Acitretin (the concentration was  $10^{-5}$  mol/L), the cell cycle was blocked in the G1 phase. The fibroblast of the test group showed obvious apoptosis, and with time going by, the apoptosis was more obvious, and the difference was

statistically significant. But the number of apoptotic cells in the control group decreased with the prolongation of time, and the difference was statistically significant.

PO04-055

### **Lymphomatoid papulosis with folliculotropism, eccrinotropism and neurotropism**

Wei Ba, Cheng-Xin Li

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**Objective** To report a case of Lymphomatoid papulosis (LyP) pathologically manifesting with folliculotropism, eccrinotropism and neurotropism by CD30+ atypical lymphocytes and discuss the potential practical and conceptual significance of this observation.

**Methods** Clinical data, histopathological examination, immunophenotype and TCR gene rearrangement were analyzed.

**Result** A 36-year-old male presented with an 11-month history of intermittent raised papules and nodules on his trunk and legs. During the process, he did not receive any treatment, and these lesions resolved spontaneously. Physical examination revealed a number of atrophic scars, with localized pigmentation on his left waist, left thigh and both knees. No lymphadenopathy was present. Evaluation of a biopsy specimen from the left waist demonstrated perivascular, interstitial and periadnexal infiltration of small lymphocytes and atypical mononuclear cells, along with scattered neutrophils and eosinophils. The atypical lymphocytes around the hair follicle, eccrine gland and neurofiber presented with varying degrees of infiltrates. The medium-to-large atypical lymphocytes were positive for CD3, CD4, MUM-1, and CD30 and negative for CD5, CD20, CD8, CD56, and CD68. PCR-based T-cell gene rearrangement studies performed on formalin-fixed, paraffin-embedded sections demonstrated a monoclonal population of T cells.

**Conclusion** Reviewing literatures, LyP with folliculotropism, eccrinotropism and neurotropism has never been reported. This case added to the experience of pathological features of LyP and highlighted the importance of clinicopathological correlation in distinguishing LyP from other lymphoproliferative diseases, such as MF and pseudolymphoma. Moreover, the case demonstrates the possible overlap between the histopathological findings of MF and LyP.

PO04-056

### **A misdiagnosed case of cutaneous Rosai-Dorfman disease**

Yi-Ming Wang

*NO.2 Renmin Hospital Chengdu*

The patient was female and 52 years old. A plaque at nasal tip was for 8 months, and was painless and not itching. Histopathology showed atrophy of stratum spinosum epidermidis, lymphocytes, histiocytes, neutrophil and plasmacyte infiltrate in dermis. Immunohistochemical staining for S-100 protein and CD68 were positive but negative for CD1a.

PO04-057

### **Clinical and pathological analysis of 19 mycosis fungoides**

Ling-Yi Zhao<sup>1</sup>, Hui Tang<sup>2</sup>

*1. No.2 Renmin Hospital Chengdu*

*2. Huashan Hospital Fudan University*

The clinical data of 19 patients with mycosis fungoides from Jan 2015 to Jan 2016 were analyzed retrospectively. The

mean age of onset and diagnosis were  $30.21 \pm 15.20$  years and  $41.16 \pm 14.36$  years. The mean interval from onset to diagnosis was 10.95 years. The lesions were all over the whole body in 94.74% patients. Pathological characteristics included epidermotropism (78.95%) and neoplastic T-lymphocytes (63.16%). Immunohistochemistry showed that the most of tumor cells were Th cells and a few cells were cytotoxic T cell. The 57.89% cases had been misdiagnosed. The treatment was effective for the early stage of MF.

PO04-058

### **Squamous cell carcinoma combined with basal cell carcinoma: A case report**

Yi Zhou

*No.2 Renmin Hospital Chengdu*

The patient is 89 years old, and has 1 years of ulceration on the left temporal and right nasal wing. There is no exception to the system check. Skin specialist examination: left temporal: skin lesion is a coin size ulcer, the boundary is not clear, the central depression, the surrounding slightly bulge, the surface covered with light brown crusts, touching the bleeding, pressure of purulent secretions. Right nasal alar: the skin lesion is about the size of the broad bean, the boundary is clear, the edge of the skin is levee, the central depression forms an erosive ulcer, and the surface can be seen with blood scab, and it touches the bleeding easily. No obvious abnormalities were found in blood and urine routine, chest X-ray and abdominal B ultrasound. Histopathological diagnosis of skin: squamous cell carcinoma combined with basal cell carcinoma.

PO04-059

### **A case report of blastic plasmacytoid dendritic cell neoplasm**

Yi-Ming Wang

*No.2 Renmin Hospital Chengdu*

The patient was male and 58 years old. One lump appeared on the left forearm 6 months ago. It became progressive severe one month ago. The lump was smooth and medium hard and its edge was distinct. Histopathology examination showed that atrophied epiderm and contorted nuclear lymphoid cells infiltrated derma and subcutaneous tissue. Immunohistochemical assessment showed that the lymphoid cells were  $CD4^+$ ,  $CD56^+$ ,  $CD123^+$ ,  $LCA^+$ ,  $CD20^-$ ,  $CD3\epsilon^-$ ,  $MPO^-$ ,  $CD117^-$ ,  $TdT^-$ ,  $CD2^-$ ,  $CD7^-$ ,  $CD30^-$ ,  $CD163^-$  and  $S-100^-$ . The positive rate of Ki67 was 25%. EBER1/2 was negative detected by *in situ* hybridization. There was no clone amplification peak in TCR- $\gamma$  gene rearrangement. Blastic plasmacytoid dendritic cell neoplasm was diagnosed based on the lesion and lymph node histopathological examination, immunohistochemical analysis and gene rearrangement. The patient finally gave up treatment.

PO04-061

### **Clinical and pathological analysis of arteriovenous hemangiomas in 13 cases**

Tian Wang, Ying Guo, Zhuang-Li Tang, Song-Mei Geng

*The Second Affiliated Hospital of Xi'an Jiaotong University*

**Objective** To investigate the clinical and pathological features, diagnosis, differential diagnosis and treatments of arteriovenous hemangioma (AVH).

**Methods** The 13 cases of arteriovenous hemangioma were obtained from the Second Affiliated Hospital of Xi'an Jiaotong University from June 2011 to October 2017. Tissue sections stained with hematoxylin and eosin were available in all lesions, while elastic stains were performed on 2 typical cases. And the clinical data, pathological analysis and treatments were reviewed.

**Results** The 10 lesions occurred in females and 3 in males. Ages ranged from 22 to 56 years. Lesions were red, brown or skin color papules or nodules. All cases were surgically removed. Pathological features showed multiple vascular channels resembling arteries and veins could be seen intermingled with each other throughout the connective tissue. The majority of the vascular channels didn't show evidence of an internal elastic lamina, indicating that the venous component predominates over the arterial. The structure of arteries included thickened walls, muscle layers and internal elastic lamina. Red blood cells within the vessels could be seen occasionally. And the walls of the veins could also be thickened without an internal elastic lamina. No calcifications or thrombi were appreciated. No recurrence was found.

**Conclusions** AVH is a rare, distinct, benign lesion that occurs commonly on the face. Its clinical manifestations are often not typical and difficult to identify. Pathological biopsy is the gold standard of diagnosis. Differential diagnosis includes pyogenic granulomas, spider nevus, venous lakes, and other types of hemangioma. Surgical excision would be a preferred treatment.

PO04-064

### Clinical and pathological study on mixed tumors of the skin

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**Objective** Mixed tumor of the skin (MTS) is a rare benign tumor of the sweat glands with a reported frequency of 0.01–0.098%. The objective of the study was to investigate clinicopathological and immunohistochemical features of mixed tumor of the skin.

**Methods** This was a retrospective study of 21 patients diagnosed with MTS at the Institute of Dermatology and Venereology of Sichuan Provincial People's Hospital from 1980 to 2016. Pathological sections of all cases were re-read and the diagnosis was verified.

**Results** There were 14 males (67%) and seven females (33%). MTS affected the face. The lesions were skin-colored or lightly red, with no subjective symptoms in most cases. Histopathologically, the tumors consisted of epithelial and interstitial components. The epithelium was mainly composed of cubic or polygonal cells, which can be seen within the tubule-like structures with bi-layer epithelium. The inner cells mainly expressed cytokeratin and other epithelial markers. The outer cells expressed epithelial and mesenchymal markers. The outer cells expressed S-100, P63, and glial fibrillary acidic protein. The tumors showed interstitial mucus-like and fibrosis changes and some parts had cartilage-like changes.

**Conclusion** Pathological diagnosis is particularly important because the clinical symptoms of MTS lack specificity.

PO04-065

### Effects of RNA interference targeting *hTERT* gene on the proliferation of the human malignant melanoma cell line A375

Xiao-Jing Kang, Zulihumaer Mosha, Li Chai, Juan Zhao, Ting-Ting Li, Hong-Juan Wang

*Xinjiang Uygur Autonomous Region People's Hospital*

**Objective** The *hTERT* gene was found to play an important role in the occurrence, development and prognosis of melanoma and it may become a new early diagnosis mark and therapy target of melanoma. But the *hTERT* gene silencing model research is very rare at home and abroad. We optimized experiential conditions for transfecting human malignant melanoma cell line A375 with *hTERT*-specific siRNA for establishing the *hTERT* gene silencing model, and further researched the targeted silencing on the proliferation of A375 cells.

**Methods** A375 cells were cultured *in vitro* and identified with cell STR typing. Specific siRNAs with green fluorescent labeling at different concentrations of 0, 5.0, 15.0 and 35.0 nmol/L were transfected into A375 cells by HiPerfect at different volumes of 1.5, 3 and 4.5  $\mu$ l. The best type were selected by fluorescence microscopy. Four *hTERT*-siRNAs including *hTERT*-siRNA-203, *hTERT*-siRNA-210, *hTERT*-siRNA-217 and *hTERT*-siRNA-224 were

constructed and transfected into A375 cells separately at the most optimal transfection condition, and the total mRNA were extracted after 24-h treatment. The qPCR was conducted to select the most specific hTERT-siRNA, MTT assay to evaluate cell proliferation.

**Results** The transfection efficiency of 5 nmol/L siRNA and 3  $\mu$ l Hiperfect group were significantly higher than other groups (all  $P < 0.05$ ). The *hTERT* mRNA expression of *hTERT*-siRNA-203 was the lowest (all  $P < 0.05$ ), and the transfection efficiency was the best. The cell proliferation inhibition rates at 72 h were the highest respectively in *hTERT*-siRNA-203 group, statistically different from those in the negative control group and blank control group (all  $P < 0.01$ ).

**Conclusion** The *hTERT* gene silencing model is successfully established, and it can specifically down-regulate the expressions of *hTERT* mRNA, inhibit cellular proliferation of A375 cells.

PO04-066

### Two cases of primary osteoma cutis occurring in children

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We reported two cases of primary osteoma cutis (POC) in children. The lesions were all located in legs, presented with hard nodules, covered by normal or light-red skin. The histopathology showed well-formed spicules of bone in the dermis. They were classified as primary osteoma cutis because there was no pre-existing lesion.

PO04-067

### Paget's disease of scrotum: Three cases report

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Case 1: A 73-year old male was admitted to hospital with history of scrotal erythematous lesion for 2 years. The lesion was severe pruritic and gradually enlarging, which was diagnosed as "eczema-like carcinoma" at a local hospital. Physical examination showed a superficial, erythematous, partially eroded, oozing plaque, with areas of crusts and scales in the scrotum. The enlarged lymph nodes were palpated in the axillary lymph nodes and bilateral inguinal region. Auxiliary examination: urinary protein +/-, urobilinogen 1+; HIV+, hepatitis C +, syphilis antibody positive; liver and kidney function: albumin 29.6 g/L, total bile acid 11.2  $\mu$ mol/L; blood routine: red blood cells  $3.22 \times 10^{12}/L$ , hemoglobin  $10^5$  g/L. The lesion was resected surgically with a resection margin of approximately 2 cm. After resection, the flap of the thigh root was transferred to the wound. Postoperative pathology showed scrotal mucinous adenocarcinoma and paget's disease. After the dressing change, she was discharged 12 days later. Continued follow-up after discharge, and second surgery was performed after January.

Case 2: An 18-year-old girl was referred to our department with a 3-year history of erythematous nodules, accompanied with severer pruritus. Biopsy at the external hospital pathological examination showed scrotal skin paget's disease, involving the hair follicles, near the ends of the cutting edge, the base margin was negative. In our hospital, photodynamic therapy of hydrochloric acid valerate was not tolerable, and it was improved after local anesthesia. Dermatology examination showed that skin lesion was located on the scrotum with a diameter of about 10 cm. It was diagnosed as scrotum paget's disease. The treatments of the disease were PDT treatment, topical use of Imiquimod cream, calcipotriol betamethasone ointment topical.

Case 3: A 75-year-old male presented with severe erythema and scales on the scrotal prepuce for 4 years, including severe itching and the lesion gradually enlarging to form exudation and scales. The effect is not good with eczema treatment in local clinic. Physical examination showed that scrotal prepuce was on the basis of erythematous scales with an unclear boundary. The past history included coronary atherosclerotic heart disease, interstitial pneumonia, osteoarthritis, osteoporosis, deep vein thrombosis of the lower extremities. Surgical resection and postoperative pathological findings: combined scrotal immunohistochemistry and extramural paget's disease. Immunohistochemistry Results CK (AE1/AE3) +, ER+++ , PR-, CEA (Mono) +++, CDX2-, Ki-67 30%, P53 individual+, CK7+++ , S-100-, HMB45-.

PO04-068

**Natural killer/T-cell lymphoma with hemophagocytic syndrome: A case report**

Shuo-Shuo Liu, Jian-Zhong Zhang

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We reported an 18-year-old male who in the beginning presented with a single ulcer in the thigh, which developing rapidly and became multiple lesions accompanied with hemophagocytic syndrome within 4 months duration. Biopsy was taken twice. The first biopsy of the lesion suggested bacterial infections, while the second result revealed NK/T-cell lymphoma, which in this case was described as extranodal NK/T-cell lymphoma-nasal type by the WHO-EORTC classification for cutaneous Lymphomas. An 18-year-old male was admitted to Department of Dermatology 15 months ago, presenting with a single ulcer in the left thigh, without any subjective symptoms or positive systemic signs. The primary lesion was a dark-red nodule, fixed and hard. The nodule was gradually enlarged, with black scabs on its top. When the black scabs fell off, the ulceration beneath was exposed and became larger and deeper. Two months later, the right thigh appeared a similar nodule. The histopathological examination was taken the first time, which showed mixed lymphocyte infiltration, and the bacterial culture revealed MSSA infection. Anti-bacterial therapy was given immediately, but there was no improvement. The histopathological examination was taken the second time. This time, the result showed an infiltration of small sized lymphoid cells along the dermoepidermal junction and infiltrated blood vessels with fibrinoid change. Immunohistochemical staining with markers including CD3, CD56, and CD43 were positive. *In situ* hybridization for EBV-encoded early small RNAs (EBER), T-cell intercellular antigen and GranzymeB staining showed positive results, while immunophenotyping for CD20, CD30, CD68, and CD123 were negative. Put together, the histopathological and immunohistochemical findings lead to natural killer/T-cell lymphoma. By this time, the patient presented with high fever and fatigue. The positron emission tomography (PET) revealed hypermetabolic lesions involving the right nasal cavity, which demonstrated the nasal involvement of the NK/T-cell lymphoma. Hemophagocytic cells can be seen by bone marrow puncture. By now, the patient had been treated with two cycles of the SMILE regimen, followed with cycles of GEMOX-L regimen, and is still in close follow-up.

PO04-069

**Solitary Eccrine Syringofibroadenoma of dorsum manus**

Pei-Mei Zhou

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Eccrine syringofibroadenoma (ESFA) is a rare benign tumor of eccrine ductal adnexal. We reported a case of eccrine syringofibroadenoma of a 50-year-old yellow woman presenting with a papule on the left dorsum manus for 3 months, occasionally bleeding after scratching. Histopathology showed that thin epithelial cords derived from epidermis intertwined each other. The immunohistochemical markers of endothelial membrane antigen and PAS staining showed positive at the edge of small lumen of the tumor. A diagnosis of eccrine syringofibroadenoma was made.

PO04-070

**Trichofolliculoma: A clinicopathological analysis of nine cases**

Qing-Yan Li, Li-Hong Zhao, Song-Mei Geng

*Department of Dermatology, Second Affiliated Hospital of Xi'an Jiaotong University***Objective** To characterize clinicopathologic features of trichofolliculoma.**Methods** Clinicopathologic features from nine cases of trichofolliculoma were retrospectively analyzed.**Results** Nine cases of trichofolliculoma were included in this study. There were eight females and one male, with a median age of 58 years. The skin lesions were mostly on the face (7 cases), especially the nose (3 cases). All the skin lesions manifested as a single papule or nodule. Among them, two cases had white soft bristles out of the lesion

center. Pathologically, the distorting and expanding primary hair follicles connected with the secondary hair follicles radially. Primary hair follicles are often hyperkeratotic and may have keratin or hair shafts. The secondary hair follicles can be at different stages of differentiation. Secondary hair follicles can be seen the inner hair root sheath, outer hair root sheath, hair shaft, and hair papillae. The secondary hair follicles are connected by epithelial cell cords. The fibrous tissue around the tumor can be seen. Infiltration of inflammatory cells can be seen. Spindle cells were visible in the matrix.

**Conclusion** Trichofolliculoma have unique pathological changes.

PO04-071

### **SFRP5 inhibits the invasion and migration potential of melanoma cells through Wnt signal pathway**

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*The First Affiliated Hospital of Chongqing Medical University*

**Aim** Malignant melanoma is the most aggressive and lethal skin cancer. Wnt pathway plays important role in the initiation and development of melanoma. SFRP5, a regulator of Wnt signaling, has been reported to inhibit progression of some human cancers, such as gastric carcinoma and ovarian cancer. Here, we sought to explore the role of SFRP5 in melanoma.

**Methods** We used overexpression approach in melanoma cell lines. The expression of SFRP5 in human melanoma tissues and normal skin tissues was performed using immunohistochemistry. Gene expression was measured by qPCR, protein levels by western blot analysis, cell cycles and apoptosis by flow cytometry. Invasion and migration potential was detected by wound-healing assay and transwell assay.

**Results** In the present study, we found SFRP5 was notably downregulated in human melanoma tissues, compared to normal skin tissues. Overexpression of SFRP5 significantly suppressed A375 and GLL-19 cells invasion and migration through down-regulating the expression of MMP-2, MMP-9, N-cadherin and vimentin, whereas up-regulating E-cadherin expression. In addition, SFRP5 suppressed both canonical and noncanonical Wnt pathways. However, there was no effect on the cell apoptosis and cell cycles by SFRP5 overexpression. Finally, in xenograft animal model, we demonstrated that SFRP5 led to inhibition of tumor growth and metastasis.

**Conclusions** In summary, these findings suggested that SFRP5 suppressed Wnt signaling and inhibited melanoma cells invasion and migration through the EMT program. It may be a novel potential therapeutic target for therapy in melanoma.

PO04-072

### **Treatment of the ear giant keratoacanthoma with topical imiquimod**

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Keratoacanthoma (KA) is a benign epidermal neoplasma with rapid growth and spontaneous regression tendency. The aetiopathogenesis remains uncertain. For most cases, therapy including complete surgical excision was recommended for the tumor local destruction and good cosmetic results. We described a giant keratoacanthoma at the left anthelix, measuring about 3×3 cm, which was rare in previous reports. Considering the problematic anatomical location, topical imiquimod was given. In summary, we reported and added to the medical literatures a unique case of giant keratoacanthoma of anthelix with complete disease process, which was successfully treated with topical imiquimod.

PO04-073

**A case of perineal polypoid basal cell carcinoma and review of the literature**

Xue-Yan Yao, Yan Zhao, Guang-Dong Wen, Jian-Zhong Zhang, Cheng Zhou

*Peking University People's Hospital*

This was a case of a 47-year old Chinese male with a 0.5 cm × 0.8 cm perineal polypoid papule after fluent friction in 2 years duration which was then confirmed by histopathology to be basal cell carcinoma (BCC). It was very rare that BCC performed in such polypoid form and perineal location which reminded us to differentiate with condyloma acuminatum, and so on. Further more, we summarized from 28 cases of polypoid BCC that this type might affect more females, have higher morbidity in Asian people, occur on relatively unexposed areas and perform non-pigmented appearance by review of literature.

PO04-074

**Implication of glutathione peroxidase 3 expression in pathogenesis of melanoma**

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*Yanbian University Hospital*

Glutathione peroxidase 3 (GPX3), as a crucial antioxidant enzyme, is known as a possible tumor suppressor gene in many type of cancers. In the previous study, we found that promoter hypermethylation of GPX3 and its repression are present in melanoma tissues. In the present study, we further investigated the influence of GPX3 expression on biological behavior of melanoma cells both *in vitro* and *in vivo*. We found that knockdown of GPX3 expression in melanoma cell lines can attenuates proliferation, motility, invasion, and tumorigenic activity *in vitro*. Moreover, both tumorigenic- and angiogenic-activity of melanoma cells were also reduced by GPX3 knockdown *in vivo*. The results suggested that GPX3 expression might have critical implications in melanoma pathogenesis, and the underlying molecular mechanism was need to further investigation.

PO04-078

**Multiple keratoacanthoma centrifugum marginatum: A case report and systemic literature reivew**

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**Objective** To systemically summarize the characteristics of a rare disease: multiple keratoacanthoma centrifugum marginatum (KCM), its treatment and prognosis.

**Methods** “Keratoacanthoma Centrifugum Marginatum” was searched on Pubmed, Embase, Cochrane, and CKNI (China National Knowledge Infrastructure). Eight available articles were finally enrolled as case reports of multiple KCM.

**Results** Multiple KCM has a predilection for male. The male/female proportion is approximately 4: 1. It mostly occurs on limbs, while lesions on face and buttock have also been reported. Both oral and topical tretinoin/isotretinoin treatment for multiple KCM are proved effective. In patients unresponsive to tretinoin treatment, methotrexate and prednisone can be used as second-line treatment.

**Conclusion** Multiple KCM has its characteristic clinical and pathological features. Although it progresses rapidly without treatment, proper treatment of this disease leads to favorable outcome.

PO04-080

**Study of clinical features, treatment and miRNA expression characteristics of unilesional mycosis fungoides**

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**Objective** To study the clinical features, treatment and prognosis of unilesional mycosis fungoides (UMF), and to summarize the best treatment strategy; to explore the expression characteristics of miRNAs in UMF skin lesions to provide reference for the early diagnosis of the disease, which may be easily confused with benign inflammatory dermatosis.

**Methods** Sixteen cases of UMF were collected in our department from 2002 to 2017. Clinical data were analyzed to summarize the pathogenic features and the best treatment strategy. The FFPE specimens were utilized to analyze the miRNA expression characteristics of UMF patients.

**Results** Except for the presence of a solitary skin lesion, the types of skin lesions and histopathological features of most UMF patients were basically consistent with classic MF. Most cases were firstly treated by phototherapy, with a complete remission rate of 82%. The expression of miRNA-155-5p, miRNA-200b-3p and miRNA-203a-3p between the UMF group and the benign inflammatory dermatosis group were significantly different ( $P < 0.05$ ).

**Conclusion** UMF is a rare subtype of MF and is clinically manifested as a solitary skin lesion, which is generally less than 5% of the body surface area (BSA). The first choice of treatment of UMF in our department is phototherapy, with CR rate beyond 80% and high acceptance rates of the patients. The differential expression of miRNA-155-5p, miRNA-200b-3p and miRNA-203a-3p can provide important reference for the early differential diagnosis of UMF and benign inflammatory dermatosis.

PO04-081

**Three cases report of blastic plasmacytoid dendritic cell neoplasm**

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*The Second Hospital of Jilin University*

We aimed to analyze the clinicopathologic manifestations of blastic plasmacytoid dendritic cell neoplasm (BPDCN). Three cases of BPDCN were reported. Case 1: An 85-year-old woman presented with purple nodules on the whole body without self-conscious symptoms for two months. Case 2: A 33-year-old woman presented with a purplish red mass on the abdomen for three months. The lesions were hard texture and tenderness. Case 3: A 27-year-old man presented with erythematous nodules on the upper limb and trunk for one and half year. The lesions were hard texture. The histopathologic examination showed diffuse infiltration of small/medium-sized immature cells in the dermis layer, with non-infiltration zone between dermis and epidermis. The morphology of tumor cells was atypical with larger indented hyperchromatic nuclei and scant cytoplasm. Under immunohistochemical staining, the neoplastic cells exhibited positive for CD4, CD56, CD123 and CD31, as well as negative for CD3, CD20, CD117, MPO and EBER. BPDCN shows a predilection for skin, followed by lymph nodes, bone marrow and peripheral blood. The skin lesions are usually presented as solitary or multiple, purple red or violaceous, plaques or nodules. It is difficult to be diagnosed due to the overlap of immunophenotypic features with other cancers. The immunohistochemical features for the better diagnosis is the expression of CD4, CD31, CD56, CD123, and the lack of CD3, CD20, CD117, MPO, EBER.

PO04-082

**Giant ulcer type basal cell carcinoma**

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A male patient, 52 years old, was admitted to hospital because of “left cheek nodule for more than 20 years and rupture for more than 10 years”. Body examination: The left head was seen with a diameter of about 20 cm-type round ulcer swelling, and the edges were visible edema erythema, its large black callus, necrotic tissue, the base was uneven, could be seen more pus and blood secretion exudation, smell and stench. Left upper and lower eyelids, orbicularis oculi muscle, eyebrow, conjunctiva, sclera defect, and only miliary grain size blurred pupil, only left a sense of light. Left ear lobe and upper left auricle defect. Skin pathology: Tumor clumps are located in the dermis, partially connected to the epidermis, composed of basal-like cells, surrounded by palisade-like arrangement, visible contraction gap, and basal cell carcinoma. Final diagnosis: giant ulcer type basal cell carcinoma. Treatment: the doctor of radiotherapy thought that the focus of the patient was large and it was difficult to fix in the treatment. It was suggested to consult the chemotherapy department and try the chemotherapy. According to NCCN guidelines, BCC with no indication of surgery and radiotherapy can be treated with vismodegib. However, because of economic constraints, BCC can not be treated further, and then discharged from hospital. Skin pathology: Tumor clumps were located in the dermis, partially connected to the epidermis, composed of basal-like cells, surrounded by palisade-like arrangement, visible contraction gap, basal cell carcinoma.

PO04-083

**Photodynamic combined operation for the treatment of skin tumors**

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Photodynamic Therapy (PDT) is now widely used in the treatment of skin tumors, especially in combination with surgery, and it can play a very good clinical therapeutic effect. A total of 205 cancer patients were enrolled, including basal cell carcinoma, squamous cell carcinoma, actinic Keratosis and other tumor patients. ALA was arranged in a 20% concentration solution and irradiated with 635 nm red light after 4 h. The energy density was 80–120 J/cm<sup>2</sup>, time 20–30 min, one times per one week, and 3–4 times for treatment. All the patients were followed up for at least half a year after treatment, and no recurrence was found. Photodynamic therapy is becoming more and more widely used in the treatment of skin tumor, and the photodynamic can be combined with the operation perfectly, and it has a good complementation effect.

PO04-084

**Eccrine angiokeratomatous hamartoma: A case report**

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Eccrine angiokeratomatous hamartoma is a rare vascular tumor with composed of abnormal proliferation of blood vessels and eccrine glands. On web literature search, only four previously documented cases of the lesions. We reported a case of 25-year-old male presenting with a pain lesion on his left leg since birth which has been gradually increasing in size. The lesion was excised. Histopathological features showed hyperkeratosis and acanthosis in epidermis, dilated capillaries and proliferation in upper dermis; mature blood vessels, mature sweat glands and sweat gland ducts composition of multiple hyperplastic lobular structures in deep dermis. Histological examination of the excised lesion confirmed the diagnosis.

PO04-085

**A case of simple lymphangioma**

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*The First Affiliated Hospital of Fujian Medical University*

A case of simple lymphangioma was reported. A 9-year-old male patient presented with a 4-month history of red papule on the left temporal. He felt no subjective symptoms. Physical examination showed a red-colored papule. The maximum diameter of the plaque was 1.2 centimeters. No erosion and exudation were found. Pathology showed the slight keratinization of the epidermis, the thickness of the spinous layer was irregular, the intracellular and intercellular edema of the spinous layer was observed, and a small number of lymphocytes and neutrophils were infiltrated in the dermal papillary layer, more dilated lymphatic vessels could be found in dermal papilla. Immunohistochemical results revealed that the tumor cells were stained positive for D2-40, CD31 and CD34. Diagnosis: lymphangioma.

PO04-086

**A case of cutaneous mastocytoma**

Min Lin, Jin-wen Huang, Jing Zhang, Chao Ji, Bo Cheng

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A case of cutaneous mastocytoma was reported. A 4-month-old male patient presented with a 4-month history of red nodule on the back. He felt no subjective symptoms. Physical examination showed a red-colored nodule. The maximum diameter of the plaque was 1.7 centimeters. No erosion and exudation were found. A dense aggregation of middle cells in the dermis was demonstrated under a microscope. These cells were round and oval in shape with no significant atypia and mitosis. Immunohistochemical results revealed the tumor cells were stained positive for CD117. Purple metachromatic granules in the cells were demonstrated by toluidine blue stain. Diagnosis: cutaneous mastocytoma.

PO04-087

**First reported S-100 negative myxoid neurothekeoma in China: A case report and review of the literatures**

Jing Zhang, Ming-Kai Ji, Chun-Yan Guo, Chao Ji, Bo Cheng, Jin-Wen Huang

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Neurothekeoma is an infrequent, dermal benign tumor. Traditionally, it occurs in a myxoid, cellular and intermediate (mixed) variant. Here we described a 31-year-old female who had had a central-parietal, pink-colored, asymptomatic nodule for one more years. Histology showed a dermal sparse fusocellular-spindle or stellate cell constitute the lobular tumor, which containing abundant mucin, fibrous septum interval lobules. IHC was positive for NKI/C3, CD10 and negative for S100, CD68, CEA, EMA, AE1/AE3. Combined with clinical and large amounts of mucus ingredient, we still considered diagnosis of "S-100 negative myxoid neurothekeoma", and this case was first reported in China. Through the literatures review, we found that it was controversial with nerve sheath myxoma. Maybe this variant as a new subtype of neurothekeomas, or it belong to the nerve sheath myxoma.

PO04-088

**Eight cases of melanoma resection with the width of the cutting edge greater than 2 cm**

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**Objective** Melanoma, the most lethal type of skin cancers, has become the fastest growing tumor in all the malignant tumors in recent years with an annual growth rate of 3–5%. Compared with other common malignant tumors, there is an obvious gap between clinical diagnosis and standardized treatment of melanoma. We have accumulated 8 cases in clinical practice that were in conflict with the guidelines recommended for surgical treatment. We hoped to draw the attention of the CSCO Melanoma Expert Committee and be of reference to the updating of the guidelines for the future.

**Methods** Mapping the tumor boundary under the skin microscope: draw an edge of the tumor for these 8 patients with the help of the routine process before the operation. Determine the width of the cut margin: according to the thickness of the tumor in the pathological report, expand the margin of the tumor and determine the width of the margin of 2 cm. Fast operation: remove tumor to the basal layer along the definite margin, and send fast pathology to determine whether there are remaining tumor cell on the margin. Continuing expansion: of these 8 cases, melanoma cells were still found on the margin according to the fast pathological results. According to the rapid results, 1CM continued to expand at the corresponding margin. Second times enlargement and quick delivery: the second expansion specimens were sent for pathology, and the margins were reported clean.

**Results** The average width of the margin of these 8 cases of the melanoma operation was greater than that of the recommended 2 cm. After the expansion to 3 cm, the margin of the incision was fast, and the margin was clean without melanoma cells.

**Conclusions** The CSCO melanoma expert committee may be aware of whether the surgery cut edge for patients with partial melanoma is larger than the width of the 2cm recommended by the current guide.

PO04-089

**A case of diffuse of primary cutaneous diffuse large B-cell lymphoma, leg type**

Yu Guan, Chao Ji

*The First Affiliated Hospital of Fujian Medical University*

This was a case of subcutaneous nodules as initial presentation of primary cutaneous diffuse large B-cell lymphoma, leg type. A 78-year-old man presented with erythema and plaques of the left pre-tibial area. Pathological examination of left lower limb skin lesions: this case was characterized by diffuse, dense dermal infiltrates made up of a variable number of large cells, the nuclei were irregular, and the mitosis was visible. Immunohistochemical: CD3 (–), CD8 (–), CD20 (+), CD79 $\alpha$  (+), Bcl-2 (+), Bcl-6 (+), Ki-67 (95%), MUM-1 (–), CD10 (–), TIA (–), Kappa(+), Lambda (–). The diagnosis was primary cutaneous diffuse large B-cell lymphoma, leg type. Treatment was polychemotherapy in combination with the anti-CD20 antibody rituximab.

PO04-090

**A case of morpheaform basal cell carcinoma**

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*The 1st Affiliated Hospital of Fu Jian Medical University*

Morpheaform basal cell carcinoma (BCC) is a variant of BCC characterized by narrow strands and nests of basaloid cells with dense sclerotic stroma. Morpheaform BCC presents clinically as scar-like lesions that gradually expand. It

is usually deeply infiltrative by the time of the diagnosis. We reported the case of typical Morpheaform BCC on the nose in a 24-year-old female.

PO04-091

### **Inverted follicular keratosis with prominent clear cell changes: A rare case**

Jing Zhang, Chao Ji, Bo Cheng, Jin-Wen Huang, Meng-Ting Lin

*The First Affiliated Hospital of Fujian Medical University*

A 61-year-old woman presented with one occipital pink nodule which concerned her during 4 months. The nodule displayed characteristic clinical and microscopic features of 2×3×2 cm on biopsy. We could see erosion on the lesion's surface. In all specimens, classic lobulated, endophytic growth was present. Additionally, squamous eddies were present. Patchy, chronic inflammation was present in the dermis. However, a prominent, highly unusual feature was noted: diffuse cytoplasmic clearing of cells within the stratum spinosum with variable sparing of the stratum basale. No koilocytes were identified. The clear cells stained strongly for PAS. No fungal forms were identified. This case was presented to demonstrate a unique and striking example of clear cell change within an inverted follicular keratosis. No case has been reported in the world on this finding, which was rarely reported and demands close examination to exclude more aggressive neoplasms.

PO04-092

### **A case of urticaria pigmentosa limited to forehead**

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*Institute of Dermatology, Chinese Academy of Medical Sciences and Peking Union Medical College*

We reported a case of urticaria pigmentosa (UP) which was limited to forehead with asymptomatic clinical manifestation. This case highlighted the role of skin biopsy in diagnosis of UP. In this case of UP limited to forehead, we tended to support the hypothesis that mast cell precursors left bone marrow and homed to the vascularized neural crest ectoderm, and then happened a clonal activating mutation in c-KIT.

PO04-093

### **Rare type of Lymphomatoid papulosis on the nose: A case report and literature review**

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*The Second Hospital Affiliated to Xi'an Jiaotong University*

This report aimed to increased cognition of rare type of lymphomatoid papulosis. The clinical histopathological and immunohistochemistry staining data in one case of the type D lymphoma papulosis were analyzed and related literatures were reviewed. A 44-year-old man presented with an isolated papule on the nose for over six months. Neither familial nor personal history of disorders was recorded. Dermatologic examination revealed a round, 0.4-cm in diameter, firm, red isolated papule without erosion and scales on the right side of the nose. Histopathology: The lesion showed wedge-shaped, dense inflammatory cells infiltrated in dermis with epidermotropism and mild epidermis damage. The infiltration composed of predominated lymphocytes, and histological cells. Atypical lymphocytes were obvious with visible pathological mitotic figures. Immunohistochemical staining revealed CD3 (+), CD30 (+), CD8 (+), and CD56 (-). Diagnosis of type D lymphoma papulosis was made. Lymphomatoid papulosis (LyP) is defined as a chronic, recurrent, selfhealing papulonecrotic or papulonodular skin disease with histologic features suggestive of a (CD30-positive) malignant lymphoma. The lesions are polymorphism, appear in batches, and occur in the trunk and proximal extremities. LyP are pathologically divided into A-F five types. The type D of lyP is characterized by obvious CD8 (+) lymphocyte

aggressive epidermis. The prognosis of lyP is good and the purpose of the treatment is to control the rash and recurrence, including topical glucocorticoids, phototherapy, methotrexate, TNF- $\alpha$ , and CD30 monoclonal antibody. Our patient has undergone surgical excision and was followed up for one year without recurrence.

PO04-094

### **A chinese patient with multiple primary melanomas**

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The incidence rate in Asian population is much lower than that in Europe and USA. Asian patients are mostly acral melanoma and rarely multiple primary melanomas. This report aimed to report the case of multiple primary melanomas in Han. A healthy 50-year-old male presented with a 7-year lesion in the right chest and a 5-year lesion in the right temporal. The diagnosis of melanoma was confirmed by histologic examination. The invasion depth of the right chest tumor was about 0.22 mm, while the invasion depth of the right temporal tumor was about 0.58 mm. Immunohistochemistry showed that HMB45 and S100 found positive and 40% positive with Ki-67. Doppler ultrasound showed no enlargement with superficial lymph nodes. PET-CT showed no visceral involvement. Multiple primary melanomas in Han are very rare. Our findings highlighted the importance of a full skin examination and ongoing skin surveillance in patients diagnosed with melanoma.

PO04-095

### **Dermoscopic findings of pseudoxanthomatous mastocytosis localized on vulva**

Qiao-Fei Li

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Pseudoxanthomatous mastocytosis is a rare variety of diffuse cutaneous mastocytosis. Few studies have reported its dermoscopic features. We reported an 8-year-old girl who presented with skin-colored to yellowish papules and nodules on her vulva. Dermoscopy examination disclosed pigment stripes embracing hair follicles (which we termed as “spider foot sign”) on a pink background, as well as linear branched and reticular vascular patterns. The case was diagnosed as pseudoxanthomatous mastocytosis because histopathology examination revealed dense mast cells positively stained for CD117 infiltrating in the entire dermis. We assumed that the “spider foot sign” found in the present case, which was consistent with basal hyperpigmentation in histopathology, was a clue for diagnose pseudoxanthomatous mastocytosis.

PO04-096

### **A case of kissing nevus**

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Kissing nevus of the penis is a congenital melanocytic nevus that occurs on the dorsal or dorsolateral aspect of the glans and the inner surface of the prepuce. It is exceedingly rare. The lesions show characteristic mirror-image symmetry relative to the coronal sulcus. Desruelles *et al.* first reported a case of kissing nevus on the penis in 1998, and since then, only about 20 cases have been reported in the English language literature. Here we reported a cases of kissing nevus of the penis. A 23-year-old man presented to our clinic in January 2018 with two asymptomatic pigmented lesions on his penis. Such pigmented lesions were seen from the time when the prepuce could be retracted about two years ago. There is an 8 × 6 mm black plaque on his prepuce and a 15 × 10 mm one on his glans. The two

lesions “kissed” when the prepuce was retracted. On dermatoscopy, the lesions on his glans showed multiple pigment globules of different sizes.

PO04-097

### **A case of Extranodal NK/T-cell lymphoma, nasal type**

Dan Yan

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A 82-year-old male patients found a mass on the right side of the neck after 2 months, about  $6 \times 5 \times 3$  cm. There had blisters, erosinon on the mass, pain. The patient's mental sleep was good, and the toilet was normal. System check: Several soybean-sized lymph nodes could be found in the right side of the neck. The wet sound was heard in the bottom of the lungs. The rest of the body was not unusual. There was a red mass on the right side of the neck with some blisters and erosinon. Blood routine examination: WBC:  $3.26 \times 10^9/L$ , NEU:  $1.30 \times 10^9/L$ , NEU-R0: 39.9%, R0: 44.2%, MONO-R0: 15.3%, HBG: 116 g/L, PLT:  $322 \times 10^9/L$ , ESR 73 mm/60 min, P LYM PD (+); Sternum: Emphysema, bronchitis; B-scan ultrasonography: There are many swollen lymph nodes on the right side of the neck. Organize pathological: The epidermis was not abnormal; the perivascular in the full dermis was surrounded by medium-sized lymph cells. Mianyi: CK (-), CD3 (+), CD4 (-), CD8 (+), CD56 (-), CD57 (-), CD30 (-), CD20 (-), CD5 (-), CD79 $\epsilon$  (-), CD3 $\epsilon$  (+), Granzyme-B (+), Ki-67 (60% +), TIA-1 (+), ALK-1 (-), HMB45 (-), EBER (+). Diagnosis: Extranodal NK/T-cell lymphoma, nasal type. Different diagnosis: Peripheral T cell lymphoma, subcutaneous panniculitis like Tcell lymphoma.

PO04-098

### **Spitz nevus with characteristic histopathological and dermoscopic features**

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Spitz nevus is recognized as a benign or indolent melanocyte proliferation that most commonly develops in children and young adults. In some cases, atypical Spitz nevus may mimic a malignant melanocytic neoplasm. In order to differentiate Spitz nevus from melanoma, thorough examinations are needed. Dermoscopy has emerged as an important tool in the evaluation of patients with lesions suspected to be Spitz nevi, yet there are not many cases reported with dermoscopic analysis in China. Here we reported a case of a 5-year-old boy with a Spitz nevus on his face, demonstrating its clinical manifestations, characteristics of histopathology, immunohistochemistry and especially specific patterns of dermoscopy. This case was unique because the dermoscopic patterns of one lesion showed not only characteristics of pigmented Spitz nevus but also features of nonpigmented Spitz nevus, which is rare. Besides, the histopathological and immunohistochemical features of the lesion were also analysed. The present case showed the characteristic but unique patterns of Spitz nevus on dermoscopy, which is useful in distinguishing Spitz nevus from melanoma. As for management, we decided to take regular clinical and dermoscopic observation considered of age and the specific dermoscopic pattern of our patient, and there was no recurrence after 6 months follow-up.

PO04-099

**Analysis of 622 cases of epithelial skin malignant and premalignant lesions from the southwest China plateau**

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**Background** Actinic keratosis (AK), squamous cell carcinoma (SCC), and basal cell carcinoma (BCC) are common in Caucasian populations, but data is scarce for Chinese populations. This study aimed to explore the clinical features and diagnostic accuracy of skin epithelial malignant lesions and precancerous lesions in the southwest plateau region of China.

**Methods** This was a retrospective study of patients diagnosed with cutaneous epithelial malignant and premalignant lesions at the First Affiliated Hospital of Kunming Medical University from December 2010 to January 2014. The diagnostic accordance rate was calculated.

**Results** There were 622 patients with epithelial premalignant and malignant lesions. The male/female ratio of 1: 1.87 and 63.5% of the patients were >60 years of age. Among the 622 patients, 48.6% were diagnosed with BCC, 29.3% with actinic keratosis, 10.6% with Bowen's disease, 9.2% with SCC, 1.8% with cutaneous horn, and 0.6% with Paget's disease; 79.4% occurred in the head and neck area. The diagnostic accordance between clinical and pathological diagnoses was 100% for Paget's disease, 70.5% for BCC, 61.0% for actinic keratosis, 56.1% for SCC, 51.5% for Bowen's disease, and 45.5% for cutaneous horn. The proportion of patients diagnosed with precancerous or malignant tumors among the total number patients receiving pathological examination increased, with the increase of BCC being the most significant.

**Conclusions** Premalignant and malignant skin lesions mainly occur in Chinese women over 60 years old and on exposed areas. BCC and actinic keratosis are the most common lesions, but the diagnostic accuracy is low.

PO04-100

**Table tennis bat shape flap pedicled with the orbicularis oculi muscle for reconstruction of periorbital skin defect**Chun-Li Yao<sup>1</sup>, Wen-Juan Yang<sup>1</sup>, Hong-Xia Li<sup>2</sup>, Teng-Fei Liu<sup>1</sup>*1. Department of Dermatology/Medical Beauty Department, Second Hospital of Jilin University**2. Department of Dermatology, First Hospital of Jilin University*

**Objective** To explore the clinical application of table tennis bat shape flap pedicled with the orbicularis oculi muscle for reconstruction of periorbital skin defect after the excision of eyelid and peri palpebral cutaneous tumor.

**Methods** We collected totally 21 cases of patients who were treated by the table tennis bat shape flap of orbicularis oculi muscle pedicle in the repair of skin defect after the excision of eyelid and peri palpebral cutaneous tumor in the Department of Dermatology of the Second Hospital of Jilin University from June 2014 to May 2017. All defects were treated with the table tennis bat shape flap of orbicularis oculi muscle pedicle based on the defects location and area, while the donor sites were treated with relaxation suture hierarchically.

**Results** The survival rate of flaps was 95.2%. Follow-up for 3 to 24 months showed that the total choiceness rate was 85.7% and the satisfaction rate was 76.2%. All the cases achieved good appearance and function. Only one case occurred distal partial necrosis of the flap, but finally survived after wound dressing. Donor areas healed well without scar proliferation.

**Conclusion** The orbicularis oculi pedicle table tennis bat shape flap has reliable blood supply as well as high flap survival rate and good ability to repair periorbital skin defect. The texture, thickness and flap color were similar with the surrounding area. Donor areas healed well and the scar was concealed without obvious Proliferation. It is one of the effective methods to repair and construct the periorbitals.

PO04-101

**A case of Pediatric Rhabdomyosarcoma**

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A 2-year-old infant complained with a red nodule on his left cheek for one year. On physical examination, there was a 2.0×3.0 cm red nodule lateral to the mouth, with hard texture and smooth surface. Histopathological examination revealed that the epidermis was normal. The lymphatic vessels in the superficial layer of the dermis were dilated obviously. There was a dense infiltration of lymphocytes around the dermal vessels. There were lots of tumor cells around the subcutaneous appendages, vessels and between bundles of collagen fibers. Tumor cells were small round or fusiform. The nucleus was large and dyed deeply. The cytoplasm was less. Along with blood vessels and appendages, tumor cells were arranged in cords. It was suspected lymphatic reticular system tumor. In the first immunohistochemical staining, AE1/AE3, CD3, CD4, CD8, CD20, CD31 and CD34 were all negative, CD56 was positive. According to the results of the first time, second immunohistochemical staining was carried out. CD2, CD7, CD30, CD43, CD68, S100, LCA, MPO, TdT, and Syn were negative, Ki67>90%. Leukemia, Merker cell carcinoma and lymphoma were excluded, but it was a malignant tumor according to the percentage of Ki67. In the third time, EMA and PAX-5 were negative, VIM and CD99 were positive. They were suggested that it may be a malignant tumor of the mesenchymal tissue. In the fourth time, MyoD1 and myogenin were positive. Rhabdomyosarcoma was diagnosed. After surgery and radiotherapy, the lesion was completely regressed. No recurrence occurred during three years follow-up. He is still in the follow-up.

PO04-102

**Skin high-frequency ultrasonographic and dermoscopic features of seborrheic keratosis**

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**Objective** To describe high-frequency ultrasonographic and dermoscopic features of seborrheic keratosis (SK), and to explore the application value of high frequency ultrasonography and dermoscopy in assisting the diagnosis of SK.

**Methods** Forty-six patients with SK who performed skin high-frequency ultrasonography and dermoscopy were collected from Department of Dermatology, Peking Union Medical College Hospital between August 2017 and December 2017. A total of fifty skin lesions were analyzed with high-frequency ultrasonographic and dermoscopic features.

**Results** The ultrasonographic characteristics at 50 MHz and 20 MHz of SK from above to below, include enhanced hyperecho above the lesion (96% and 78%), hyperechoic spots or clods in the stratum corneum (50% and 22%), with shadows in posterior (68% and 26%), regular figure and periphery in focus (92% and 82%), heterogeneous hypoechoic lesions (100% and 94%) with internal hyperechoic spots (44% and 4%), the lesional bottom at the same level (80% and 72%), and reduced dermal echogenicity below the lesion (100% and 56%). The common dermoscopic features of SK were well demarcated (100%), comedo-like openings (90%), fissures and ridges/cerebriform pattern (62%), multiple milia-like cysts (48%), moth-eaten border (42%) and shiny white streaks (6%). Comedo-like openings under dermoscopy and hyperechoic spots or clods in the stratum corneum of ultrasonography emerged consistently in 21 cases and 10 cases at 50 MHz and 20 MHz, respectively; milia-like cysts and internal hyperechoic spots emerged consistently in 29 cases and 24 cases at 50 MHz and 20 MHz, respectively.

**Conclusions** The 50 MHz ultrasonography has advantages over 20 MHz ultrasonography in imaging details of SK; skin high-frequency ultrasonography and dermoscopy not only have good application value in assisting the diagnosis and lesion assessment of SK from different dimensions, but also have good consistency in the assessment of SK.

PO04-103

**Multiple warty dyskeratomas of the scalp: A case report and literature review**

Hong-Mei Zhou, Qiang Zhao, Qian Shang, Li-Hong Zhao, Tian Wang, Song-Mei Geng

*The Second Hospital Affiliated to Xi'an Jiaotong University***Objective** To Increased cognition of multiple warty dyskeratomas.**Method** The clinical, histopathological data in one case of multiple warty dyskeratomas of the scalp were analyzed and related literatures were reviewed.**Result** A 55-year-old Chinese man presented with a 4-year history of numbers pruritic nodules on the scalp, which had been slowly increasing in number and size. He had no personal or family history of disease. Clinical examination of the scalp revealed approximately 20 5-20 mm diameter, discrete, firm, skin-colour, hairless nodules, and some hyperkeratotic nodules with central plugs. On histologic examination, there were several large cup-shaped epidermal invaginations filled with keratinous material. The lower portion of each invagination showed suprabasal clefts and villi lined by a single layer of basaloid cells. There were typical corps ronds in the thickened granular layer and many acantholytic dyskeratotic cells above the villi. A moderate inflammatory infiltrate consisting of lymphocytes and histiocytes was observed in the dermis. On the basis of these clinical and histological findings, a diagnosis of multiple warty dyskeratomas was made.**Conclusion** Warty dyskeratomas (WD) is a relatively uncommon benign skin lesion, first described by Helwig in 1954 as "isolated Darier's disease". This pathology presents mostly as an isolated papule or nodule on the scalp, face, and neck of adults. In a few cases, involvement of the oral and genital mucosa has been reported. Multiple WD is an exceptional finding, which has previously been reported in a few cases, mostly in Japan. Histopathologically, WD is characterized by focal acantholysis and dyskeratosis, which shows mainly 3 different architectural patterns, namely, cup-shaped, cystic, and nodular, the former being the most frequent. The most important histopathologic differential diagnoses of multiple WD are Darier disease, Grover disease, hypertrophic actinic keratosis, and multiple squamous cell carcinomas. Total surgical excision is the treatment of choice, but topical tazarotenic acid gel may provide successful results in the management of this dyskeratotic disorder. Recurrence is rare, and malignant transformation of neither solitary nor multiple WD has been reported.

PO04-104

**Down-regulated TRPV1 expression contributes to melanoma growth via calcineurin-ATF3-p53 pathway**

Yu-Qi Yang, Wei-Nan Guo, Jing-Jing Ma, Chun-Ying Li

*Department of Dermatology, Xijing Hospital, Fourth Military Medical University, Xi'an, Shaanxi, China***Objective** To clarify the role and the mechanism of TRPV1 in the pathogenesis of melanoma development.**Methods** RT-PCR, Western blotting and immunohistochemistry were performed to testify the mRNA and protein expression of TRPV1 in benign nevus, melanoma tissues or melanocytes and melanoma cell lines. TCGA skin cutaneous melanoma (SKCM) database was analyzed to see the correlation between the expression of TRPV1 and melanoma patients' survival. RT-PCR and colony formation assay were performed to testify the proliferation of melanoma cells with TRPV1 overexpression/capsaicin and indicated treatments. Flow cytometry and Western blotting were performed to testify the apoptosis effect and apoptotic protein levels of melanoma cells with TRPV1 overexpression/capsaicin and indicated treatments. Chip and RT-PCR were performed to testify the enrichment of p53 to the promoters of downstream target genes and the mRNA levels of these genes with TRPV1 overexpression/capsaicin and indicated treatments.**Results** We first found that TRPV1 expression was significantly decreased in melanoma tissues and cell lines, compared with nevus tissues and normal melanocytes, respectively. We then proved that TRPV1 overexpression or its agonist capsaicin treatment inhibited melanoma growth by activating p53 and inducing cell apoptosis. Subsequent mechanistic study revealed that TRPV1 induced Ca<sup>2+</sup> influx to regulate p53 activation via calcineurin-ATF3 transcriptional cascade. Finally, the effect of TRPV1 on melanoma growth was proved *in vivo*.

**Conclusion** Our study demonstrated that TRPV1 is a novel potential tumor suppressor in melanoma.

PO04-105

### **Cold atmospheric plasma induces apoptosis of melanoma cells via Sestrin2-mediated iNOS Signaling**

Jun Xia

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Cold atmospheric plasma (CAP) represents a promising therapy for selectively cancer killing. However, the mechanism of CAP-induced cancer cell death remains unclear. Here, we identified the tumor necrosis factor (TNF)-family members, especially Fas, and overloaded intracellular nitric oxide participated in CAP-induced apoptosis in A375 and A875 melanoma cell lines, which was known as extrinsic apoptosis pathway. This progress was mediated by antagonistic protein of reactive oxygen species (ROS), Sestrin2. The over expression of Sestrin2 induced by plasma treatment resulted in phosphorylation of p38 mitogen-activated protein kinase (MAPK), followed by increased expression of nitric oxide synthase (iNOS), Fas and Fas ligand. Depletion of Sestrin2 reduced iNOS production and Fas expression, which was associated with reduction of plasma-induced apoptosis. In contrast, inhibition of iNOS activity and phosphorylation of p38 did not alter Sestrin2 expression in plasma-treated melanoma cells. Taken together, cold atmospheric plasma increases Sestrin2 expression and further activates downstream iNOS and p38 MAPK signaling to induce apoptosis of melanoma cell lines. These findings suggested a previously unrecognized mechanism in melanoma cells response to cold atmospheric plasma therapy.

PO04-106

### **Application of axial lip myocutaneous flap in reconstructing defect after tumour excision in lip**

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**Objective** Introduceing the application of axial lip myocutaneous flap in reconstructing defect after lip tumour excision.

**Methods** We have used axial lip myocutaneous flap for 6 cases in reconstructing lip defect after tumour excision since 2011. There were 5 men and 1 woman. Mean age was 56.6 years (range: 41 to 69 years). Two cases with lip tumours involved upper lip, the others involved lower lip. There were 4 cases of squamous cell carcinoma (SCC), the rest cases were malignant melanoma (MM) and keratoacanthoma (KA). For the 6 cases with defects after tumour excision ranges from one third to a half length of the lip, we performed axial lip myocutaneous flap. The trend and distribution of arteries the lip involved were fixed by Doppler bloodflow survery meter before surgery. Methods of anesthesia depended on patient's condition and resection range. Four resections were performed under general anesthesia and 2 under local anesthesia. The resection ranges were set by preoperative pathological examination, which was a 10-mm margin with excision for SCC and KA, and a 20-mm margin for MM. After removal of tumours, according to the trend of artery marked before surgery, we designed one-side or two-side axial red lip myocutaneous flaps which contained labial artery in its freedpedicle, and stretched then to the defective area for repairing red lip tissue defect, the flaps were sutured with package under pressure. The patients received half-solid food after operation to reduce tension and pollution of incision

**Results** Incisions of 6 cases were all healed by first intention, the flaps were survived, and did not affect the appearance and function of patients' lips significantly. Postoperative scars were not conspicuous. The follow-up lasted from 4 to 12 months. During the follow-up, the repairing effect were satisfactory and no local recurrence.

**Conclusions** The axial lip myocutaneous flaps which contained labial artery in its pedicle can be used to repair defects after tumour excision between one third and a half length of the upper or lower lip. Comparing to Abbe-Estlander flap, to Bernard flap and to the step or wave technique for treatment of lip tumours, the axial lip

myocutaneous flaps operation can be completed at one time and characterized by simple design and time-saving operation, with no obvious scar, which appearance and function recovered well. The effect of axial lip myocutaneous flaps recovering defect in lower lip is better than upper lip because the structural relationship around upper lip is just like nasolabial fold and vermilion tubercle. The axial lip myocutaneous flaps is a effective method to reconstructing lipdefect after tumour excision, it's worth popularizing as a repair method at the same time. Now the defects of cases we chose to use axial lip myocutaneous flaps to repair were all located in vermilion, or partly in peripheral tissue, so if it could be used in the treatment of more cases with larger defect needs further study and verification.

PO04-107

### **Role of B7-H3 in skin cancer: clinical significance and related mechanism**

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The modulation and suppression of anti-tumor immune responses is a characteristic feature of tumor cells to escape immune surveillance. The B7 family members, which are widely expressed on tumor cells and cell populations of the tumor microenvironment, are involved in this process of regulating adaptive cellular immunity by either co-stimulating or co-inhibiting T cell functions. The blockade of negative signals mediated by the interaction of co-inhibitory ligands and counter-receptors of the B7 family is currently being studied as a potential immunotherapeutic strategy for the treatment of cancer in humans. While oncogenic roles of B7 family have already been identified in various cancers, with the immune checkpoint inhibitors of PD-L1/PD-1 and CTLA-4/B7 being successfully applied in cancer treatment. The role of B7 family in CSCC hasn't been explored yet. In this study, we focused on clarifying the expression and clinical significance of B7-H3 in CSCC, and discussed their mechanisms and links in CSCC to provide new immune molecular targets for early diagnosis and treatment of CSCC. Our research showed that B7-H3 in the B7 family played an important role in tumor immune escapes of CSCC, and that B7-H3 molecules might directly participate in the transformation, proliferation, apoptosis and migration of CSCC cells. So B7-H3 molecules may be potential targets for early diagnosis and immunotherapy of CSCC.

PO04-111

### **ALA-PDT for cutaneous squamous cell carcinoma induces the production of CXCL13 chemokine in CAF to exerts antitumor effects**

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**Objective** To observe the expression changes of chemokine CXCL13 before and after 5-aminolevulinic acid photodynamic therapy (ALA-PDT) for cutaneous squamous cell carcinoma (cSCC), and to explore its possible mechanism and antitumor effect.

**Methods** A UV-induced primary mouse cSCC model was established. The level change of CXCL13 before and after ALA-PDT in human and mouse was compared at RNA and protein level. Three cell lines (fibroblasts, squamous cell carcinoma cells, and macrophages) were stimulated by homogenates from mouse cSCC tissue before and after ALA-PDT. Then Q-PCR was conducted to detect the production of CXCL13 to explore the main cells that up-regulate its expression. *In vivo* experiments, the established tumor-planted mice were randomly divided into 4 groups: CXCL13 protein group, CXCL13 antibody group, IgG protein group, and PBS group. Tumor-inside injections were performed during and after ALA-PDT. The tumor volume was measured daily after ALA-PDT.

**Results** After ALA-PDT, the expression of CXCL13 in human and mouse cSCC was significantly up-regulated and only significantly increased in the fibroblast stimulation group. *In vivo*, the tumor volume in CXCL13 antibody group

was larger than in CXCL13 protein group.

**Conclusion** ALA-PDT treatment of cutaneous squamous cell carcinoma induces CAF upregulating the expression of CXCL13 to enhance its antitumor effect.

PO04-113

### **Reconstruction of full-thickness lower eyelid defects involving more than half of the lower eyelid margin by the transposition skin flap: Case report**

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A 57-year-old man presented with a lesion on the border of the right lower eyelid for 4 years. The histopathological diagnosis was sebaceous carcinoma. The tumor was treated by extended excision following general anesthesia. For the full-thickness lower eyelid defects involving more than half of the lower eyelid margin after tumor excisions was repaired by the transposition skin flap. Postoperative periods were uneventful with a satisfactory result. The pathological examination was reported as sebaceous carcinoma with tumor-free specimen margins. After 3 months follow-up, the function and aesthetic appearance of the right lower eyelid were satisfactory without ectropion. Satisfactory reconstruction of the eyelids and related structures after tumor excisions depend on considering some factors comprehensively. The goal of the reconstruction of eyelid defects is to optimize both functional and cosmetic outcomes. The rotation angle of the transposition skin flap is flexible and the operation is relatively simple and effective. For full-thickness lower eyelid defects involving more than half of the lower eyelid margin, the transposition skin flap is a satisfactory procedure .

PO04-116

### **A case of blastic plasmacytoid dendritic cell neoplasm (BPDCN)**

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We reported a case of a 69-year-old man who presented with a rapidly enlarging purple plaque on his forehead with subsequent similarly appearing plaques and tubercle on his chest, back, and upper limbs. Medical history was collected. Skin biopsy and histopathological examination, immunohistochemical examination, bone marrow examination and flow cytometry were adopted. He underwent CHOPE chemotherapy after diagnosis. Skin biopsy revealed a dense adnexocentric dermal infiltrate of immature blastoid cells without epidermal involvement. The infiltrate was immunoreactive for CD4, CD56, CD123, and Bcl-2, but negative for CD10, CD20, CD21, CD23, CD30, CD34, CD35, CD43, CD79a, Pax-5, S100, Bcl-6 and Mum. The patient was diagnosed with BPDCN based on these cell markers. The results of BM smear and BM biopsy examinations detected that nucleated cells were active, and immature cells accounted for 15.5%. In addition, flow cytometric analysis of BM demonstrated the presence of 31.8% plasmacytoid dendritic cell-neoplastic precursor cells (CD7+, CD38+, CD56+ and CD117+). He underwent three cycles of CHOPE chemotherapy and relapse quickly. The patient died and the total survival period was 10 months. BPDCN is highly aggressive, in which the skin lesions are always manifested as initial symptoms, and bone and bone marrow involvement, lymphadenectasis, splenomegaly, and hepatomegaly is also common. Characteristic immunophenotype include the positivity of CD4, CD56, and CD123. Effective and standard therapy is limited in this disease, which indicates the poor prognosis.

PO04-117

**Melanoma on previous vitiligo**

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A 70-year-old male presented to our hospital with an 8-year black plaque on his right wrist and he had a past medical history of vitiligo. Physical examination including superficial lymph nodes was normal. Cutaneous examination revealed a 1.5 cm-in-diameter black, infiltrating, keratotic plaque on the radial aspect of his right wrist, with a larger patch of depigmentation adjacent to the plaque and a small black round satellite nodule on the depigmentation area. The surface of black plaque was unsmooth with obvious erosion and exudation. Histologic analysis of a lesion-biopsy specimen showed numerous melanocytes and obvious heteromorphism. Histopathology of the lesion together with positive results of immunohistochemical markers S-100, Melan-A and HMB-45, confirmed the diagnosis of melanoma. The patient was treated with surgery. Melanoma occurs most often in light-skinned people and the incidence of melanoma in Asians is the lowest. Acral-lentiginous melanoma is the most common type of melanoma in Asian populations. Early excision remains the most effective method for treatment. However, melanoma accompanied with vitiligo is rare.

PO04-118

**Analysis on clinical and dermoscopic characteristics of 164 acral melanocytic lesions.**De-Hua Liu<sup>2</sup>, Hang Li<sup>1</sup>*1. Peking University First Hospital**2. Beijing Tsinghua Chang Gung Hospital*

**Objective** Explore an easily quantifiable clinical indication, which can help distinguish benign and malignant acral melanocytic lesions before biopsy.

**Methods** The clinical and dermoscopic characteristics of 164 acquired acral melanocytic lesions (97 junctional nevi, 33 malignant melanoma, and 34 atypical lesions) were analyzed and compared.

**Results** It was benign when the largest diameters were less than 0.7 cm in children ( $\leq 18$  years old,  $P < 0.05$ ) and less than 0.3 cm in the adults ( $> 18$  years old,  $P < 0.05$ ). Except that, almost all of cases were junctional nevi when the color and structure of a lesion was completely symmetrical and the border was sharp ( $P < 0.05$ ). The patterns of the irregular blotch, regression structure and blue-white veil were signs of malignancy ( $P < 0.05$ ).

**Conclusion** Age, the largest diameter of acquired acral melanocytic lesions and dermoscopic patterns are useful to make different diagnosis. A correct diagnosis routing could help avoid missing or excessive biopsy.

PO04-121

**A case of multiple cutaneous metastases of face from primary hepatocellular carcinoma**

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Cutaneous metastases from Hepatocellular Carcinoma (HCC) are very rare, and have complicated clinical manifestations, which may result in a delay and failure in making their diagnosis, impacting morbidity, prognosis, and treatment. We reported a typical case of multiple cutaneous metastases of face from HCC, along with a review of the literature. A 62-year-old man had a history of hepatitis B for 20 years, but with no treatment. In January 2018, he was first diagnosed as HCC and multiple internal metastases, including lung and inferior vena cava. He was treated with TACE, antiviral, liver protection, and enhanced immunity. On March 28, 2018, he came to our outpatient department and complained with multiple reddish brown masses on his face, which was progressively enlarged and prone to ulceration and bleeding. Physical examination showed multi red brown and firm nodules of his face, the

diameters were from 1 mm to 1 cm, dilatation of capillaries on the nodules surface, rupture and bleeding of some, he also had the liver palm, and multiple spider nevus over the face and neck. Two larger nodules were completely resected. Pathology showed characteristic metastatic tumor. Immunohistochemical staining showed CK (+), hepatocyte (+), Arg (+), and Ki-67 (30% +).

PO04-123

### **Report of one case of repairing whole lower lip defect**

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*Department of Dermatology, The Second Hospital of Jilin University*

The lip is exposed on the face. Lip defect or deformity not only destroy appearance, but also cause dysfunction. Even more, it causes serious psychological damage. Lip defect needs cosmetic repair and functional reconstruction according to the patient's condition. We treated a patient with lower lip squamous cell carcinoma recently. A 37-year-old female developed a fissure in the lower lip without obvious causes. A pea-sized neoplasm appeared afterwards. No treatment applied, the fissure gradually expanded with occasional pruritus. Physical examination showed that 4.0 cm × 3.0 cm reddish plaque appeared on the lower lip, tough and rough on the surface. The plaque was well demarcated and grew as verruca protruding from the skin surface. No abnormalities were found in the lymph nodes around the focus. Preoperative pathological examination showed squamous cell carcinoma. A total resection surgery was suggested. Surgery and pathology findings: Use Ella photodynamic therapy (ALA) to locate resection margin of expansion, inward 0.5 cm, downward 0.8 cm, left and rightward 0.5 cm. Resect the full lower lip. Tongue shaped skin flaps were designed on both sides bottom of the mouth, resect the skin with a new sharp knife, peel the subcutaneous and intertissue with tissue scissors, exact hemostatic, each formed flap were rotated respectively, Z shaped cross cover defect, indwell Negative pressure drainage for each side flap, interrupted suture skin flap, pressurized wrapping. Postoperative pathological return: High differentiated squamous cell carcinoma of the lower lip, invasion to subcutaneous striated muscle tissue inside, all the resection margins were clear. No carcinoma was residual. Lip defect repairing is very demanding. It is necessary to repair the defect and the lip should be close to normal in color, elasticity, feeling and appearance after repairing. What's more, the cicatrix should be inconspicuous. The most fitting flap used to repair lower lip is the lip stump and tissues around the lips because they have rich blood supply and are less restricted in shape. It is convenient to repair lip defect using these tissue flaps. The effect is satisfying. In our group, we have the advantage of repairing the full-thickness defect of the lower lip compared with Bernard flap, and so on. Skin flap length width ratio and mobility limit are less limited. A large area of defect can be repaired. The Z cross processing at the skin flap links can increase the thickness of the repaired middle lip, reducing the normal lip structure as far as possible. Simple operation of skin flap design, no two stages broken pedicle, less tissue mobilization, less trauma. Concealment of valve donor area, small impact on the appearance. After the operation, should the patient pay attention to oral hygiene, timed flushing, do not open mouth too big in the early days, give food or nasal feeding for 2 weeks when necessary. Patients in this case, the flap survived well after the operation, first stage healing of incision. At present, 3 months of postoperative follow-up, good functional recovery and lip shape. Repair of lip tissue defect with local skin flap, good repair effect in function and appearance, simple operation, inconspicuous scar after operation, worth popularizing.

PO04-124

### **A case report: Basal cell carcinoma of the nipple-areola complex in a 65-year-old woman**

Sheng-Jiang Liang<sup>1,2</sup>, Ting-Lu Ye<sup>1</sup>, Bo Yu<sup>1</sup>, Ban-Cheng Chen<sup>1</sup>

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Basal cell carcinoma is the most common type of malignant skin tumors. However basal cell carcinoma of the nipple-areola complex is rare, commonly seen in males, and is not obviously correlated to solarization. Classic basal

cell carcinoma is locally invasive and rarely metastasized. However basal cell carcinoma of the nipple-areola complex has increased metastatic potential. We present a case of a 65-year-old woman who presented with a BCC of the right nipple.

PO04-126

### **Apocrine sweat gland adenocarcinoma in the left retroauricular area: A rare case report**

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We described the rare case of an elderly woman suffering primary apocrine sweat gland adenocarcinoma (PASGC) in the left retroauricular area where there is no apocrine sweat gland reported before. An 81-year-old woman, with no previous of skin cancer, suddenly presented with a left retroauricular skin mass for 2 years, that had rapidly increased in size these days. It was asymptomatic to begin with, but discontinuously became ulcerated during the period of disease. Her medical history included paralysis of the facial nerve. Physical examination revealed a ridgy, dark red, 3 cm × 4 cm nodule with no ulcer on its surface. The early and capsid antibodies of EB virus were negative, and there were no positive findings in the examination of tumor markers that included carcinoembryonic antigen (CEA), carbohydrate antigen 125 (CA125), carbohydrate antigen 199 (CA199), carbohydrate antigen 153 (CA153),  $\alpha$ -fetoprotein (AFP), neuron-specific enolase (NSE) and human chorionic gonadotropin (HCG). Besides, the result of fungal culture was negative. The patient was referred to Division of Dermatology to undergo a biopsy of the retroauricular area. Punch biopsy of the retroauricular skin lesion showed the edema of the epidermal cells and a tumor located in the middle and lower parts of the dermis, which was composed of epithelioid cells and seen myxoid substances, the tumor cells had hyperchromatic nuclei with and moderate pleomorphism. Immunohistochemically, the tumor cells were diffusely positive for CAM5.2, cytokeratin7 (CK7), CK, gross cystic disease fluid protein-15 (GCDFP-15), P63 and S-100 protein. The tumor cells were negative for LCA, melan-A and CK20. The patient was diagnosed with apocrine sweat gland adenocarcinoma. PASGC is a rare neoplasm that presents as an isolated, asymptomatic, and slow growing lesion, and originates from either normal or modified apocrine glands. Apocrine cells are distributed mainly in the axilla, followed by the anogenital region, and although apocrine gland carcinoma (AGC) has also been reported in uncommon areas such as the forehead, wrist, ear, eyelid, trunk, foot, toe, and finger, this carcinoma occurring on the retroauricular location is extremely rare. Sweat gland carcinoma (SGC) are divided into following types in spite of its rarity, namely AGC, malignant acrospiroma, malignant spiradenoma, malignant dermal cylindroma, malignant mixed tumor, sclerosing sweat duct (syringomatous) carcinoma, mucinous carcinoma, and adenoid cystic carcinoma. On the other hand, several aspects related to SGC and AGC remain undefined and require further study, mainly including organised classification scheme, diagnostic criteria, prognostic features and biologic markers. Besides, there are several studies pointing that SGC can be classified as eccrine gland carcinoma and AGC in spite of no unified agreement, AGC is more likely to present positive in GCDFP-15, human milk fat globulin 1 (HMFG1), CK1/CK10. In this case, the immunohistochemistry of patient revealed the positive expression of GCDFP-15, plus the result of pathological examination, this disease can be diagnosed as apocrine sweat gland adenocarcinoma. Regarding to the relationship between this patient's medical history and AGC, there is no powerful evidence to prove this correlation as far as current research, likewise, we cannot think that paralysis of facial nerve is totally irrelevant to the AGC, so it needs more profound study. In consideration of the scarcity of the PASGC, lack of the typical symptoms, lack of the standards of the diagnosis and classification, indefiniteness of the location and so on, it is necessary to grasp more similar cases and analyse its characteristics.

PO04-128

**Amelanotic acral melanoma in China**

Hui-Zi Gong

*Peking Union Medical College Hospital*

**Objective** To compared the clinicopathological features and prognosis of amelanotic acral melanomas (AAM) and pigmented acral melanoma (PAM) in China.

**Methods** We collected data of all patients with acral melanoma, which was subsequently divided into two groups by pigmentation .

**Results** Among 72 patients with acral melanomas, 16 cases (22.2%) of AAM were identified. The mean age of AMMs was 60.3 years, and the male/female ratio was 1.7. The most common location of AAMs was plantar area (50%). The most common clinical impression of 16 AAM cases was angioma-like lesions (43.8%). All AAMs presented with a Breslow thickness > 1 mm, 6 cases of which showed a Breslow thickness >4 mm. Fifteen cases (93.7%) of AAMs showed ulceration. All (100%) cases were positive for S-100 protein staining, but only 11 (78.6%) for HMB-45 and Malen-A staining. The prognosis of AAMs was poor, with the mean overall survival of 74.1 months and 5-year overall survival rate of 49.2%. When compared with PAMs, AAMs showed a thicker Breslow thickness, more frequent ulceration and lower HMB-45 positive rate. However, no significant difference in age, sex, distribution, diagnostic delay and survival was found between two groups.

**Conclusions** Both PAMs and AAMs tended to occur on the plantar area of old patients without gender predilection. As compared with PAMs, AAMs showed a significantly thicker Breslow thickness and more frequent ulceration, as well as a tendency to show poorer prognosis (not significant).

PO04-129

**SHARPIN overexpression promotes TAK1 expression and activates JNKs pathway in mycosis fungoide**

Yan-Hua Liang, Biao Chen

*Department of Dermatology, Shenzhen Hospital, Southern Medical University*

**Objective** Mycosis Fungoides (MF) is the commonest subtype of cutaneous T-cell lymphomas (CTCL). Shank-associated RH domain-interacting protein (SHARPIN) participates in the initiation and development of multiple tumors. This study aimed to probe SHARPIN expression and expression related progression, prognosis in MF and the molecular mechanism of JNK signaling pathway regulated by SHARPIN in MF.

**Methods** We analyzed SHARPIN expression and expression related prognosis in MF by data mining in GEO. SHARPIN expression of MyLa2059 and CD4+ T cells were detected by Western blot and qRT-PCR. SHARPIN overexpression and knockdown lentiviral vectors were transfected in MyLa2059 respectively. The effects of SHARPIN overexpression or knockdown on the proliferation, apoptosis, and motility of MyLa2059 were evaluated. Luciferase assay was conducted to evaluate whether SHARPIN transactivates TAK1 and activates JNK pathway.

**Results** We showed that up-regulated expression of SHARPIN was observed in MF tissues and this was related to poor prognosis of MF patients. In vitro experiments also found increased expression of SHARPIN and activation of JNKs in MF cell line MyLa2059. Overexpression of SHARPIN in MyLa2059 resulted in activation of JNKs pathway and thus induced cell proliferation, inhibited apoptosis, and enhanced migration and invasion of cells. Moreover, SHARPIN induced transforming growth factor  $\beta$  activated kinase-1 (TAK1) transcription, demonstrating that SHARPIN served as a transcriptional factor promoting TAK1 expression and activation of JNKs signaling.

**Conclusions** Our work provided direct evidences for effect of SHARPIN on JNKs pathway and the contributing roles of SHARPIN and JNKs pathway in the development of MF.

PO04-131

**One case of ovarian cancer skin metastasis**

Hai-Bo Wang, Bo Cheng, Chao Ji, Meng-Ting Lin, Jing Zhang, Jin-Wen Huang

*First Affiliated Hospital of Fujian Medical University*

The patient, female, was 72 years old and had an extraneous mass in the umbilicus for more than two months. Dermatological examination: A dark, red, exophytic mass with a diameter of about 2 cm was visible on the umbilicus. Red erosion and exudate were visible on the surface. The boundary with the surrounding tissues was still clear and palpated wet. Histopathological examination: Under the microscope, the tumor cells in the dermis were distributed in nests and formed a glandular-like structure. The nuclei of the tumor cells were deeply stained, and the nucleoli showed a significant pathological mitotic figure. Immunohistochemistry: AE1/AE3 (+), EMA (+), WT1 (+), CKp (+), CK7 (+), HMCK (+), Ki-67 (10% +), CK20, CEA, GCDPF-15, P63, VILLIN, TTF-1, vimentin, Napsin, CDx-2, CA125 were all negative. Final diagnosis: skin metastases from ovarian cancer.

PO04-132

**Natural killer/T-cell lymphoma with hemophagocytic syndrome**

Shuo-Shuo Liu

*Peking University Second Hospital*

We reported an 18-year-old male who in the beginning presented with a single ulcer in the left thigh, which developed rapidly and became multiple lesions accompanied with hemophagocytic syndrome within 4 months duration. Biopsy was taken twice. The first biopsy of the lesion suggested bacterial infections, while the second revealed NK/T-cell lymphoma, which in this case was described as extranodal NK/T-cell lymphoma-nasal type by the WHO-EORTC classification for cutaneous Lymphomas.

PO04-133

**Photosensitizer-loaded liposomes-gold nanocages for enhanced phototherapy eliciting anti-melanoma immune responses**Jun Xie<sup>1,2,3</sup>

1. School of Chemistry and Chemical Engineering, HUST
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3. Zhongnan Hospital of Wuhan University

The lethality rate of malignant melanoma is the first in the skin tumor, traditional treatments (operation, radiotherapy, chemotherapy) have poor effects, and the 5 years survival rate of the patient is less than 15%. The phototherapy of photothermal and photodynamic effects through photosensitive substances responding to near infrared light (NIR) can effectively treat malignant melanoma. But the simple photosensitizer (indocyanine green, ICG) is unstable and would decompose in the light environment. The key point to phototherapy for malignant melanoma is to optimize the photothermal performance of photosensitizer and to reduce its toxic and side effects. In this study, a gold nano cage coated with liposome (Lipos-AuNC-ICG-MPLA) was designed to load the photosensitizer ICG, and a photosensitizer with higher efficiency of photothermal conversion was obtained, by regulating the dose of NIR to study the controlled combined treatment of photothermal and photodynamic therapy for *in situ* malignant melanoma. At the same time, the immune adjuvant (MPLA) was loaded in the liposome to further study the combination of phototherapy and immunotherapy for metastasis and recurrence malignant melanoma. Using flow cytometry, ELISA, immunofluorescence and immunohistochemistry techniques, we found that the proportions of IFN- $\gamma$  producing CD8<sup>+</sup> and CD4<sup>+</sup> lymphocytes and CD8<sup>+</sup>CD107a<sup>+</sup> T lymphocytes from the RLNs of the mice treated with

Lipos-AuNC-ICG-MPLA+NIR were much higher as compared to those in Lipos-AuNC+NIR, ICG+NIR, Lipos-AuNC-ICG+NIR and Lipos-AuNC-ICG-MPLA treated mice. This data revealed that Lipos-AuNC-ICG-MPLA+NIR induced much stronger antitumor CTL responses than the other treated groups. Lipos-AuNC-ICG-MPLA nanomedicine-mediated PTT/PDT combination therapy releases whole melanoma cell antigens while clearing the melanoma *in situ*, and with the help of adjuvants to activate the body's immune system to achieve melanoma metastasis inhibition and prevent recurrence. This research provided theoretical and experimental information for phototherapy combined with immunotherapy for malignant melanoma.

PO04-134

### **Squamous cell carcinoma case report**

Rong-Rong Guo, Bo Cheng, Chao Ji

*First Affiliated Hospital of Fujian Medical University*

Squamous cell carcinoma is one of the most common human malignancies. Here we reported a case of SCC on right ear in an 87-year-old female. Clinically it was presented a nodule in front of her right ear a few months, whose diameter was about  $1.5 \times 2.5$  cm, with erosion on the surface, well-defined margin, which had no pain, no itching. Microscopic examination revealed a large number of epithelial cells in the dermis. Nuclei were large and darkly stained, and squamous fossa was formed. Peripheral blood vessels in the dermis showed infiltration of mixed inflammatory cells such as lymphocytes, eosinophils, and neutrophils. Immunohistochemistry: AE1/AE3 (+), P63 (part +), Ber-EP4 (-), Ki67 (about 40% +). Therefore we diagnosed squamous cell carcinoma.

PO04-136

### **Carcinoma of the penis: A case report**

Chun-Shui Yu, Qian Liao, Han-Wen Wang, Lin-Li Liu

*Suining Central Hospital, Suining, Sichuan*

A 55-year-old man had a tumor with a small ulcer on the foreskin of his penis. A local excision was performed. Histological examination of the specimen revealed squamous cell carcinoma. Squamous cell carcinoma is a common tumor of the skin, and is easily found on the penis, they often have been treated with operation because of their poor prognosis and easy metastasis. A 55-year-old man noticed erosion on the foreskin of his penis. Because pain on contact increased, he was treated at out-patient in different hospital. And the erosion increased gradually. Finally, he had a tumor measuring  $6.2 \times 5.5 \times 1.0$  cm with a small ulcer on the foreskin of the penis. There was inguinal lymphadenopathy and examination was otherwise remarkable. The five lymph nodes were palpable in his inguinal groove, and the surface of the skin had ulcers. Chest X-ray examination revealed tumor had metastasis. His clinical routine laboratory data were almost normal. Computed tomography of abdomen and pelvis showed the evidence of inguinal lymphnodes metastases. He refused circumcised. A local excision combined with biopsy was performed. Histological examination of the specimen revealed a high-grade squamous cell tumour. Histologically, the lesion was composed of irregular and solid proliferations of epidermal cells with squamoid differentiation, replacing the epidermis and contiguously growing into the upper dermis in a bud-like pattern, and the horny pearl could be seen in the upper dermis and epiderm. Microscopy of the gross specimen showed squamous cell elements. Thus, these findings supported the diagnosis of squamous cell carcinoma. The patient refused further surgery and received pelvic irradiation. Then the patient refused further treatment and follow-up. So we gave no further treatment. He died 7 months later.

PO04-137

**A case of hair matrix tumors.**

Li Zhao

*The First Affiliated Hospital of Fujian Medical University*

Hair matrix tumors are benign tumors or cysts with keratinizing properties of hair matrix. It usually presents as a single lesion with light- blue or skin-color nodules or cysts. Hard nodules are the characteristic. It occurs to any age, but they are most common in childhood and adolescence, and most often in the head and upper trunk. Nodules can become inflamed and red. Here is a classic case of hair matrix tumors. The patient was male, 17-year-old, with a subcutaneous nodule in the right forearm for one year and felt pain for one month. Dermatology: A nodule with a diameter of about 3×3 cm was visible in the right forearm. The lesion was skin-color with the top slightly reddish, and the texture was firm. The boundary between the tissue and the surrounding tissue was unclear and the skin temperature was slightly higher. Histopathological examination of skin lesions: under the microscope, basal-like cells were observed with keratinization of stroma and shadow cells, and a large number of neutrophils and histiocytes were infiltrated around them. Final diagnosis: hair matrix tumors.

PO04-138

**A case of a cutaneous squamous cell carcinoma at the site of previous sporotrichosis: a novel pathogenetic association**

Yong-Zhi Ji, Shi-Rui Liu, Fu-Qiu Li

*Second Hospital of Jilin University*

Cutaneous squamous cell carcinoma (cSCC) is a malignant tumor of epithelial keratinocytes, with a relatively reduced frequency of lymph node metastasis. Despite the fact that this tumor type is largely preventable, the incidence of cSCC is rising every year. Ultraviolet exposure is a major cause of cSCC and directly contributes to cSCC. Other known environmental risk factors included ionizing radiation, cigarette smoking, and certain chemical exposures. In this study, we reported a clinical case of cSCC with a novel causative factor. After rigorous exclusion of possible risk factors, it was confirmed that this incidence of cSCC was induced by chronic inflammation following fixed-type sporotrichosis.

PO04-139

**Benserazide suppresses growth of melanoma by targeting PKM2**

You-You Zhou, Xiang Chen, Cong Peng

*Department of Dermatology, Xiangya Hospital, Central South University***Objective** Searching for more effective anticancer agents for melanoma therapy.

**Methods** We used Western blot to detect the expression of pyruvate kinase M2 (PKM2) in different cells. Then MTS, transwell, wound healing assays, Seahorse XF24 analysis and xenograft mouse model were performed to explore the effects of shPKM2 and benserazide on the proliferation, invasion, migration, glycolysis and tumor xenograft growth of melanoma cells respectively. LDH coupled assay was performed to explore the PK activity.

**Results** We found that the expression of PKM2 was higher in melanoma cells than normal cell, glycolysis levels and activity levels of PKM2 were higher in SK-MEL-5 cell than other cells, suggesting that PKM2, one of important metabolic enzyme, was associated with the tumor invasion and migration. In addition, shRNA-mediated silencing of PKM2 gene inhibited aerobic glycolysis, proliferation, migration, and invasion in melanoma cells, PKM2 knock down also reduce tumor xenograft growth *in vivo*, suggesting that PKM2 might serve as a target for skin cancer prevention and/or therapy. Next we identified that benserazide was a PKM2 inhibitor. Benserazide resulted in over 50% inhibition of PKM2 activity and significantly inhibited the glycolytic rate. Furthermore, treatment of

benserazide significantly inhibited proliferation, invasion, migration and colony formation ability of melanoma cells *in vitro* and tumor xenograft growth *in vivo* without significant toxicity in a xenograft study.

**Conclusion** Benserazide is a potentially useful anticancer drug candidate, targeting PKM2 may constitute a promising therapy for patients with melanoma.

PO04-140

### **Hepatic fibrosis, Squamous Cell Carcinoma and Multiple Bowen's Disease in a Patient with a History of Consumption of Traditional Chinese Herbal Balls: A six -year follow-up**

Bin Chen

*Jining No.1 People's Hospital*

Arsenic has been classified as a class I human carcinogen, which has a long history of use as a poison in some folk medicines. Chronic arsenic exposure causes cancer, liver disease, cardiovascular disease and ocular disease. This case featured a 35-year-old lifetime male with a history of consumption of traditional Chinese herbal balls, after ten years later, the patient was diagnosed with idiopathic portal hypertension, Bowen's disease, hepatic fibrosis, *et al.*

PO04-141

### **Sporotrichosis: A case report**

Xiao-Pan Gong, Chao Ji, Bo Cheng, Qi-Le Zheng

*The First Affiliated Hospital of Fujian Medical University*

A 67-year-old female patient came to the hospital with left leg ulcer 2 months ago. After the injury, the old female patient found that there was skin papules and nodules on the left leg, and gradually spread to the thigh. Then papules, nodules rupture pus, with pain. No significant improvement was found in Chinese herbal medicine (unspecified) after self application, and it was worse than before. For further diagnosis and treatment, they came to the outpatient department of our hospital. Specialist examination: an irregular ulcer on the left leg. The area was about 0.5 cm × 3.0 cm. The surface of the ulcer was partly scab and a little purulent secretion. The skin around the ulcer was thickened and dark purple. Auxiliary examination: skin superficial secretion culture: sporo myceliosis. Histopathology of the skin: hyperkeratosis, hyperkeratosis, thickening of the spinous layer, extensive proliferating vasodilatation of the superficial middle layer of the dermis, infiltration of mixed inflammatory cells such as a large number of neutrophils, plasma cells, lymphocytes and tissue cells, and the multinucleated giant cells and hemaghnotin. PAS staining was negative. Diagnosis: according to the typical clinical manifestations of patients, combined with secretion culture and pathological findings, we diagnosed sporsporiosis. Treatment: potassium iodide solution 10 ml, 3 times/day, orally. The patients are still in the follow-up.

## **PO05 Bullous Diseases**

PO05-005

### **Recessive dystrophic epidermolysis bullosa patient with COL7A1 gene mutation**

Jeunghoon Lee, ChangDeok Kim, SooJung Kim, Mi-Ra Choi

*Chungnam National University Hospital*

**Background** Recessive dystrophic epidermolysis bullosa (RDEB) is the most severe type of dystrophic epidermolysis bullosa. The signs and symptoms of this condition involve widespread blistering that can lead to vision loss, disfigurement, and other serious medical problems. RDEB is caused by mutations in the COL7A1 gene and is

inherited in an autosomal recessive pattern. The aim of this study was to find the mutations in COL7A1 gene of an RDEB patient.

**Methods** We obtained skin specimen from a 19-year old RDEB patient, then cultured keratinocytes and fibroblasts. Using the genomic DNA isolated from cultured fibroblasts, we performed the whole genome sequencing.

**Results** We examined the COL7A1 expression in cultured RDEB keratinocytes and fibroblasts. Although the mRNA was transcribed similar to wild type cells, protein level for COL7A1 was significantly reduced in RDEB keratinocytes and fibroblasts. In addition, COL7A1 protein size in RDEB keratinocytes was likely smaller than that of wild type. WGS identified two mutations in coding region of COL7A1 gene of an RDEB patient, in exon 15 and exon 115. For lineage tracing, gDNAs isolated from parents' blood were sequenced. Results showed that exon 15 mutation was from father while exon 115 mutation from mother.

**Conclusion** Our study confirmed that an RDEB patient received mutational genes in an autosomal recessive pattern that caused RDEB phenotype.

PO05-010

### **Coexistence of bullous pemphigoid and pemphigus vulgaris**

Jae seong Joo, Sook Jung Yun, Seung Chul Lee, Jee Bum Lee

*Department of Dermatology, Chonnam National University Medical School*

Bullous pemphigoid (BP) and pemphigus vulgaris (PV) are distinct autoimmune blistering diseases characterized by autoantibodies directed against the basement membrane zone (BMZ) and intracellular space (ICS) of the epidermis, respectively. The diseases rarely occur together in a same patient. And it has not been reported in Korean literature, so far. A 64-year-old male first had small blisters on the legs 2 years ago. And pruritic erythematous patches and bullae with erosions and crusts on the entire body including oral mucosa have been gradually developed from 4 months ago, so he was referred to our department. Histopathological examination revealed subepidermal bulla with many eosinophils in the upper dermis. Direct immunofluorescence test revealed depositions of C3 along the BMZ, as well as IgG both ICS and BMZ. And also immunoblotting assay revealed antibodies against 130kD (desmoglein 3) and BP 180 kD & 230 kD. The results of ELISA were positive to both BP 180 k & 230k. Based on the clinical, histoimmunologic, and the immunoblotting findings, the patient was diagnosed as having both BP and PV. Herein, we report the first case of coexistence of BP and PV in Korean literature.

PO05-013

### **A case of pemphigus vulgaris accompanied by acquired hemophilia A**

Ozumi Tomita, Takashi Inozume, Shinji Shimada, Tatsuyoshi Kawamura

*Department of Dermatology, University of Yamanashi*

A 54-year-old Japanese female with a 3-years history of rheumatoid arthritis presented to our clinic with complaints of oral erosion. Mucosal biopsy showed a suprabasal cleft with acantholysis, and blood examination detected the anti-desmoglein 3 antibody. We diagnosed her with pemphigus vulgaris (PV). She was treated with oral prednisolone (50mg/day) and her symptoms subsequently improved. However, during the steroid tapering, she developed severe anemia due to intramuscular hemorrhage in her left leg, and blood examination detected anti-factor VIII autoantibody. We additionally diagnosed her with complications of acquired hemophilia A. Despite of co-administration of prednisolone and cyclophosphamide, the anti-factor VIII autoantibody titer increased, and the hemorrhagic disorder gradually exacerbated. Eventually, her symptoms due to acquired hemophilia A was improved following administration of rituximab. Autoimmune bullous diseases are rarely accompanied by acquired hemophilia A. Therefore, dermatologists have to consider the possibility of hemophilia A when examine the patients with hemorrhagic disorders who also present with autoimmune bullous disease.

PO05-014

**Recessive dystrophic epidermolysis bullosa patient (RDEB) with COL7A1 gene mutation**

Jeunghoon Lee, Mi-ra Choi, Soo-jung Kim, Chang-Deok Kim

*Chung Nam National University Hospital*

**Background** Recessive dystrophic epidermolysis bullosa(RDEB) is the most severe type of dystrophic epidermolysis bullosa. The signs and symptoms of this condition involve widespread blistering that can lead to vision loss, disfigurement, and other serious medical problems. RDEB is caused by mutations in the COL7A1 gene and is inherited in an autosomal recessive pattern. The aim of this study was to find the mutations in COL7A1 gene of an RDEB patient.

**Methods** We obtained skin specimen from a 19-year old RDEB patient, then cultured keratinocytes and fibroblasts. Using the genomic DNA isolated from cultured fibroblasts, we performed the whole genome sequencing.

**Results** We examined the COL7A1 expression in cultured RDEB keratinocytes and fibroblasts. Although the mRNA was transcribed similar to wild type cells, protein level for COL7A1 was significantly reduced in RDEB keratinocytes and fibroblasts. In addition, COL7A1 protein size in RDEB keratinocytes was likely smaller than that of wild type. WGS identified two mutations in coding region of COL7A1 gene of an RDEB patient, in exon 15 and exon 115. For lineage tracing, gDNAs isolated from parents' blood were sequenced. Results showed that exon 15 mutation was from father while exon 115 mutation from mother.

**Conclusion** Our study confirmed that an RDEB patient received mutational genes in an autosomal recessive pattern that caused RDEB phenotype.

PO05-018

**A paraneoplastic pemphigus with Unicentric mediastinum Castleman's disease: a case report**

Yun-Zhu MU

*The Affiliated Hospital of North Sichuan Medical College*

Paraneoplastic pemphigus(PNP) is an antoimmune bullous dermatoses associated with underlying neoplasma. We describe a case of PNP accompanied by Unicentric Castleman's disease (UCD).The patient has been misdiagnosed initially and died of respiratory failure two month later. Usually this disease was easily misdiagnosed in the early stage because of heterogeneous presentation, it is necessary to conduct a detailed examination when a patient presented with severe mucocutaneous blistering and erosions and no response to conventional treatment. Respiratory failure caused by bronchiolitis obliterans (BO), the main complication of PNP associated with CD, has been proved to the dominant cause of death for most patients. UCD is the most common neoplasm inducing PNP which harboring a clinical heterogeneity and unpredictable prognosis. BO was supposed to be the top cause responsible for the death of PNP accompanied by UCD.

PO05-001

**Focal pemphigoid vegetans on the lower limbs of a boy with bullous pemphigoid**Hui-Chun su<sup>1</sup>, Ling Yu<sup>2</sup>, Zhi-Liang Li<sup>2</sup>, Xu Yao<sup>2</sup>, Su-Ying Feng<sup>2</sup>, Bao-Wang<sup>3</sup>*1. the First Affiliated Hospital of Fujian Medical University**2. Institute of Dermatology, Chinese Academy of Medical Sciences & Peking Union Medical College**3. Department of Dermatology, Plastic Surgery Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College*

Pemphigoid vegetans is a very rare variant of bullous pemphigoid usually located in intertriginous areas in adults. We reported a case of a 15-year-old boy who was misdiagnosed chronic ezema with recurrent crusted purulent vegetating

plaques on his lower limbs for 2 years. However, the histopathology, direct immunofluorescence studies and salt split skin test supported the diagnosis bullous pemphigoid with focal pemphigoid vegetans on lower limbs. Other special clinical presentations of this patient were alopecia areata when the bullous eruptions were serious with the involvement of the nails. Children with BP often had good prognosis in the duration of less than year. Topical corticosteroids were effective. Patients with generalized lesions can choose oral corticosteroids as treatment. The therapy of oral tetracycline combined with nicotinamide is effective in some patients with mild symptoms if the patient is more than 14 years old. The lesions of this patient were improved by tetracycline and nicotinamide and topical corticosteroid ointment. However, when oral acitretin was applied, the rash aggravated. Then the patient was subjected to oral prednisone therapy, and the rash improved apparently.

PO05-002

### **Application of indirect immunofluorescence on the diagnosis of autoimmune subepidermal bullous disease**

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2. Department of Dermatology, Institute of Dermatology, Chinese Academy of Medical Sciences and Peking Union Medical College

**Objective** To evaluate the diagnostic value of indirect immunofluorescence(IIF) on three different kinds of substrates including normal skin, monkey esophagus and salt-split skin for the diagnosis of autoimmune subepidermal bullous diseases.

**Methods** A total of 56 patients with autoimmune subepidermal bullous diseases and 100 control were enrolled into this study. IIF on normal skin, monkey esophagus, salt-split skin three different kinds of substrates were performed respectively, comparing its sensitivities and specificities on different substrates.

**Results** Fluorescein linear deposition along the basement membrane zone was visible when IIF performed on normal skin, monkey esophagus, salt-split skin three different kinds of substrates in some pemphigoid patients. The sensitivities of subepidermal bullous diseases on the three substrates were 73.2%, 60.7%, 94.6% and the specificities were 99.0%, 100.0%, 98.0% respectively, the sensitivities of bullous pemphigoid were 74.5%, 63.8%, 93.6% respectively. For pemphigoid patients, there existed statistical significance between normal-skin and salt-split skin IIF sensitivity ( $P < 0.01$ ), so did monkey esophagus and salt-split skin IIF sensitivity ( $P < 0.001$ ), specificities among the three different substrates had no statistical significance ( $P > 0.05$ ). For bullous pemphigoid patients, there existed statistical significance between normal skin and salt-split skin IIF sensitivity ( $P < 0.05$ ). Compare anti-BP180 ELISA level between monkey esophagus IIF positive and negative bullous pemphigoid patients, there was no significant difference ( $P > 0.05$ ).

**Conclusion** For pemphigoids, using salt-split skin as substrate is better than using normal skin and monkey esophagus and the result of monkey esophagus IIF is not related with anti-BP180 ELISA index level.

PO05-003

### **A case report of drug-induced toxic epidermal necrolysis with secondary aspergillus fumigatus infection**

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Among the various drug induced dermatological entities, toxic epidermal necrolysis (TEN) and Stevens Johnson Syndrome (SJS) occupy a primary place in terms of mortality. Toxic epidermal necrolysis is rare but considered medical emergencies as they are potentially fatal. The most common offending agents are sulfonamides, NSAIDs, butazones and hydrantoin. An immune mechanism is implicated in the pathogenesis but its nature is still unclear. We describe a case of lamotrigine-induced toxic epidermal necrolysis. A 50-year-old female presented with erythema and

bullae. Physical examination found the size of epidermal exfoliation Was over 50% of the body surface and mucosal lesions as well. We treated her with high dose corticosteroids, High-dose intravenous immunoglobulins and Etanercept, but Eventually died of secondary aspergillus fumigatus infection. Through the Bronchoscopy ,there are multiple nodules like pebbles on the tracheobronchial mucosa,with hyperemia and edema. A large number of secretion attached on the bronchus.In conclusion, toxic epidermal necrolysis is an life-threatening conditions. Despite its rarity, the appearance of skin lesions, in patients with a history of drug allergies, requires much attention.

PO05-004

### **A case report of pemphigus foliaceus converting into bullous pemphigoid with clinical and immunopathological features**

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We report a 58-year-old Chinese woman who developed bullous pemphigoid (BP) 7 years after pemphigus foliaceus (PF) was diagnosed. On her first presentation in 2010, the patient presented with erythema and erosion in her abdomen, histological examination demonstrated intraepidermal blistering and acantholysis in the upper stratum spinosum, indirect immunofluorescence (IIF) revealed the binding of IgG antibodies against the intercellular spaces of epidermis, with the titer of 1: 80. After prescribed with high dose of immunosuppressants, the lesions were gradually cleaning. In April 2017, enzyme-linked immunosorbent assay (ELISA) detected the positive of antibody to desmogleins 1 (anti-Dsg1), negative of antibodies to desmogleins 3 (anti-Dsg3) and BP180, respectively. In June 2017, the patient abdomen appeared erythema, tense blister and erosion on the basis of normal skin, suddenly. Histological examination demonstrated a subepidermal blister with eosinophils and lymphocytes, direct immunofluorescence (DIF) revealed deposition of IgG and C3 along the basement membrane zone. ELISA) showed the positive of antibody to BP180, negative of antibodies to Dsg1 and Dsg3. After given low dose glucocorticoid and immunomodulators, the lesions were quickly cleaning, and the anti- BP180 shifted to negative.

PO05-006

### **Correlation of autoantibodies and cytokines related to eosinophilia with disease severity in patients with bullous pemphigoid**

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**Objective** Bullous pemphigoid(BP)is an autoimmune blistering skin disease with pruritus which preferentially affects the elderly. Lesional histopathology reveals subepidermal splitting and an eosinophil-rich inflammatory infiltration in the upper dermis. Treatment options are mainly oral and/or topical superpotent corticosteroids which frequently need consolidation therapy. However the aged BP patients are often too vulnerable to suffer from the side effects of long-term corticosteroids taking. So our study is aimed to investigate the correlation of clinical severity and the laboratory findings to evaluate the outcome in the early stage of BP.

**Methods** We measured the titres of anti-BP180 IgG antibodies, anti-BP230 IgG antibodies and anti-BP180 NC16A-specific IgE antibodies in sera from twenty-four BP patients and the levels of IL-5 and ECP in sera from twenty of these patients using ELISA kits. Evaluate the disease severity according to the BPDAl. Analyze the data by statistic methods.

**Results** The serum levels of anti-BP180 NC16A-specific IgE antibodies and IL-5 were significantly higher than that in health control, with statistical significance ( $P=0.004$ ,  $P=0.001$ ). Titres of anti-BP180 IgG antibodies correlate positively with disease severity ( $r=0.663$ ,  $P<0.01$ ), and with the severity of urticarial erythema ( $r = 0.427$ ,  $P <0.05$ ). The serum level of IL-5 has a positive correlation with eosinophils count in peripheral blood ( $r=0.524$ ,  $P<0.05$ ) and with the severity of urticarial erythema ( $r = 0.651$ ,  $P <0.01$ ).

**Conclusion** The serum level of anti-BP180 NC16A-specific IgE antibodies was significantly higher but it showed no

association with disease severity. An increased serum level of IL-5 has been detected in BP patients and it correlates positively with the count of eosinophils in peripheral blood and reflects the severity of urticarial erythema phenotype of BP.

PO05-007

### Analysis of prevalence of internal medicine diseases in patients with bullous pemphigoid

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**Background** To investigate the prevalence of internal medicine diseases in 130 patients with bullous pemphigoid.

**Method** This was a retrospective case-control study involving 130 patients with bullous pemphigoid and 130 age-sex matched controls.

**Results** The main neurological diseases in the BP group were stroke, dementia and epilepsy. Univariate logistic regression analysis showed that the occurrence of stroke and dementia were higher than in the control group ( $P = 0.001, P = 0.042$ ). Multivariate logistic regression analysis showed that stroke is major risk factors for BP patients ( $OR = 2.722, 95\% CI [1.436-5.160], P = 0.002$ ). The occurrence of diabetes, cardiac arrhythmia, chronic renal failure, hypertension and chronic obstructive pulmonary disease were higher than in the control group, but was of no significant difference in the two groups ( $P > 0.05$ ). Although malignancy was more common among patients in the control group, this difference was no statistically significant in the two groups ( $P > 0.05$ ).

**Conclusions** Stroke is correlated with bullous pemphigoid. It is imperative to adopt a holistic approach to patient care in view of the increased rates of neurological disorders among bullous pemphigoid patients. Control of internal medicine diseases should be emphasized in the treatment of bullous pemphigoid patients.

PO05-008

### Pemphigoid nodularis mimicking nodular prurigo in an immunocompetent patient

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**Background** Bullous pemphigoid, which is a chronic autoimmune blistering disorder, has several subtypes. Pemphigoid nodularis is a rare and unusual clinical variant of pemphigoid, which can be potentially misleading for the attending dermatologist. Herein we report a clinical case of this rare disease.

**Methods** A 65-year-old female patient presented with a 8-month history of skin pruritus and a 6-month history of pruritic nodules and tense blisters disseminated over her trunk and extremities. Dermatological examination, skin biopsy and direct immunofluorescence analysis were performed for the diagnosis.

**Results** On examination, the patient had widespread excoriated papules and nodules mainly on her trunk and extremities, with tense blisters on both hands and feet. Skin biopsy showed subepidermal blister formation with scanty infiltrate composed of eosinophils, lymphocytes and neutrophils in the dermis. Direct immunofluorescence of perilesional skin demonstrated linear deposition of IgG and C3 at the basement membrane zone. Laboratory analysis showed circulating IgG to BP180 and BP230 (both  $>200$  U/mL; normal  $<20$  U/mL). This was consistent with a diagnosis of pemphigoid nodularis. Treatment with immunosuppressive drugs and strong-potency topical corticosteroid was initiated. Our patient responded well to oral prednisone 35 mg daily (0.5 mg/kg per day), thalidomide 100 mg daily and topical halometasone cream twice a day.

**Conclusion** Pemphigoid nodularis is a rare and unusual clinical variant of bullous pemphigoid and dermatologists should pay attention to this variant in differential diagnosis of prurigo nodularis.

PO05-009

**A case of pediatric pemphigus vulgaris with nail dystrophy**

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Pemphigus vulgaris (PV) is a severe autoimmune bullous dermatosis, which is chronic and recurrent. It is rare and incurable, not only in adult but also in pediatrics. We report a case of pediatric pemphigus vulgaris with nail dystrophy. A 10-year-old boy came to our clinic for erythema, blisters and erosion on the scalp, face, trunk and extremities with itching for 4 months. Physical examination presented that nail-sized erythema, rice-sized erosive lesions and a few of black crust. Nikolsky's sign was positive. The nail dystrophy was found. Although the result of histopathological examination was atypical, the diagnosis was confirmed by direct immunofluorescence examination and enzyme-linked immunosorbent assay.

PO05-011

**MiR-338-3p: a potential biological diagnostic marker of pemphigus**

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**Background** Pemphigus is one of the most common autoimmune bullous disease in the world. Traditional diagnostic methods are cumbersome and time-consuming. Furthermore, pemphigus does not have a good indicator for disease severity, which could guide in the adjustment of treatment. MicroRNAs are endogenous small RNAs that is stable in vivo, which could be used as biomarkers for some autoimmune diseases. Previously, miR-338-3p has been proven significantly up-regulated in pemphigus patients. The aim of this study was to investigate the diagnostic significance of miR-338-3p in pemphigus, to evaluate the correlation between miR-338-3p and disease severity and the potential molecular mechanism of miR-338-3p.

**Methods** Patients diagnosed as pemphigus, bullous pemphigoid, pemphigus in disease control and healthy volunteers were recruited, in which miR-338-3p expression level was measured using RT-qPCR. Active pemphigus patients accepting treatment were followed up for at least 2 weeks to investigate the expression change of miR-338-3p during treatment period. The target gene of miR-338-3p were screened through computer-aided algorithm and verified by RT-qPCR, Western blot and Luciferase activity assay.

**Results** MiR-338-3p was specifically increased in patients diagnosed as pemphigus. The expression level of miR-338-3p gradually decreased after effective treatment. Moreover, miR-338-3p expression was independently correlated with disease severity defined by PDAI and ABSIS criteria. Up regulation of miR-338-3p could significantly suppress RNF114 expression at mRNA and protein level in vitro.

**Conclusions** The miR-338-3p could be used as a biomarker of pemphigus, as well as an indicator of disease severity. RNF114 is the target gene of miR-338-3p, which probably participates in the regulation of disease activity of pemphigus.

PO05-012

**A case of infantile bullous pemphigoid**

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**Background** Bullous pemphigoid (BP) is rare in children and even rarer in infants. Here we report a case of BP in a six-month-old girl.

**Methods** A six-month-old girl developed multiple tight bullae, initially on left hand. Oral antihistamine and external drug had been previously treated, but erythema and bullae were increasing and spreading all over the body. Physical

examination revealed the presence of papules and annular urticarial erythematous plaques, some topped by vesicles and blisters. Nikolsky sign was negative in all lesions. Skin pathological feature showed eosinophils infiltrated in the upper dermis, direct and indirect immunofluorescence showed linear deposition of immunoglobulin G (IgG) along basement membrane zone, anti-BP180 ELISA values are significantly higher than normal.

**Results** Treatment with topical halometasone cream and oral prednisolone acetate at the dosage of 2.5 mg/kg/d led to a rapid improvement. At the 9th month of prednisolone acetate therapy, both of the anti-BP180 titers and the eosinophile granulocyte decreased to normal and the patient is free of disease with a dose of 2.5 mg/d.

**Conclusions** Although the cause of infantile BP is unknown, many scholars conclude its clinical characteristics: rash generated in the first 1 years of childhood; the rash characterized by tension blisters or bulla on the basis of erythema; it more commonly presents on the palms, soles, and face, and genital involvement is seen less frequently; it usually responds well to first-line therapy with systemic corticosteroids.

PO05-015

### **Bullous pemphigoid combined with anti-Caspr2 encephalitis**

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Bullous pemphigoid (BP) is an autoimmune blistering skin disorder that most commonly affects the elderly, characterized by circulating and tissue-bound autoantibodies directed against hemidesmosomal components: BP180 and BP230, both presenting at the dermalepidermal junction (DEJ) and human brain. Anti-contactin-associated protein-like 2 (Caspr2) encephalitis is an autoimmune encephalitis that occurs mainly in elderly males, diagnosed by cell-based antibody tests (a titre of 1: 200 was the best upfront cut-off), aided by mediotemporal signs of encephalitis on brain MRI. Two-thirds of patients improved under various types of immunotherapy. BP has been associated with an increased prevalence of neurological disease (ND), including multiple sclerosis (MS), dementia, stroke and Parkinson disease. We are going to report an unusual neurologic complication of BP, anti-Caspr2 encephalitis.

PO05-016

### **A case of bullous pemphigoid complicated by Turner syndrome**

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A 35-year-old female had pruritic erythema, papules and papulovesicles distributed on the trunk and extremities for 8 days with previous history of congenital ovarian deficiency for 30 year. Histopathological examination of the right thigh displayed a subepidermal blister with a few of eosinophils infiltration. Direct immunofluorescence of skin showed linear depositions of IgG and C3 along the basement membrane zone. BP 180 antibody of peripheral blood was found positive. The diagnosis was bullous pemphigoid complicated with Turner syndrome.

PO05-017

### **Clinical and pathological analysis of four cases of nodular pemphigoid**

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**Background** To analyze the clinical characteristics, histopathological and immunopathological features of nodular pemphigoid, to further understand the pathogenesis and diagnosis of the disease;

**Methods** To summarize the clinical manifestations of 4 cases of nodular pemphigoid, and use histopathological

examination, direct immunofluorescence staining, salt split skin indirect immunofluorescence and specific antibody detection to clarify the diagnosis of the disease, and to combined with domestic and foreign related literature for discussion and summary.

**Results** The clinical manifestations of 4 cases were mainly papules, nodules, and plaques, with or without blisters; histopathology showed hyperkeratosis, thickening of spinous layer, eosinophilic infiltration around the superficial dermal blood vessels, of which 2 cases were not observed subepithelial fissure. Four cases of direct immunofluorescence can be found in the basement membrane with IgG linear deposition, of which two cases of salt split skin indirect immunofluorescence showed that IgG deposited on the epidermis side. In 4 patients, The results of anti-BP180 and BP230 antibody detection showed that half of the patients showed negative antibodies. The combination therapy of glucocorticoids with minocycline and niacinamide has a significant effect.

**Conclusion** Nodular pemphigoid is a special clinical subtype of bullous pemphigoid. The clinical manifestations are very similar to skin diseases such as nodular prurigo and prurigo bullous epidermolysis. It needs to be identified. The histopathological examination of the disease and the results of pemphigoid antibodies may not be specific, and direct immunofluorescence and salt split skin indirect immunofluorescence as well as the good treatment response to glucocorticoid treatment can better help clarify the diagnosis of the disease.

## *PO06 Collagen Diseases and Vasculitis*

PO06-002

### **Occlusive dressing and epidermal growth factor cream as a successful treatment for multiple, large, systemic lupus erythematosus-associated vasculitic ulcers**

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Cutaneous vasculitis is found in 19–28% of patients with systemic lupus erythematosus (SLE) and can manifest as skin ulcers caused by muscular vessel vasculitis. In refractory large, deep vasculitic ulcers, surgical treatments may be considered. However, for SLE patients, surgical treatment for vasculitic ulcers may be burdensome, because the successful surgical wound healing cannot be guaranteed due to patients' underlying vasculitis and immunocompromised condition. Herein, we report a case in which the ulcers were successfully treated with occlusive dressing and epidermal growth factor (EGF) cream.

A 31-year-old woman presented with numerous painful ulcerations on both upper extremities. Some ulcers were deep to expose subcutaneous layer and the size of ulcers ranged from 10 to 500 mm in diameter. The patient had been treated with prednisone (20-60 mg/day), cyclosporine (100-200 mg/day), and hydroxychloroquine (300-400 mg/day) for 4 years. Due to patient's medical conditions, and various size and numerous numbers of ulcers, we treated her with occlusive dressing and application of EGF containing cream rather than surgical approaches. After a week of daily occlusive dressing with EGF cream, the 1-2 cm sized, small ulcers began to improve, and about 2 months later, large ulcers also almost healed with scarring. This case showed that multiple, various sized ulcers caused by SLE vasculitis can be improved with only conservative treatment including occlusive dressing and topical application of EGF.

PO06-003

### **A case of generalized acquired cutis laxa**

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Cutis laxa (CL) is characterized by loosening of the skin due to loss of elastic fibers. Generally, it presents as autosomal dominant, autosomal recessive and X-linked forms and acquired form is rare. About 50% of acquired cutis laxa occurs secondary to a variety of conditions, including inflammatory skin diseases (urticaria, lupus erythematosus,

erythema multiforme), hypersensitivity reactions, complement deficiency, multiple myeloma and sarcoidosis. Histopathological hallmark of cutis laxa is short, fragmented, clumped and even absent elastic fibers. There is no specific way for treating the disease and preventing the progression of it.

A 54-year-old male patient presented to our hospital with pendulous, inelastic skin of the face, neck, shoulders, and trunk which was 7 years ago. His skin was hyperextensible but did not return to its normal shape after stretching. There was no joint hyperextension or Gorlin sign (the ability to touch the tip of the nose with the tongue). He had a history of pancreatic cancer, hiatal hernia, prostate cancer, and thyroid cancer about 5 years ago. 4 mm punch biopsy was done on inelastic skin of trunk and normal skin of leg. Histopathology of inelastic skin showed decreased and fragmented elastic fibers in the dermis with Verhoeff's staining, of which were not present in normal skin. A genetic study showed no pathogenic variant of Ehlers-Danlos syndrome or CL. We diagnosed the patient as generalized acquired CL and herein, we report this case which is very rare in worldwide.

PO06-007

### **Immunoabsorption: a potent treatment option for severe systemic lupus erythematosus**

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Systemic lupus erythematosus (SLE) is an autoimmune disease primarily affecting women during childbearing age. Autoantibodies and circulating immune complexes of SLE can impact various organs and tissues. The traditional treatments of severe SLE include glucocorticoids and immunosuppressants. However, these treatments are often associated with significant toxic or side effects. Some cases of SLE are even resistant to these immunosuppressive therapies. The development of immunoabsorption (IA) and plasma exchange (PE) has provided an alternative style of treatment that is effective and less toxic. PE removes not only immunoglobulins but also plasma proteins, including coagulation factors and albumin. IA is a more promising treatment that has overcome the drawbacks of PE, which selectively clears away autoantibodies. Since the first report that IA was used in treatment of severe lupus nephritis in 1979, it has become a new option to the treatment of severe SLE. Accumulating evidence has proven that treatments with IA can result in decreased autoantibodies, reduced proteinuria, ameliorated disease activity, which requires lower glucocorticoids dosages. However, exacerbation of SLE after IA without subsequent immunosuppressive therapy has been reported in a lot of studies. This phenomenon reminds us that although IA can quickly and effectively remove autoantibodies and immune complexes, it cannot inhibit the production of autoantibodies and the negative-feedback regulation. In combination with glucocorticoids and immunosuppressants, IA has been shown to be effective and safe in the treatment for severe SLE

PO06-010

### **Thalidomide in the treatment of pyoderma gangrenosum: a case series of 8 patients**

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**Background** Pyoderma gangrenosum (PG) is an uncommon, chronic, recurrent inflammatory skin disorder that is classified as a neutrophilic dermatose. It is often associated with systemic diseases, like gastrointestinal pathology, hematological disorders and autoimmune inflammatory diseases. Although the first line treatment is systemic steroid (prednisone 1-2 mg/kg/d), it causes dose dependent side effects. The aim is to minimize the adverse events during course of treatment.

**Method** We collected the files of PG patients that were treated with thalidomide in our ward during the last 10 years (2005-2014). We evaluated their treatment plans, healing time and recurrence.

**Results** A total of 8 patients were analyzed, including seven men and one woman, aged between 19-56 year-old (mean age  $40.75 \pm 15.21$ ), all the cutaneous lesions were occurred in multiple locations. Three of them were associated with ulcerative colitis, 2 with myelodysplastic syndrome. Two patients were treated with thalidomide (75 mg/d) alone, and others were given thalidomide (5 with 75 mg/g, 1 with 200 mg/d) with low-dose systemic steroid

(prednisone 0.5-1 mg/kg/d) or immunosuppressor (ciclosporin A). Complete recovery of lesions was observed in 6 patients either alone (3/8) or with ulcerative colitis (3/8) after treatment, but lesion recurred in one of 6 patients. Two patients with PG and MDS died within 2 years despite intensive treatment.

**Conclusion** Thalidomide alone or combined with low-dose systemic steroid is an effective therapy for PG with ulcerative colitis. This treatment plan aids in reducing the dosage of systemic steroid and immunosuppressor.

PO06-015

### **Analysis of possible structures of inducible skin-associated lymphoid tissue (iSALT) in lupus erythematosus profundus**

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Lupus erythematosus profundus (LEP) is a variant of lupus erythematosus, involving the deep dermis and subcutaneous fat. LEP is characterized by the presence of lymphoid follicles and germinal centers (GCs). However, it remains unknown whether these lymphoid structures correspond to the lymphoid tissues such as cutaneous tertiary lymphoid organs (TLOs).

Previously, we identified dynamically orchestrated cellular elements in murine contact dermatitis that resembled of lymphoid structures, which we termed inducible skin-associated lymphoid tissues (iSALT). We subsequently reported structures analogous to iSALT in human secondary syphilis, suggesting that iSALT can also exist in humans. Here, we studied ectopic lymphoid tissues in the lesions of LEP by immunohistochemistry and compared their characteristics to those of TLOs.

We demonstrated that lymphoid follicles of LEP were composed of B-cell follicles intermingled with CXCL13-expressing cells, distinct aggregations of T cells, and some blood vessels expressing peripheral node addressin (PNAd). These findings indicate that lymphoid follicles of LEP can be considered as a type of iSALT. Further study is necessary to determine whether the developmental variation of lymphoid follicles corresponds to the severity and chronicity of disease or responsiveness to treatments.

PO06-016

### **Unbalanced Th17/Treg axis intensifies the bleomycin-induced systemic sclerosis-like phenotypes of Treg-specific Fli1 conditional knock out mice.**

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Systemic sclerosis (SSc) belongs to connective tissue diseases, whose characteristics include vasculopathy, fibrosis, autoimmunity, and inflammation. Recent studies revealed that the suppressive capacity of regulatory T cells (Tregs) is diminished in SSc, while Th17 cells alternatively gain their function. Also, a growing number of reports have indicated Th17/Treg axis plays pivotal roles in many diseases like rheumatoid arthritis, psoriasis, multiple sclerosis, and inflammatory bowel disease. Our group has so far accumulated plenty of evidence that transcriptional factor Fli1 (Friend leukemia integration 1) has multifaceted involvements in the development of SSc. In this study, we revealed that Fli1 directly controlled foxp3 transcription in human Tregs. Furthermore, Treg-specific Fli1 conditional knock out (TregCKO) mice presented SSc-like phenotypes including the emergence of autoantibodies, upregulated inflammation, small vessel dysfunction, and the enhancement of fibrosis in bleomycin-induced SSc model. Additionally we provided amounts of data that suggest weakened Treg function with Th17 polarization is the basis bringing out these SSc-like abnormalities of TregCKO mice. These findings would help us better understand the contribution of dysregulated Th17/Treg balance in SSc.

PO06-017

**Serum levels of Soluble PD-1 and PD-L2 associate with abnormal immune activation and disease severity in patients with systemic sclerosis**

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The programmed death-1 (PD-1) and its ligand, PD-L1 and PD-L2, show a co-inhibitory effect to T cells, prevents excessive immune reaction. Many studies have been shown that soluble PD-1 (sPD-1) and soluble PD-L1 (sPD-L1) can activate immune cells through blocking PD-1/PD-Ls pathway. However, there is no study about the biological function of sPD-L2. Systemic sclerosis (SSc) is generally regarded as an autoimmune disorder because of the presence of autoantibodies. Although the pathogenesis of SSc remains unclear, previous studies have suggested that abnormal immunity plays an important role in disease progression. In this study, we focused on the serum levels of sPD-1 and sPD-L2 in SSc to investigate the relationship of PD-1/PD-L2 and disease severity.

Serum levels of sPD-1 and sPD-L2 were examined in SSc ( $n=94$ ) and healthy controls ( $n=25$ ) by enzyme-linked immunosorbent assay. Serum levels of sPD-1 and sPD-L2 in SSc were significantly higher than in healthy controls ( $P<0.01$ ). SSc patients with elevated serum levels of sPD-1 and sPD-L2 had significantly higher frequency of diffuse cutaneous SSc and more frequent involvement of pitting scar/ulcer and pulmonary fibrosis than those with normal levels ( $P<0.05$ ). Serum levels of sPD-1 and sPD-L2 significantly correlated positively with modified Rodnan total skin thickness score and anti-topoisomerase I antibody titers and correlated inversely with %VC and %DLco.

These results suggest that elevation of serum levels of sPD-1 and sPD-L2 are associated with the disease severity and may play important roles in disease development of SSc.

PO06-018

**A case of Schnitzler syndrome**

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Schnitzler syndrome is a rare disorder characterized by chronic urticarial eruption and monoclonal IgM gammopathy variably combined with intermittent fever, arthralgia or arthritis, lymphadenopathy, hepatomegaly and/or splenomegaly, leukocytosis, and elevated erythrocyte sedimentation rate. A 41-year-old Japanese man presented with 5-months history of urticarial eruption that appeared and faded repeatedly. He also suffered from arthralgia and high fever that occurred 2 months after the onset of skin eruption. Feverish episodes lasted for one or two weeks with or without arthralgia. Antibiotics showed no therapeutic effect. Clinical examination showed widespread pruritic erythematous plaques on the trunk and extremities. Histopathological examination revealed perivascular infiltration of lymphocytes and neutrophils in the dermis. Laboratory tests demonstrated elevated CRP at 13.8 mg/dl, WBC at 18900/ $\mu$ l, erythrocyte sedimentation rate at 107mm/hour, serum amyloid A at more than 500  $\mu$ g/ml, serum IgM at 223 mg/dl (normal range: 33-183 mg/dl). Serum protein immunoelectrophoresis revealed a small but definitive amount of IgM-kappa monoclonal protein. Therefore, his diagnosis was made as Schnitzler syndrome. No mutation was detected in panel analysis of 22 autoinflammatory-disease-causing genes including nucleotide-binding domain protein and leucine-rich repeat containing gene family, pyrin domain containing 3 (NLRP3), except for compound heterozygous P369S-R408Q variant in familial Mediterranean fever (MEFV) gene. He was treated with colchicine. Although feverish episodes, arthralgia and skin lesions lasted after colchicine was introduced, the frequency and degree of these symptoms were reduced.

PO06-019

**A case of subcutaneous-type sarcoid with granulomatous vasculitis**Ai Fujioka<sup>1</sup>, Yukiko Tsuji<sup>1</sup>, Hideki Nakajima<sup>1</sup>, Masasi Nomoto<sup>2</sup>, Keiko Miura<sup>3</sup>, Ko-Ron Chen<sup>4</sup>, Shigetoshi Sano<sup>1</sup>

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A 75-year old woman visited our hospital because of subcutaneous nodules in her left neck, which appeared 1 month ago. She had a sense of mild itching and tenderness for the lesion. She was topically treated with corticosteroids, but no improvement was obtained. Histopathological examination revealed a granuloma in the superficial to mid dermis, composed of histiocytes, Langhans- and foreign body-type giant cells. Notably, there was a granulomatous vasculitis with fibrinoid degeneration in the lower dermis. Immunohistochemistry of the lesion using the specific antibody did not detect *P. acnes*. Laboratory examination of her serum did not show increased angiotensin converting enzyme, anti-nuclear antibody, PR3 or MPO-ANCA. No significant changes were found in the images of X-ray or CT scan of the chest, or a data of electro cardiogram. Ophthalmologic and otolaryngologic examination did not find any involvement. We diagnosed this patient as having subcutaneous-type sarcoid with granulomatous vasculitis (GV) without systemic involvement. Four months later, the skin lesion spontaneously regressed. Cutaneous sarcoid with GV is a very rare condition. However, we should be aware of potential development of systemic sarcoidosis, which might be preceded by cutaneous sarcoid.

PO06-020

**Systemic sclerosis-like vasculopathy underlies the delayed wound healing in Fli1/Klf5 double-heterozygote knockout mice: Abnormal angiogenesis activation with vasculogenesis impairment**Kouki Nakamura<sup>1</sup>, Yoshihide Asano<sup>1</sup>, Takuya Miyagawa<sup>1</sup>, Megumi Hirabayashi<sup>1</sup>, Takashi Yamashita<sup>1</sup>, Ryosuke Saigusa<sup>1</sup>, Shunsuke Miura<sup>1</sup>, Tetsuo Toyama<sup>1,2</sup>, Takehiro Takahashi<sup>1</sup>, Yohei Ichimura<sup>1</sup>, Takashi Taniguchi<sup>1</sup>, Ayumi Yoshizaki<sup>1</sup>, Maria Trojanowska<sup>2</sup>, Shinichi Sato<sup>1</sup>

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Systemic sclerosis (SSc) has three cardinal features including vasculopathy, fibrosis, and immunological abnormalities. We have previously reported that the heterozygosity of two transcriptional factors, Fli1 and Klf5, reproduces this triad in mouse. In this study we focused on the vasculopathy of SSc, which is characterized by two types of defect: abnormally activated angiogenesis and impaired vasculogenesis. Angiogenesis is neovessel formation mediated by proliferation of pre-existing endothelial cells, while vasculogenesis is de novo vessel formation by migration and transdifferentiation of bone marrow-derived endothelial progenitor cells. We demonstrated that this dual aspect of SSc vasculopathy is regenerated in Fli1/Klf5 double-heterozygote knockout mice leading to the wound healing delay. Furthermore, the contribution of Fli1 and Klf5 to each aspect was investigated. The revelation of detailed mechanisms underlying the vasculopathy of SSc will give us insight in the fundamental mechanisms underlying this disorder.

PO06-001

**Lichen sclerosus et atrophicus-a disease that can not be neglect**

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An otherwise healthy 32-year-old female presented with vulva skin turns to white gradually after has children for 1 year. The patient had received a diagnosis of vitiligo or lichen simplex chronicus at other hospitals before, and no treatment was given. She denied any family history. The patient complained of severe itching and unable to sexual intercourse or gynecological examination. On examination, hypopigmented patch with atrophic surface showed parchment-like appearance change, and hardening in the vulva, narrowing of the vaginal orifice, clitoris became smaller and urethral deformation. She physical examination was unremarkable. Informed consent was obtained from the patient and then a biopsy was taken from the lesion. Histopathological examination showed hyperkeratosis with follicular plugging, atrophy of epidermis and fibrosis with edema in the upper dermis, accompany with infiltration of inflammatory cells. Melanophage was visible on the superficial layer of the dermis. The features of the lesion and pathology were consistent with lichen sclerosus et atrophicus (LSA). LSA is a chronic progressive inflammatory autoimmune-induced disease that primarily affects the external genital-anal region. LSA may occur at any age but usually occurring in prepubertal and postmenopausal women. Intense and recalcitrant pruritus is the hallmark of LSA. The exact mechanism of LSA is not yet know, autoimmune may be involved in the pathogenesis. The first-line treatment for LSA is topical high-potency. This patient refused use corticosteroids and was treated with topical tacrolimus and under follow-up. This case to bring awareness to misdiagnosed atypical clinical presentations of this condition when faced with patients with vulvovaginal symptoms. It is crucial to detect, diagnose, and treat LSA at their early stage for improving the cure rate and the quality of life of patients.

PO06-004

**Research of Cthrc1 and TGF-β1 effect on fibroblast collagen synthesis in fibroblast**

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**Background** The transforming growth factor beta 1 (TGF-β1) is increased in various fibrotic diseases. TGF-β1 can promote extracellular matrix (ECM) deposition. The overexpression of ECM can promote the cell's proliferation and the synthesis of matrix. Collagen triple helix repeat containing1(Cthrc1) gene is an inhibitor of TGF-β1, the Cthrc1 has the effect of anti fibrosis by inhibition of type I and type III collagen.

**Methods** Using qRT-PCR and Western Blot technique to explore the expression of Cthrc1 and TGF-β1 in the fibroblasts and the interaction between them.

**Results** In the treated fibroblasts mRNA and protein levels, qRT-PCR and Western Blot showed: The expression of Cthrc1 in PCMV6-XL4-Cthrc1 and TGF-β1 factor group was higher than those in normal control group. The expression of Cthrc1 in si-Cthrc1 and SB inhibitor group were lower than those in normal control group, the difference had statistical significance ( $P < 0.01$ ). Compared with the blank group, the relative expression of TGF-β1 in TGF-β1 factor group were higher than those in normal control group, the difference had statistical significance ( $P < 0.01$ ). Compared with the blank group, the relative expression of TGF-β1 in PCMV6-XL4-Cthrc1 group were little higher than those in normal control group, the difference had no statistical significance ( $P > 0.05$ ). Compared with the blank group, the relative expression of TGF-β1 in si-Cthrc1 and SB inhibitor group were lower than those in normal control group, the difference had statistical significance ( $P < 0.01$ ). In four treated groups of fibroblasts, the different expression of Cthrc1 and TGF-β1 was statistically significant between different groups ( $P < 0.05$ ).

**Conclusion** It is found that the TGF-β1 may stimulate the Cthrc1 secretion increased in mRNA and protein level, while the increase of Cthrc1 had no significant effect on the content of TGF-β1.

PO06-005

**A case of reactive perforating collagenosis**

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A 54-year-old woman presented hyperkeratotic erythematous papules with crusts on her extensor side of limbs and buttocks, there was indentation with stick scab in the center of the papule. A histological study showed superficial ulceration, there were few bacterial masses in the inflammatory necrotic layer of ulcerative area, and large collagens were seen in the center and bottom of the ulcer, there were lymphocytes and eosinophils around the superficial dermis. The Masson staining shows transepidermal positive coloured collagen fibers in the ulcer inflammatory necrotic substance, and there was no abnormal distribution of elastic fibers. Dermoscopy showing a brown crust in the center and white structureless area at the periphery of the lesion, as well as some hairpin vessels at the periphery. The diagnosis is reactive perforating collagenosis.

PO06-006

**Pancreatic panniculitis in a patient with chronic pancreatitis: A rare condition in misdiagnosed**

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Pancreatic panniculitis is a rare condition characterized by subcutaneous fat necrosis in association with pancreatic disease. Systemic release of pancreatic enzymes is thought to be the main cause, and which could also induce inflammations in joints. Acute and chronic pancreatitis, pancreatic tumor (especially acinar cell carcinoma) are supposed to be the most common conditions. Peoples with pancreatic panniculitis and polyarthritis are usually in poor prognosis. Occasionally, patients may lack symptoms of pancreatic conditions, and often resulting in missed diagnosis and misdiagnosis. Here, we report a case of patient developed arthritis and panniculitis as the only significant symptom of chronic pancreatitis, which was initially misdiagnosed as hard erythema and not until we made a correct diagnosis as pancreatic panniculitis, did her potential pancreatic diseases had been found. But finally, the patient had a negative outcome. Subcutaneous fat necrosis can be a prompt symptom of pancreatic disease, once suspected, a thorough work-up to identify the underlying disease should be performed, and immediate treatment of the associated condition was plumped

PO06-008

**Correlation between the expression of lncRNAs in PBMC and their clinical manifestations in patients with SLE**

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**Background** Long non-coding RNA (lncRNA) is a functional non-protein-coding class whose length is longer than 200 nucleotides. lncRNA plays an important role in cell life activities through various mechanisms such as epigenetic modification and post-transcriptional processing, regulation and translation. lncRNA is associated with cells differentiation and activation, in the innate and acquired immune system it also plays an important role in regulating the differentiation and activation of immune cells, and affects the development of systemic lupus erythematosus (SLE). The study of the mechanism of lncRNA in the development of SLE can lay the foundation for finding the marker, drug and biological therapy target for the early diagnosis of the disease. This issue will explore the differences in the expression of lncRNA in peripheral blood mononuclear cells (PBMC) of patients with SLE and its relationship with the disease.

**Methods** This study divided into two groups, SLE group (SLE) and healthy control group (NC). 13 cases of SLE patients and healthy participants were collected peripheral venous blood 10ml, after total RNA was extracted from PBMC of two groups of subjects and combined with linc00861 differentially expressed in SLE patients screened by high-throughput sequencing (RNA-seq) and HISAT, String Tie and Blotting analysis, qRT-PCR further validate linc00861 and analyze its association with the clinical manifestations of SLE disease.

**Results** The high-throughput sequencing technology (RNA-seq) analysis of 63677 Ensembl gene ID gene expression matrix, then final 11044 gene symbol expression matrix, there are 1584 lincRNAs. The expression matrix was transformed into logarithm, the final lincRNAs that were significantly differentially expressed in SLE patients were predominantly linc00861. The RT-qPCR results showed that the expression of linc00861 in SLE patients was significantly lower than that in healthy controls (NC group), the difference was statistically significant ( $P < 0.05$ ). The correlation between the expression level of linc00861 and its clinical manifestations in patients with SLE was analyzed. It was found that the expression level of linc00861 in PBMC of SLE patients was negatively correlated with the SLEDAI score; the expression level of linc00861 in patients with proteinuria was significantly lower than that in patients with proteinuria; linc00861 The expression level is lower than that of patients with normal complement of SLE.

**Conclusion** The expression of linc00861 in PBMC of SLE patients was significantly lower than that of the normal control group and was related to disease activity and the degree of renal involvement. The results suggest that linc00861 may be involved in the pathogenesis of SLE, linc00861 may serve as a new target for the treatment of systemic lupus erythematosus point.

PO06-009

### Recognition of stiff skin syndrome

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**Background** Stiff skin syndrome (SSS) is characterized by progressive, noninflammatory fibrosis of the skin that often causes limitation in joint mobility. Induration occurs mostly in a bilateral distribution. Recently, segmentally distributed SSS with delayed onset has been reported. Whether segmental SSS has different clinical features or prognosis hasn't been studied further.

**Method** We presented eight new cases of SSS and review all reported SSS in China to analyze their clinical features, histopathology and prognosis.

**Results** Of our 8 cases, including 2 girls and 6 boys, 6 cases occurred before 3 year old and 2 cases occurred at 6 year old; 6 cases were bilateral and 2 cases were segmental, involving mostly buttock, lumber, shoulder and axillaries. All skin biopsy revealed the histopathologic features of SSS such as thickened collagen bundles, lack of inflammation, and adipocyte entrapment. After reviewing the all 40 cases reported in China, we found that except one case occurred on neck and 3 cases on shoulder, all others affected buttock and groin. Four cases have no hypertrichosis. Total 13 cases distributed segmentally and 27 cases were bilaterally. Among of these 40 cases, only 5 cases described the adipocyte entrapment, others didn't refer to the phenomenon. No familiar history was reported.

**Conclusions** Diagnosis of SSS is made by coupling clinical and histopathologic features. Most SSS were sporadic and segmental type of SSS were not rare with delay onset; adipocyte is important histopathological feature of SSS. However, genetic factor and prognosis should be study further.

PO06-011

### Acute hemorrhagic edema of infancy: a case report

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Acute Hemorrhagic Edema of Infancy (AHEI) is a rare leukocytoclastic vasculitis that usually occurs in children

younger than 2 years of age, clinically characterized by the classical triad: palpable purpuric skin lesions, edema and fever, and is commonly misdiagnosed as Henoch-Schönlein purpura(HSP). AHEI is also characterized by its self-limited course with complete and spontaneous recovery occurring between 1 and 3 weeks. We report a case of 29 months of children, The skin rash started in lower limbs and spread to his buttocks, vulva, trunk and face quickly, not involving the scrotum and mucous membrane, the patient was in good general condition without fever. After given symptomatic treatment, the children recovered without sequelae.

PO06-012

### **CTCF regulates CD70 expression in lupus CD4+ T cells**

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**Background** Overexpression of CD70 in systemic lupus erythematosus (SLE) CD4+T cells, which is associated with DNA hypomethylation and histone hyperacetylation within CD70 (TNFSF7) gene promoter, may contribute to overproduction of autoantibodies by overstimulation of autologous B cells. The multifunctional transcriptional factor CTCF has been shown to bind to some hypomethylated DNA fragment and to recruit histone deacetylase (HDAC). With the aim of exploring if and how CTCF regulate CD70 gene expression and take a further step to the molecular pathogenesis of SLE

**Methods** Peripheral mononuclear cells (PBMCs) were isolated from SLE patients and normal controls. And CD4+ T cells were isolated by magnetic microbeads. Real-time PCR was applied to detect the mRNA level of CD70 and CTCF, and protein level of CTCF was measured by western blotting. Chromatin immunoprecipitation (ChIP) was conducted to detect the binding of CTCF and CD70. Furthermore, the regulation of CTCF on CD70 expression was investigated by CTCF siRNA and overexpression plasmid.

**Results** CTCF expression was significantly decreased on CD4+ T cells from lupus patients compared with healthy controls on both mRNA level and protein level, negatively correlated to the expression of CD70. CTCF was detected binding to the promoter region of CD70, and negatively regulating the expression of CD70.

**Conclusion** CTCF could directly, negatively regulate the expression CD70.

PO06-013

### **A case of acquired reactive perforating collagenosis associated with psoriasis**

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A 66-years-old Asian female presented with papules, plaques, scales on her trunk and four limbs with itch for 1 year. Six months ago, she was reviewed with excoriated papules with umbilicated central regions and keratotic plugs on her lower limbs. Dermoscopy showed: the papules on the left lower limb had umbilicated central regions and keratotic plugs. Histopathology examination of the papule on the left lower limb showed collagen bundles in the dermis, perpendicular to the surface, perforating a necrotic epidermis. Histopathology examination of the plaque on the breech showed hyperkeratosis, parakeratosis, hypogranulosis, acanthosis and lymphocytic infiltrate in the dermis. The diagnosis was acquired reactive perforating collagenosis associated with psoriasis.

PO06-014

**Acquired reactive perforating collagenosis: A case report**

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A case of Acquired reactive perforating collagenosis is reported. A 69-year-old woman presented with a 6-month history of very itchy skin. Physical examination showed excoriations and papules with keratotic plugs on the leg. Histopathological examination showed collagen bundles in the dermis, perpendicular to the surface, perforating a necrotic epidermis. The keratotic plug contained parakeratotic cells and a lymphocytic infiltrate, confirming the diagnosis of ARPC.

*PO07 Cosmetic Dermatology*

PO07-003

**A face-split study to evaluate the effects of microneedle radiofrequency with Q-switched Nd: YAG laser for the treatment of melasma**

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**Background** Laser toning using a low-fluence 1064 nm Q-switched Nd: YAG laser is one of the most frequently used treatment modalities for melasma. However, this therapy is time consuming because it requires a lot of treatment sessions. Recently, it has been reported that transdermal radiofrequency (RF) is effective for the treatment of melasma.

**Aims** To determine whether microneedle RF conduction could be an adjunct therapy for melasma, we have studied the effect of simultaneous treatments with laser toning and RF for melasma.

**Methods** Fifteen patients with melasma underwent five sessions of laser toning and microneedle RF on the right side of the face, and only laser toning on the left side. Responses to treatments were evaluated using the Mexameter<sup>®</sup> score, the pigmentation and severity index (PSI) score, and the patient's overall assessment. Additionally, an electron microscopic study of a skin biopsy was performed.

**Results** Both laser toning and combination therapy showed significant decreases in the Mexameter<sup>®</sup> and PSI score after five treatment sessions. Combination therapy showed a more significant improvement of melasma than laser toning. No remarkable side effects were reported. Electron microscopic analysis showed a greater number of vacuolar changes and increased loosening of melanocytes and adjacent epidermal cells after combination therapy.

**Conclusions** The combination treatment of laser toning and microneedle RF therapy showed a better therapeutic effect for melasma than laser toning alone. Therefore, the microneedle RF technique could be a new and safe adjunct therapy for the treatment of melasma.

PO07-004

**Treatment of ear keloids by surgical excision combined with intralesional corticosteroid injections and pulsed dye laser therapy**

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Keloids are hyperproliferation of dermal collagen resulting from abnormal healing response to injury. The ear is one of the most frequent locations for keloid formation. Numerous treatments have been utilized for keloid but, treatment options are still controversial. We assess the efficacy of excision combined with postoperative intralesional

triamcinolone acetonide (TA) injection and pulsed dye laser (PDL) therapy for treating earlobe and helix of the auricle keloids.

A retrospective study was performed between January 2008 and December 2017. A total of 19 patients had a surgical excision followed by postoperative intralesional TA injections every 1 month for several months. Of these, 8 patients received additional PDL therapy at the sametime.

Nineteen patients with a total of 21 keloids were included. The follow-up period ranged from 2 to 60 months (mean: 17 months). Seven patients received preoperative intralesional TA injection and PDL therapy to reduce keloid size. After the surgery, TA intralesional injections were given 2 to 13 times (mean: 4.5 times). Eight patients received an additional 1 to 12 PDL therapy (mean: 3.8 times) at the sametime. In patients treated with intralesional TA injections alone, 6 patients showed significant or moderate improvement (54%) and 5 patients had a recurrence (46%). However in patients treated with intralesional TA injections and PDL therapy, 7 patients show significant improvement (87%) and only 1 patient had a recurrence (13%).

The combination of surgical excision and intralesional TA injections and PDL therapy can be considered for the first line therapy in patients with ear keloids.

PO07-007

### **Niacinamide and 12-hydroxystearic acid prevented benzo(a)pyrene and squalene monohydroperoxides induced hyperpigmentation in skin equivalent**

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**Introduction** Ambient air pollution is suggested to be closely associated with different skin problems, including pigment spots. The damage effect of pollutants could be directly mediated by polycyclic aromatic hydrocarbons (PAHs) or indirectly through peroxides of skin surface lipids. This study aimed to investigate the pigmentary effect of pollutants and explore the protective effect of two cosmetic actives, niacinamide and 12-hydroxystearic acid (12-HSA), in an in vitro pigmented living skin equivalent (pLSE) model.

**Methods** Benzo(a)pyrene, a representative PAH, or squalene monohydroperoxide (SQOOH), a well-characterized sebum peroxide component, was applied to the top of the pLSE models which were treated together with or without niacinamide or 12-HSA. After 3 days of pollutant challenge and active treatment, model surface lightness (L\*) was measured using a spectrometer, model viability was evaluated using methyl thiazolyl tetrazolium (MTT) method, model structure and tyrosinase activity was assessed by histology and DOPA staining.

**Results** It was revealed that both BaP and SQOOH significantly impaired model viability, reduced L\* value and activate tyrosinase activity. Two bioactives, niacinamide and 12-HSA, significantly resored the model viability and reversed the melanogenic effect induced by pollutants.

**Conclusions** In a summary, our study demonstrated that pollutants can directly or indirectly impair skin function and induce skin pigmentation, indicating the detrimental effect of environmental pollutants toward skin. On the other hand, the cosmetic actives, niacinamide and 12-HSA could effectively alleviate the detrimental effects caused by pollutants, thus can serve as promising anti-pollution bioactives for skin care.

PO07-028

### **Successful treatment of scar using microneedle radiofrequency device with polydeoxyribonucleotide injection**

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Scarring after severe inflammation is a common cosmetic problem accompanied by psychological distress. There is no gold standard treatment for post inflammatory scars, and many physicians seek for optimal combination therapy. Recently, some studies have shown efficacy of microneedle radiofrequency for the treatment of scars, however

reports of combination therapies are limited.

A female patient complained of depressed scar formation on left V1 and V2 dermatome after herpes zoster. The patient received treatment of microneedle radiofrequency device and adjuvant polydeoxyribonucleotide injection every 2-3 weeks. After 5 sessions of treatment A male patient complained of depressed and hypertrophic scar formation on forehead and neck after deep fungal infection. This patient also received combination treatment and after 5 sessions of treatment the patient was very satisfied with the result.

Polydeoxyribonucleotide which is known faster healing of wounds and boosting of neocollagenesis of photoaged skin was used as the adjuvant therapy in these cases. A treatment of microneedle radiofrequency device with polydeoxyribonucleotide injection may be an effective combination treatment option for severe inflammatory scars

PO07-030

### **Skin aging and interfollicular epidermal stem cells**

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Skin is located at the outermost layer of the human body and acts as a protective barrier. It is known that skin aging is associated with decreased number and activity of keratinocyte stem cells, and reduced capacity for cellular proliferation and differentiation. We analyzed the changes of stem cell number by using new marker of interfollicular epidermal stem cells (IFE-SCs). Tissue samples from six normal volunteers with different ages were collected. Immunohistochemical staining was performed. Moreover, a skin equivalent (SE) model treated with suberoylanilohydroxamic acid (SAHA, a HDAC inhibitor) was prepared to elucidate the role of HDAC1. The expressions of p63, involucrin, K10, integrin  $\alpha 6$ , integrin  $\beta 1$ , and type IV were analyzed. Finally, rapidly adhering (RA) keratinocytes to type IV collagen, which have been identified to represent epidermal stem cells, were subjected to Western blot analysis with antibodies against HDAC1. HDAC1 was expressed mainly in the differentiating cells, and p63 positive cells were observed mainly in the basal layers. Interestingly, there was a minor subpopulation comprising of p63-positive and HDAC1-negative in the basal layers and the number of this subpopulation was obviously decreased with aging. SAHA treatment increased the epidermal thickness and p63 positive cells in a dose dependent manner. After SAHA treatment, differentiation markers were also decreased, while basement membrane markers were increased. In Western blot, HDAC1 was not expressed in RA cells. In conclusion, the combination of p63(+)/HDAC1(-) can be a potential marker for distinguishing the epidermal stem cells. In summary, any stem cells are under the influence of SC niche and the signaling involved in SC niche maintenance is important for stem cells fate. Because cells are regulated by the activation and repression of specific genes, regulation of niche related genes will be an important strategy in anti-aging approach. Some of these approaches will be presented.

PO07-001

### **Applications and efficacy of platelet-rich plasma in dermatology: a systematic review of clinical trials**

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**Purpose** To discuss whether PRP has significant improvements in dermatologic applications in different areas, and the problems left in the applications of PRP.

**Methods** We searched pubmed for clinical trials with 'skin', 'dermatology', 'facial', 'hair', 'scar', 'rejuvenation', 'Laser resurfacing', 'cosmetic', 'wrinkle', and 'plastic', and there are 184 literatures in total. Removing the duplications, we group them into 'facial rejuvenation', 'hair', 'scar' and 'synergistic effect with fractional CO<sub>2</sub>'.

**Results** 9495 literatures show in total while searching for platelet-rich plasma. As clinical trials, comparative trials and meta analysis included, 184 literatures are left. With removing the duplications, there are 36 literatures about dermatological applications, including 'facial rejuvenation', 'hair', 'scar', 'vitiligo' and 'synergistic effect with

fractional CO<sub>2</sub>. Also, 7 of the 36 literatures proving it noneffective are also discussed in the review.

**Conclusion** The application of PRP in dermatology has significant improvements, but the lack of RCTs limits the development. And the majority of clinical trials have small sample sizes, making the results no sufficient evidence. More RCTs are needed for the increasing demand of new dermatologic therapeutics, and we need adequate samples urgently to make the results more persuasive. And more details should be discussed before clinical application.

PO07-002

### **Inhibitory effect of topical calcineurin inhibitor on the laser-induced angiogenesis**

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**Objective** To verify the inhibitory effect of topical tacrolimus ointment on laser-induced angiogenesis through animal experimentation and the erythematotelangiectatic rosacea (ETR) patients receiving optoelectronic treatment.

**Methods** On each Leghorn chicken comb, 5 different fixed regions were set as corresponding groups: (1) control group; (2) laser group; (3) laser + drug base group; (4) laser + 0.03% tacrolimus group; (5) laser + 0.1% tacrolimus group. The drug base, 0.03% and 0.1% tacrolimus ointment were applied to the last three groups after a single laser operation, twice a day, for 1 week. The phenomenon of "vessel recanalization", rate of capillary decrease, mRNA and protein of VEGF and HIF- $\alpha$  in each group were evaluated and compared after the treatment. Furthermore, ETR patients were randomly divided into the treatment group and control group. All patients first received DPL treatment. After the DPL treatment, only the patients in the treatment group were given 0.03% tacrolimus ointment for external use, twice a day. Scores of the patients were blindly assessed.

**Results** It showed that tacrolimus ointment could significantly inhibit the phenomenon of vascular recanalization and increase the rate of capillary decrease after laser operation, and it could significantly reduce the mRNA and protein expression of HIF- $\alpha$  and VEGF. Differences in patients' integral after treatment, therapeutic index and the effective rates of telangiectasia, between the treatment group and control group, were statistically significant.

**Conclusion** Topical tacrolimus could significantly inhibit laser-induced angiogenesis and improve the efficacy of optoelectronic treatment in ETR patients.

PO07-005

### **Clinical application of facial anatomy in the treatment of skin laxity by monopolar radiofrequency**

Kai Li, Lin Gao, Lin-Han Qian, Ni Gao, Gang Wang

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**Background** The monopolar radiofrequency is a procedure commonly used for the treatment of skin laxity from an increase in tissue temperature. However, we observed results varied by different doctors. The facial retaining ligament is a connective tissue complex that travels between soft tissues. As an anchor point, it connects the superficial muscularis aponeurotic system (SMAS), dermis, deep fascia and periosteum, supporting and fixing the facial skin and subcutaneous soft tissue in the corresponding area.

**Objectives** To investigate the efficacy of facial anatomy strategy in the treatment of skin laxity by Monopolar Radiofrequency.

**Methods** A total of 15 patients with mild to moderate facial skin laxity were treated using the Monopolar Radiofrequency based on facial retaining ligaments positions. Patients were surveyed between 1–12 months after treatment to determine degree of improvement, satisfaction, and presence of side effects.

**Results** With the new treatment strategy, 93.3% ( $n=14$ ) reported at least mild correction of skin laxity, 80% ( $n=12$ ) noticed skin texture improvement, average pain level was 7.21 (0–10 scale), and 80% ( $n=12$ ) would have the procedure again.

**Conclusion** The new monopolar radiofrequency treatment anatomical strategy is safely tolerated and efficacious for most patients.

PO07-006

### **Research progress and standardized operation of hyaluronic acid intradermal injection**

Kai Li, Lin Gao, Ni Gao, Lin-Han Qian, Gang Wang

*Department of Dermatology, Xijing Hospital, Fourth Military Medical University*

**Background** Hyaluronic acid intradermal injection which also called hydrolifting is one of the main branches of mesotherapy. In this treatment hyaluronic acid was transported into the dermis through injection. Hyaluronic acid intradermal injection can increase the amount of hyaluronic acid in the skin which achieve rejuvenation result on skin by delivering hyaluronic acid to the dermal skin layer. However, due to the disorder of hydrolifting market in China, there are a lot of effectively and safety problems.

**Objectives** Based on the research progress to standardized operation of hyaluronic acid intradermal injection treatment.

**Methods and Results** The method of hyaluronic acid intradermal injection is including manual injection, Mesogun injection and needleless injection. In this article we showed different clinical programs of hyaluronic acid intradermal injection. We also demonstrated the standardized operation of hyaluronic acid intradermal injection. The treatment of foreign body granuloma after the hyaluronic acid intradermal injection is showed in the last.

**Conclusion** The hyaluronic acid intradermal injection is efficacious for skin rejuvenation, standardized operation of hyaluronic acid intradermal injection is necessary for the safety and effectively.

PO07-008

### **Treatment of freckle with the large spot size, low fluence Q-switched 1064 nm Nd: YAG laser**

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**Objective** To investigate the effectiveness and safety of large spot size, low-fluence, Q-switched 1064-nm Nd: YAG (QSNY) laser treatment of facial freckles.

**Methods** Fifteen adult patients with facial freckles who received treatments with low-fluence large spot size 1064-nm QSNY laser were recruited from the laser department from February, 2013 to April 2016. After written informed consent, the patients received treatments at 2-3 weeks intervals for 3-5 times, the laser settings were 1064 nm wavelength, 7 mm spot size, 1.5-2.5J/cm<sup>2</sup> fluence. The patients were then followed up for 6 months after treatments. All the before and after pictures were evaluated by two dependent dermatologists and the patients self evaluation were also recorded.

**Results** Eight of fifteen patients had achieved excellent improvement (76–100%) at the end of treatment, and 4 of 15 patients had good improvement (51–75%). The remaining 20% had modest effects. In patient self-evaluation of the degree of improvement of freckles, nine (60%) assessed it as very much to much improved (76–100%), and six (40%) assessed it as moderate (51–75%). All the cases enrolled reported minor erythema which only lasted for several hours, and had no influence for the next day's work.

**Conclusion** The large spot size, low-fluence 1064-nm QSNY laser treatment is a safe procedure for the treatment of facial freckles which showed improvement with no significant side effects and no down time.

PO07-009

**Paradoxical hyperplasia in a Chinese man: A rare side effect associated with cryolipolysis**

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A 49-year-old man with Fitzpatrick skin type III presented with unwanted fat in the lumbar region. The patient had received a single cycle of cryolipolysis with the coolcurve applicator on two sites only in the left lumbar following the manufacturer's recommended vacuum settings. At the 1 month follow-up visit, the fat reduction was visible, but by the 2-month follow-up visit after the treatment, paradoxical hyperplasia appeared. This tissue growth stabilized in size by approximately 5 months post treatment, and remained apparently unchanged thereafter. The patient had not had any significant weight change during his post treatment course. The waist circumference of the treatment area was increased by 1.5cm. He was referred to our practice for further evaluation. On physical examination, he had well-demarcated, subcutaneous enlargement of the left lumbar tissue corresponding to the treatment sites. The affected tissue is mobile, more firm than adjacent fat, and has a well demarcated border. No changes of the overlying skin were appreciated. Examination of the subcutaneous tissue mass by Ultrasound Imaging System showed an increased depth of the subcutaneous fat layer in the treated areas when compared to controls. This patient did not elect corrective treatment, e.g., by liposuction or excision, and was still in the follow-up.

PO07-010

**Combination of tretinoin and 1565 nm non-ablative fractional laser for the treatment of acne**

Lin Gao, Li Wang

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**Objective** To evaluate the efficacy and safety of tretinoin in combination with 1565 nm M22-ResurFx non-ablative fractional laser (NAFL) for the treatment of acne and prevention of scar.

**Methods** 20 patients with acne were recruited from Department of Dermatology, Xijing Hospital, Fourth Military Medical University from 2015 to 2016. All subjects were treated with 1565 nm ResurFx NAFL for 3 times with 4 weeks intervals between two treatment sessions in combination with oral tretinoin. Medical photographs were taken before and after each treatment. The improvement degree of acne and scar and postoperative adverse reactions of the patients were evaluated before and after treatment using Visia and Antera3D® radiography system.

**Results** 16 patients with acne and scar were satisfied with an average effective rate as 85%. The combined treatments significantly decreased indexes of acne, scar and grease degree ( $p < 0.05$ ) as compared to before treatment. All patients tolerated treatment process and the average painful scores were 3 to 7 points. The treatments resulted in a variable degree of swelling, erythema, scab and hyperpigmentation, but all these adverse disappeared within 2-14 days post-treatment. We didn't observe any scar and blisters after the treatment.

**Conclusions** The combination of tretinoin and 1565 nm M22-ResurFx NAFL is an effective therapy to treat acne and prevent scar with less adverse reactions, and is worthy of clinical promotion and application.

PO07-011

**Update of laser and light therapies in melasma**

Yao-Jia Luo

*No.1 Hospital of China Medical University*

Melasma is an acquired hyperpigmentation condition characterized by symmetric, brownish-gray irregular macules and patches on the sun-exposed area. Topical medication, chemical peeling, oral medications are commonly used strategies for melasma. But the ultimate outcome is unsatisfactory due to the resistance and high recurrent rate. Laser

and light-based therapies has become an alternative approach to treat patients with recalcitrant melasma. Intense pulsed light (IPL), low energy Q-switched lasers (694 nm ruby laser, 577 nm alexandrite laser, 532/1064 nm Nd: YAG laser), non-ablative fractionated laser may achieve satisfactory result, with the risk of recurrence and hyper/hypo-pigmentation in long-term effects. Picosecond lasers, fractionated radiofrequency, and laser-assisted drug delivery are gaining more important positions as adjuvant methods.

PO07-012

### **Acneform reactions induced by laser hair removal of long-pulse Nd: YAG**

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Many articles have reported on the side effects of laser hair removal, such as blistering, scarring, pigment changing, paradoxical hair growth and livedo reticularis. However, acneform reactions were rarely referred to. To the best of our knowledge, few cases have been reported on acneform reactions induced by laser hair removal, and none of the previous cases has been confirmed by histopathology. Herein, we described, for the first time, a case of acneform reaction induced by laser hair removal of long-pulse neodymium: yttrium-aluminium-garnet (Nd: YAG). Confocal Laser Scanning Microscopy (CLSM) in vivo of her right face revealed dendrite cells aggregation around the follicles, edema and telangiectasia of papillary dermis. As well, the histopathological biopsy showed changes resembling rosacea.

PO07-013

### **Comfort and result: Pain and energy management during monopolar radiofrequency treatment**

Kai Li, Lin Gao, Li Wang, Ni Gao, Gang Wang

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**Background** The monopolar radiofrequency is commonly used for the treatment of skin laxity. The goal is to induce thermal damage to thus stimulate neocollagenesis in deep layers of the skin and subcutaneous tissue. However, during the treatment patients describing pain attributed the heat created by the device. For optimal cosmetic outcome, it is essential to heat the dermis to the appropriate temperature. If suboptimal heating occurs, there will be suboptimal improvement in laxity.

**Objectives** To investigate the balance of heating energy and control the pain during the monopolar radiofrequency treatment.

**Methods** 15 patients with mild to moderate facial skin laxity were treated using the Monopolar Radiofrequency by using pain medication, multiple passes delivering and other energy and pain management strategy. Patients were surveyed between 1–12 months after treatment to determine degree of improvement, satisfaction, and presence of side effects.

**Results** With the new treatment strategy, 93.3% ( $n = 14$ ) reported at least mild correction of skin laxity, 80% ( $n = 12$ ) noticed skin texture improvement, average pain level was 7.21 (0–10 scale), and 80% ( $n = 12$ ) would have the procedure again.

**Conclusion** Monopolar Radiofrequency treatment combined with appropriate pain and energy management strategy was safely tolerated and efficacious for patients, and can be applied to human facial skin to create tightening without surgical incisions and recovery time.

PO07-014

**Retracted**

PO07-015

**A study of combining nano-microneedle with 5% minoxidil in androgenetic alopecia treatment**

Yuan-Hong Li

*The First Hospital of China Medical University*

In this study, we aimed to evaluate the efficacy and safety of combining nano-microneedle with 5% minoxidil in androgenetic alopecia treatment, and made a comparison to only use 5% minoxidil externally. Furthermore, the pathogenesis of AGA and the mechanism of action of minoxidil on hair growth were investigated. 36 Chinese patients were recruited in the clinical trial and another 6 volunteers with the same disease were taken scalp tissue sampling which used in the laboratory investigation. Subjects were 22 to 50 years old and diagnosed to be the androgenetic alopecia according to clinical manifestation. The study shows that 5% minoxidil is an effective topical drug for Androgenetic alopecia. Delivering 5% minoxidil by nano-microneedle which enhances the cutaneous permeation of drug is safe, and show a better efficacy in treating AGA compared with merely using 5% minoxidil externally. The expression of vegf and bmpr- I a downregulates in bald area of AGA patients, thus there may be some connection between AGA and VEGF signal pathway as well as BMP signal pathway.

PO07-016

**Clinical evaluation of the efficacy and safety of combined bipolar radiofrequency and Intense Pulsed Light vs. bipolar radiofrequency alone for facial/hand skin rejuvenation treatment.**

Fei-Yan Lin, Xiao-Juan Yao

*Hainan Province Skin Disease Hospital*

**Background** Different treatment modalities are used for the treatment and esthetic improvement of aging skin. This study evaluated the efficacy and safety of a novel technology, which combines bipolar radio frequency (RF) and Intense Pulsed Light (IPL) for the cosmetic treatment of aging skin.

**Objective** To compare combined RF and IPL vs. RF alone, in terms of efficacy, safety, tolerability, and patient

satisfaction on skin rejuvenation.

**Methods** Three Chinese volunteers of skin type III-IV, 34-year-old, 50-year-old and 56-year-old (volunteer NO1, NO2 and NO3), with facial/hand laxity and wrinkle, received one treatment with combined RF and IPL on the right half of their faces (volunteer NO1, NO2) / right hand (volunteer NO3), and RF alone on the left half of their faces (volunteer NO1, NO2) / left hand (volunteer NO3). Clinical photos of front and bilateral sides of the subjects' faces/hands were taken at baseline and at 4, 12 weeks after the treatment initiation.

**Results** At the 1 and 3 months follow-up, skin laxity, texture, investigator and patient improvement assessments, and satisfaction were significantly better in the half face/hand treated with combined RF and IPL.

**Conclusion** IPL and RF can both increase collagen synthesis in the dermis and have been applied to skin rejuvenation. In the past, the joint application of these two projects was intermittent and alternating. Few people use these two techniques in one treatment. In this half-part-control experiment, RF is performed immediately after the IPL treatment. This study demonstrates the safety and efficacy of combining RF and IPL for the esthetic improvement of aging faces. Combined RF and IPL treatment was more efficient than IPL alone in improving skin laxity, wrinkle and texture.

PO07-017

### **Enhancing hair growth in male androgenetic alopecia by a combination of 1550 nm fractional erbium-glass laser therapy and 5% minoxidil tincture**

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**Objective** To evaluate the effect of 1550nm fractional erbium-glass laser therapy combined with 5% minoxidil tincture in the treatment of Male Androgenetic Alopecia (MAA).

**Methods** 39 MAA patients were randomly divided into two groups. The first was combined therapy group who treated with 1550nm fractional erbium-glass laser combined with 5% minoxidil tincture, and the second group was topical therapy group who treated with topical 5% minoxidil tincture only. Laser treatment was performed 15 times with 2-week intervals. All patients were treated for 28 weeks.

**Results** The mean investigators effective rates assessment was significantly higher in combined therapy group than in topical therapy group (85% vs 73.68%). The same results in the mean patients' effective rates assessment (75% vs 57.89%). No more hair loss has been observed in our study. The improvement of hair density was significantly higher in combined therapy group than in topical therapy group (50.47% vs 27.82%) ( $P < 0.01$ ). However, the hair shaft diameter had no significant difference between two groups after 28 weeks' treatments. No severe adverse effects were observed.

**Conclusion** Combined use of 1550nm fractional erbium-glass laser and 5% minoxidil tincture can significantly improve the treatment efficiency in MAA.

PO07-018

### **Comparison of a pulsed dye laser and a narrow-spectrum intense pulsed light in the treatment of acne vulgaris**

Jin Chen, Yu Liu, Yang-Mei Chen, Qing Zhao

*The First Affiliated Hospital of Chongqing Medical University*

**Objectives** To compare the efficacy and safety of Pulsed Dye Laser (PDL) and of Narrow-Spectrum Intense Pulsed Light (DPL) treatment for moderate to severe facial acne.

**Methods** Two participant with moderate to severe acne were treated with a single pass of a DPL on the left of the face and PDL on the other half during each treatment session. Patients underwent four treatment sessions at 2-week intervals and were followed up at 8 and 12 weeks after treatment commencement. Before every treatment and at follow-up visit, we will take a picture of the left, right and front of face by VISIA.

**Results** At the whole treatment, significant improvement was seen in both the PDL and DPL of the two patients. But the effect of PDL is better than DPL, especially the oil secretion rate and pore.

**Conclusions** PDL and DPL were safe and effective for the treatment of facial acne.

PO07-019

### **Clinical efficacy of gold microneedles radiofrequency combined with AAPE in the treatment of atrophic acne scars**

Cai-Xia Tu, Yan-Lin Liu, Yu-Ling Yang, Lu Wang

*The Second Affiliated Hospital of Dalian Medical University*

**Objective** To investigate the clinical efficacy and safety of gold microneedles radiofrequency combined with AAPE in the treatment of atrophic acne scars.

**Methods** 23 patients at the age of 20-45 years old with facial atrophic acne scars were recruited in the study. Gold microneedles radiofrequency combined with AAPE were used for 3 times at a period of 4-6 weeks. Photographs were taken before each treatment, 1 month after each treatment, and 3 months after the end of the total treatment. The efficacy was evaluated using a 4-point scale, an ECCA weight score, and a texture value in the VISIA Skin Image Analyzer.

**Results** Of the 23 patients, 21 patients completed the treatment and follow-up. After 3 treatments, 21 patients were improved to varying degrees, of which 14 cases were significantly improved, and the clinical effective rate was 66.7%. Compared with before treatment, the texture value in the VISIA Skin Image Analyzer and ECCA weight score of atrophic acne scars decreased statistically significant ( $P < 0.05$ ). The average score of VAS was 3.35 points, and the average level of patients' satisfaction was 3. No serious adverse reactions occurred except redness and slight swelling.

**Conclusion** Gold microneedles radiofrequency combined with AAPE for the treatment of atrophic acne scars is effective and safe.

PO07-020

### **Dermoscopic features of alopecia areata and their clinical significance**

Jia Liu

*First hospital of Shanxi Medical University*

**Objective** To observe the features of alopecia areata (AA) with dermoscopy and study its significance for clinical diagnosis.

**Methods** A handheld dermoscope was used to observe the balding scalp of 85 patients with AA, 40 patients with androgenetic alopecia (AGA), as well as normal scalp of 45 human controls without hair loss. Clinical information was also collected from these subjects. Then the data were analyzed.

**Results** The most common dermoscopic features was yellow dots, followed by broken hairs, short vellus hairs, black dots, exclamation mark hairs, telangiectasia, coiled hair/spiral hair, hair tapering. The incidence rate of yellow dots, black dots, broken hairs, hair ring/spiral hairs, short vellus hairs, exclamation mark hairs, telangiectasia, coiled hair/spiral hair, hair tapering were significantly higher, in AA patients than controls. The incidence rate of hair diameter diversity > 20%, brown peripilar sign, scalp pigmentation and telangiectasia was lower in patients with AA than in patients with androgenetic alopecia. The prevalence of short vellus hairs was negatively correlated with the area of AA. While yellow dots, black dots, white dots and hair tapering was positively correlated with the area of hair loss.

**Conclusions** The yellow dots, broken hair, black dots, short vellus hair are more sensitive for AA, exclamation mark hairs is highly sensitive for the confirmation of diagnosis of AA. The differences between the dermoscopic features and the different types of AA were small. Short vellus hair can be used to determine the recovery of the disease. The yellow dots, black dots and hair tapering may be used as an indicator of the progress of the patients with AA.

PO07-021

**Er:YAG fractional laser combining BBL treatment for pediatric hypertrophic scars**

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**Aim** To evaluate the safety and compare the efficacy of 2,940 nm Er: YAG fractional laser (EYFL) combining 560 nm BBL (broadband light) with 10600nm CO2 fractional laser (CO2FL) for treatment of pediatric hypertrophic scars after burn.

**Methods** Thirty children with burn scald or operated in six months hypertrophic scars, which of thickness less than 4mm, randomly divided into three groups ( $n=10$  in each group) Treatment interval was 8-12 weeks. Patients in groups were separately treated by EYFL, EYFL-BBL (2-4 weeks interval) and CO2FL. As follows, silicone gel, pressure therapy and other traditional treatments were applied as well. Improvement percentage of pains and pruritus, doctors' evaluation, patients' satisfaction and Vancouver Scar Index (VSS) score were adapted for evaluation after 6 months.

**Results** There was no significant difference in age baseline. VSS scores were calculated and evaluated by decreasing percentage, which shew  $25\pm 5.4\%$ ,  $38.2\pm 13.9\%$  and  $29.4\pm 6.7\%$  in EYFL, EYFL-BBL, and CO2FL group with significant difference ( $P<0.05$ ). The decrease percentage of VSS score in EYFL-BBL group was significantly lower than in EYFL group ( $P<0.05$ ) and CO2FL group ( $P<0.05$ ), via no significant difference between EYFL and CO2FL group. However, no significant difference among those 3 groups was observed both of physicians' and patients' satisfactory score, as well as 100% mitigation rates of pains and pruritus.

**Conclusion** Mini-invasive Er: YAG and CO2 laser can effectively treat hypertrophic scars with thickness less than 4mm at early stage, and curative effect can be improved by combining with broadband light.

PO07-022

**Repair methods and strategy for complication of cosmetic laser**

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**Objective** To discuss the the cause factor of the complication of cosmetic laser, and to research the methods for preventing and repairing the complication of cosmetic laser.

**Methods** A system review of cases of complication of cosmetic laser was carried in our hospital from January 2014 to January 2017. There are 127 cases of erythema, 46 cases of blister, 35 cases of hyperpigmentation, 18 cases of depigmentation, 9 cases of irritability. Take statistic analysis for treatment opportunities and selecting equipment and treatment parameter, treatment time and postoperative care. Research for kind, morbidity and cause factor of complication of cosmetic laser, and take active intervention to treat the complication, such as laser and injection using drug, cool wet external application or treating by intensed pulsed light, laser and so on.

**Results** Cosmetic laser complications occur primarily due to inappropriate operational techniques, treatment parameters, and post-operative care

**Conclusions** Proper patient selection, select personalized parameters reduce treatment frequency and energy density; test facula; proper nursing can prevent the complication of cosmetic laser

PO07-023

**Applications of skin imaging techniques in cosmetic dermatology**

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**Background** The development of imaging techniques has dramatically changed the practice of medicine, especially

the field of dermatology due to its visual nature and the accessibility of the cutaneous surface to be sampled. Domestic and foreign scholars have introduced the applications of skin imaging techniques in dermatology, while the applications in cosmetic dermatology haven't been well illustrated.

**Methods** Currently used skin imaging techniques include skin photography, dermoscopy, skin ultrasound, reflectance confocal microscopy, optical coherence tomography, multiphoton imaging and emerging skin surface imaging techniques. To get a better illustration of all imaging techniques above, we did a literature review for analysis.

**Results** Skin imaging techniques are widely used in different fields of dermatology, may assist in the diagnosis and differential diagnosis of skin diseases and evaluate the effects of cosmetic treatment. With their noninvasive, in vivo, real-time, dynamic features of observation, applications of imaging techniques in cosmetic dermatology have attracted increasing attention.

**Conclusions** Here we provide a review of skin imaging techniques used in cosmetic dermatology and introduce their characteristics and various applications in detail.

PO07-024

### **Efficacy and safety of 532nm KTP laser in the treatment of port-wine stains: A case series.**

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**Objective** To compare the efficacy and adverse reactions of 532nm KTP laser and 595nm pulsed dye laser in the treatment of port wine stain.

**Methods** The lesions of enrolled patients were randomly divided into two areas. One area was treated with 532 nm KTP laser and another area was treated with 595nm pulsed dye laser, once every 2 months for 4 times. If the skin lesion was smaller than the size of a coin, the patients would be randomly included in the KTP laser treatment group or the pulsed dye laser treatment group. The efficacy and safety of laser treatment for skin lesions were evaluated before treatment, immediately after treatment and 2 months after treatment.

**Results** There was no significant difference in the cure rate between 532nm KTP laser and 595nm pulsed dye laser. Some patients who were resistant to pulsed dye laser treatment were sensitive to the treatment with 532 nm KTP laser. There were less pain and purpura happened among the group of 532nm KTP laser. There was no significant difference in pigmentation between the two groups.

**Conclusion** 532 nm KTP laser has similar efficacy to 595 nm pulsed dye laser and relatively less adverse reactions in treating port-wine stains. It can be used as an alternative treatment of port-wine stain.

PO07-025

### **Excision of apocrine glands and flaps with selective preservation of subcutaneous fat septal vessels for therapy of bromhidrosis**

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**Objective** In order to overcome disadvantages of complications, recurrence and lower efficacy in treating axillary bromhidrosis, we designed a new surgical procedure and performed a clinical trial.

**Methods** A prospective, nonrandomized, concurrent control trial was performed in equal number patients of treatment and control groups. In the former, two or three incisions were made along the marked lines on the axillary crease. Subcutaneous portions of apocrine glands and follicles and adipose tissues were scissored while subdermal vascular plexus and selectively subcutaneous fat septal vessels were preserved. In the latter, 2 or 3 mini-incisions were parallel to skin wrinkles. Skin was separated with subcutaneous tissue at the same depth as the treatment group. Apocrine glands and adipose tissue underlining the dermis were removed using curette. In 6 months to one year of follow-ups, malodor, wound healing time, and surgical complications were observed.

**Results** 40 patients with axillary bromhidrosis were included in the study. At 2 weeks and wound healing time after

operation, all patients achieved complete malodor elimination, but surgical complications occurred in 1 patient in treatment group and 7 patients in control group. The wound healing time was  $10\pm 3$  days in treatment group and  $16\pm 6$  days in control group. At the end point of study, mild malodor occurred respectively in 1 patient of each group, scar occurred in 2 patients in treatment group and 18 patients in control group.

**Conclusion** The new surgical procedure not only had excellent efficacy for treating axillary bromhidrosis but a better cosmetic result.

PO07-026

### **Treatment of atrophic acne scarring with fractional micro-plasma radio-frequency in chinese patients: A prospective study**

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**Background** Acne scarring is a common disfiguring sequela of acne vulgaris which can lead to serious psychosocial problems and have a negative effect on patients' quality of life. Although a variety of approaches can be used to treat atrophic acne scars, disadvantages such as long-healing time, dyspigmentation, infections, and prolonged erythema make these treatments unsatisfactory especially for Asians. Fractional micro-plasma radio-frequency is a novel technology that produces minor ablation to the epidermis to promote rapid re-epithelialization, while the radio-frequency evoked thermal effect can stimulate regeneration and remodeling of dermal fibroblasts.

**Objective** To evaluate the clinical effectiveness and safety of micro-plasma radio-frequency for the treatment of facial acne scars in Chinese patients.

**Methods** A total of 95 patients with facial atrophic acne scars were treated by micro-plasma radiofrequency using three sessions at 2-month intervals. Patients were seen 1 week after each treatment and 1, 3, 6 months after the final treatment. Improvement was assessed by three independent dermatologists who compared photographs taken before the first treatment and 6 months after the last treatment. Adverse effects were evaluated by a dermatologist who did not participate in the study. Patients also provided self-evaluation of satisfaction levels at the last follow-up visit.

**Results** A total of 86 patients with atrophic acne scars completed the entire study. There was a significant improvement in acne scars after three treatments. The mean score of ECCA grading scale (Echelle d'Evaluation Cliniquedes Cicatrices d'Acne) was reduced from 107.21 to 42.27 ( $P < 0.05$ ). A total of 15 of 86 patients showed more than 75% improvement, 57 patients showed 50–75% improvement, and 14 patients showed 25–50%. After three treatments, all subjects showed improvements in spots, large pores, texture, UV damage, red areas, and porphyrin fluorescence. Pain, erythema, edema, effusion, and scab formation were observed in all patients. The average pain score on a visual analog scale was 6.141.12 and all patients tolerated the treatments. The average duration of erythema was 6.260.92 days. Hyperpigmentation, hypopigmentation, infections, and worsening of scarring were not seen. All patients were either "very satisfied" or "satisfied" with the treatment outcomes.

**Conclusions** Fractional micro-plasma radio-frequency is an effective and safe treatment for acne scars, and might be a good choice for patients with darker skin.

PO07-027

### **Overview of chemical peels: Why, when and how?**

Yan Wu, Shao-Min Zhong, Chen Yuan, Meng-Yen Hsieh, Li Yang

*Peking University First Hospital*

Chemical peels have a long history of more than 100 years, but it is still one of the top three aesthetic treatments according to 2017 ASPS statistic report. Why are chemical peels so popular? Chemical peels have various impacts on stratum corneum, the epidermis and dermis in producing variable depths of controlled skin injury. Subsequent regrowth from this procedure enables it to work on hyperkeratosis, hyperpigmentation and also skin rejuvenation.

When do we use chemical peels? Clinically, we use chemical peels on acne/rosacea, melasma and rejuvenation.

Chemical peels are categorized based on depth of impact, thus different peeling agents are selected for different candidates.

How should we perform the chemical peels? In order to achieve safe and effective results, we need to pay careful attention to the pre-care regimen before performing the peels. During the treatment, we should be cautious on modifying the strength of our peeling agents, the duration and the interval time in order to individualize the appropriate peeling strategies for the patients. The chemical peels can also be combined with other aesthetic treatments, such as energy-based devices. After performing the chemical peels, recommended skin care is also necessary and crucial in order to minimize PIH and maintain our efficacy.

PO07-029

### **Combining application of topical 30% salicylic acid and oral minocycline on rosacea in Asian patients: A randomized split-face controlled study**

Shu-Juan He

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**Background** Rosacea is a common chronic inflammatory skin disorder which is mostly associated with destruction of skin barrier function. Oral and topical application of antibiotic agents, as well as some physical therapies are conventional clinical management for rosacea. The aim of this study is to evaluate the efficacy and skin tolerability of topical application of 30% salicylic acid combined with Minocycline for papulopustular rosacea. The effect of 30% salicylic acid on skin barrier function of patients with rosacea was also evaluated before and after treatment.

**Methods** Thirty patients diagnosed with papulopustular rosacea were enrolled to this 4-week study. All the patients were instructed to take oral minocycline 50mg per day, and 30% salicylic acid was applied four times at 1-week interval to the randomly allocated half side faces. Clinical evaluation was obtained at baseline and one week after each salicylic acid treatment, along with the red value taken by VISIA Complexion Analysis System (Canfield Imaging Systems, Fairfield, NJ). The score of skin moisture, erythema index and transdermal water loss (TEWL) were measured, and side effects during the treatment were also recorded.

**Results** 21 of the 30 subjects had completed this study. The effective rate was 81% in Salicylic acid (SA) treatment side (E-side), higher than 57.1% in control side (C-side). The erythema score was significantly decreased at the first week in E-side, while C-side showed a later decrease at the 2nd week. The papule and pustule score was decreased at the 2nd week in both sides. There were significant decreases on VISIA red value and erythema index at the 4th week in E-side, while no significant improvement were observed in C-side. TEWL was found to decrease significantly on the E-side at the 2nd week, C-side showed a later improve at the 4th week. By the end of the therapy, none of these data showed distinctively difference between two sides. The side effects were burning, stinging or itching during the process of SA treatment in all patients. Six patients complained of dryness and 2 were observed skin on the E-side. Two patients showed aggravation of erythema after the first application of SA and All the side effects above were mild and transient.

**Conclusion** This study investigated that 50mg minocycline per day is effective and well-tolerated for papulopustular rosacea Asian patients, and the combination of 30% salicylic acid facilitates reduction of erythema and improvement of skin barrier at early course of treatment. Besides, minocycline can reduce the TEWL in rosacea.

PO07-031

### **Classification of dark circles and treatment options**

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**Background** Dark circles are common and cosmetically unpleasant problem. It usually results from a combination of factors. According to the clinical appearances, dark circle can be divided into four types: pigmented type, vascular type structural type and mixture type. Traditional tools used to assess dark eye circles are Wood's lamp and

ultrasound, but they can only help diagnose some specific type of dark circles. Nowadays, more and more doctors try to use VISIA imaging system to evaluate dark eye circles. The aim of this study was to further differentiate dark circles using VISIA imaging system and Antera 3D analyzer. To determine the efficacy and safety of different treatment regimens in pigmented type and vascular type of dark circles.

**Methods** The efficacy and safety of topical 5% tranexamic acid, combination of topical tranexamic acid with Q-switched 1064 nm laser or 755 nm picosecond laser for clinical pigmented type of dark circles; long-pulsed 1064 nm laser and 755 nm picosecond laser for vascular type of dark circles were analyzed. The laser treatments were performed for three sessions at a 4 week intervals. The subjects were followed up at baseline, Day14, Day28 Day56 and Day 84. Clinical effects were evaluated by VISIA, Antera3D, MX18, etc. The data was analyzed by SPSS 13.0 software.

**Results** Among 29 patients of clinical diagnosed pigmented dark circles, 24 were classified as mixed type, 3 pure pigmented type, 2 vascular type, after using VISIA imaging system and Antera 3D analyzer. Among 23 patients of clinical diagnosed vascular dark circles, 14 were classified as mixed type, 9 pure vascular type. For pigmented dark circles, 29 subjects completed the study. Compared with baseline, the variations of melanin index (MI) in the topical 5% tranexamic acid group were  $-40.3 \pm 67.8$ ,  $-40.2 \pm 54.4$ ,  $-46.0 \pm 63.8$  on day 14, day 28, day 56, respectively. The product combined with picosecond laser treatment group and the product combined with Q-switched laser group all showed improvement. There was no obvious difference on efficacy among three treatment groups ( $P > 0.05$ ). For vascular type of dark eye circles, 22 subjects completed the study. Compared with baseline, the erythema index (EI) in both treatment groups had a significant decrease on day 56. Long-pulsed Nd: YAG laser showed obvious changes on Day 14.

**Conclusion** VISIA imaging system and Antera 3D analyzer are more sensitive and accurate in differentiate type of dark circles. Clinically it is difficult to differentiate the pure pigmented type from mixed type, so by using VISIA imaging system and Antera 3D analyzer, can improve the accuracy in classification of dark circles and help evaluate the efficacy of treatments. For the treatment of pigmented type and mixed type of dark eye circles, Topical use of 5% tranexamic acid can greatly improve, the combination with Q-switched laser and picosecond laser treatment well be more helpful. For the vascular and mixed type of dark circles, long-pulsed 1064 nm Nd: YAG laser works on the big vascular, has quick onset of effect. 755nm picosecond laser after three treatment session also got good improvement.

PO07-032

### Survey of injection habit of botulinum toxin in Chinese dermatologists and plastic surgeons for aesthetic treatments

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*Peking Univeristy First Hospital*

**Background** Botulinum toxin type A remains the most popular nonsurgical aesthetic treatment worldwide because of safe and good efficiency. Nowadays more and more dermatologists and plastic surgeons use botulinum toxin for aesthetic treatment in clinic.

**Objective** To investigate the treatment habit of Chinese dermatologists and plastic surgeons using botulinum toxin for aesthetic treatment.

**Methods** This study involved 27 grade III hospitals and specialized hospital in China. 34 clinicians were recruited in this study, including 27 dermatologists and 7 plastic surgeons; all have rich experience in cosmetic injection therapy. The information was collected by questionnaire; including the type of botulinum toxin type A, injection techniques, injection sites and dosage.

**Results** The top three areas for botulinum toxin treatment were crow's feet lines, glabellar lines and horizontal forehead lines. BOTOX is the product used most popularly in facial aesthetic treatment. For treatment of crow's feet lines, the general injection points are 3-5 for each side, intramuscular injection is the most preferred injection level, the typical total dose of botulinum toxin is 5-15 U for each site and 2-4 U for per injection point. For treatment of glabellar lines, the general injection points are 3-5, there is consensus in injection level, both dermatologists and plastic surgeons prefer intramuscular injection for the treatment of glabellar lines. The typical total dose of botulinum toxin in dermatologists is 10-20 U, which in plastic surgeons is 5-10 U. But compared with dermatologists, plastic surgeons prefer higher dose for per injection point. For treatment of horizontal forehead lines, different clinicians

have different habit, the most popular choice for injection points are 5-10. There is no consensus in injection level, though intramuscular injection is more common than other options. The typical total dose of botulinum toxin is 5-20 U, and 1-3 U for per injection point. The dose for per injection point in plastic surgeons is much more individualized than that in dermatologists.

**Conclusion** For several aesthetic problems, there are consensus in the usage of botulinum toxin between dermatologists and plastic surgeons. But wide differences still existed in the injection habit between dermatologists and plastic surgeons, such as injection sites and dosage.

PO07-033

### **Effects of varying dermal delivery methods of different hyaluronic acid-based products on skin rejuvenation**

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*Peking University First Hospital*

**Objective** To investigate the effects of different hyaluronic acid-based products such as non-cross-linked hyaluronic acid (HA), low-cross-linked HA, combined formulation with non-cross-linked HA on skin rejuvenation through different dermal deliveries, such as intradermal injections, subcutaneous injections, microneedle dermal roller deliveries etc.

**Methods** subjects were recruited for the clinical study to compare the effects between subcutaneous injections of cross-linked HA and intradermal injections of non-cross-linked HA. The cross-linked HA was injected once; the non-cross-linked HA was injected for three times at a 4 weeks interval. All the subjects were followed up at baseline, week 4, week 12 for the assessment of wrinkles, pores, glossary and other physiological changes. We also observed the subjects who received combined formulation with microneedle dermal roller for 3 treatments at a 2 weeks interval. These subjects were followed up at baseline, week 4 and week 8 for the assessment of skin color, glossary, and elasticity changes etc., using VISIA, MX18 and MPA580.

**Results** In subjects who received non-cross-linked HA injections, the water content in stratum corneum and elasticity showed significant increase ( $P<0.05$ ) at week 4 compared to baseline. In subjects who received cross-linked HA injections, the water content in stratum corneum and elasticity showed significant increase ( $P<0.05$ ) at week 12 compared to baseline. In subjects who received combined formulation with microneedle dermal roller, the erythema value decreased significantly at week 4; skin glossary increased significantly at week 4 and week 8 compared to baseline ( $P<0.05$ ); The melanin values improved slightly but were not statistically significant; skin elasticity showed no significant changes.

**Conclusion** Subcutaneous injection of low-cross-linked HA and intradermal injection of non-cross-linked HA can both improve water content in stratum corneum and skin elasticity. Combined formulation with microneedle dermal roller delivery system can improve skin erythema and skin glossary. Skin melanin also showed slight improvements but skin elasticity may require more treatment sessions and longer time to show significant changes.

PO07-035

### **Activation of aryl hydrocarbon receptors in human sebocytes by *Propionibacterium acnes* and peptidoglycan in vitro and its significance in the pathogenesis of acne**

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**Objective** Acne is a chronic inflammatory skin disease of the human pilosebaceous unit, microbe can induce and aggravate acne, but the exact mechanism still unclear. Aryl hydrocarbon receptor (AhR), a ligand-activated transcription factor, was a key member of the family of exogenous signal transduction mediated by bHLH-PAS. AhR not only participated in the regulation of exogenous chemicals toxic metabolism, but also involved in some important biological processes, such as signal transduction, cell proliferation and apoptosis. In our research, by observing the

expression of AhR influenced by typical microbe *Propionibacterium acnes* (P.acnes) and gram positive bacteria bacterial wall peptidoglycan (PGN) in human SZ95 sebocytes in vitro, to investigate the pathogenesis of acne.

**Methods** P. acne (MOI1000) and 20 µg/ml PGN were used to stimulate the sebocytes. CYP1A1 which is the downstream of AhR pathway was detected by qRT-PCR and western blot to detect the mRNA and protein expression respectively. Other Methods Immunofluorescence (IF) and Immunocytochemistry (ICC) were used to prove nuclear transfer of AhR after activation by P.acne and PGN.

**Results** Both P.acne and PGN can increase the expression of CYP1A1 mRNA and protein in SZ95 sebocytes, and the increased expression can be antagonized by AhR antagonist CH223191. In addition, AhR protein was significantly increased in nucleus after P.acne and PGN stimulation but decreased in the cytoplasm. The results of IF and ICC were consistent with those of protein expression, and it was verified that both stimuli could induce nuclear transfer of AhR, indicating the activation of AhR by P.acne and PGN.

**Conclusion** P. acne and PGN can activate AhR in human SZ95 sebocytes. Combined with our previous research, PGN mediates the expression of inflammatory cytokines in the inflammatory pathway through regulation of AhR pathway, and changes of proliferation, apoptosis and lipid synthesis of SZ95 sebocytes after AhR silencing. Activation of AhR by P.acne and PGN may be one of the mechanisms in which microbe induces and aggravates acne and prompt us to further study its significance for the pathogenesis of acne.

PO07-036

### **Aryl hydrocarbon receptor modulates the expression of TNF- $\alpha$ and IL-8 in human sebocytes via myd88- p65NF- $\kappa$ B /p38MAPK signaling pathways**

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**Background** Acne is a chronic inflammatory skin disease of hair follicle sebaceous glands, the mechanism of inducing and aggravating by environmental pollution is unknown. In this study, we observed the effects of environmental pollutants dioxin (TCDD) and peptidoglycan (PGN) on the expression of inflammatory cytokines in SZ95 human sebocytes and the activation of innate immunity pathway.

**Methods** The expressions of inflammatory cytokines in SZ95 sebocytes stimulated by TCDD, and PGN were detected by RT-PCR and ELISA. The expressions of proteins in innate immunity and AhR signaling pathways induced by TCDD and PGN were detected by Western-blot and immunohistochemistry.

**Results** PGN can significantly stimulate the production of TNF- $\alpha$  and IL-8 in SZ95 human sebocytes. Inhibition or silencing of AhR can reduce cytokines produced by PGN and inhibit PGN-induced phosphorylation of p38 MAPK (mitogen-activated protein kinase) and p65 NF- $\kappa$ B (nuclear factor- $\kappa$ B). TCDD can enhance PGN-induced TNF- $\alpha$  and IL-8 secretion, myeloid differentiation factor 88 (myd88) expression and phosphorylation of p38MAPK (mitogen activated protein kinase) and p65 NF- $\kappa$ B (nuclear factor- $\kappa$ B).

**Conclusions** Environmental pollutants TCDD can enhance the expression of inflammatory cytokines and activation of innate immune signaling pathways stimulated by PGN. AhR silencing can block this enhancement effect, indicating that this effect is AhR-dependent, which may be one of the mechanisms that environmental pollution induces and aggravates acne.

PO07-037

**Non-invasive skin evaluation for the diagnosis, differential diagnosis and treatment of port-wine stains**

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Port-wine stains (PWS) are congenital vascular lesions consisting of ectatic capillaries and post-capillary venules in the papillary and mid-reticular layers of the dermis. The pathogenesis of PWS is not clear, which may be related to somatic gene mutation, abnormal vascular nerve ratio, heredity, etc. According to the clinical manifestation, the type of PWS is divided into red, purple and hypertrophic.

PWS is easily confused with partial vascular disease such as salmon patch, infantile hemangioma, and arteriovenous malformation. Skin biopsy, the golden standard for diagnosing PWS, could affect looking for the scar of the biopsy. So we need Non-invasive skin evaluation, dermatoscope, doppler ultrasound, reflectance confocal microscopy (RCM), to help diagnose.

The treatment of PWS is still a huge challenge, red PWS showing good therapeutic effect, but purple and hypertrophic PWS showing tolerance which is associated with depth and diameter of vascular. More attention is focused on the process of vascular change, the treatment of vascular perfusion changes can be detected by laser doppler blood flow imaging (LDPI) and laser speckle imaging (LSI) guiding the treatment of PWS.

PO07-038

**Aesthetic application of local flap in repair of periorbital skin defects**

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**Objective** To discuss the effects of local flap on the repair of periorbital skin defects and the aesthetic applications.

**Methods** in view of the periorbital skin defects caused by various reasons, 273 periorbital defects were repaired by deferent local flap according to the defect location, size. The width of defects ranged from 1\*1 cm-2\*2 cm.

**Results** All flaps were survived without necrosis, and incisions were healed at stage I. All patients were satisfied with the cosmetic results.

**Conclusion** The local flap can be applied to repair periorbital skin defects with good aesthetic effects, because of the similar texture, color and slightly scars.

PO07-039

**Combination therapy of acne scars by using versatility erbium: YAG laser platform**

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**Background** Acne scars which commonly occur after inflammatory acne vulgaris. Treatment with fractional laser devices has become increasingly popular, but there still have a lots of effectiveness.

**Objectives** To investigate the efficacy of IPL and versatility erbium: YAG laser combination strategy in the treatment of acne scars.

**Methods** A total of 20 patients, aged 18–45 years, Fitzpatrick skin types ranging from III to V, underwent IPL and versatility erbium: YAG laser combination treatment. Photographs were taken before and up to 3 months after treatment.

**Results** The total efficiency of the combined treatment group was 90%. Comparison of before and after treatment of ECCA, the score of after treatment decreased than before treatment ( $P<0.05$ ).

**Conclusion** IPL and versatility erbium: YAG laser combination strategy is an efficient and safe method in the treatment of acne scar.

PO07-041

**New method for facial aging evaluation of Chinese population**

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**Background** With the development of Chinese dermatology and related aging research. There is a growing demand for skin aging evaluation standards for Chinese population. Currently, the standard used for skin health is mostly referred to European and American populations. However, many aspects are not applicable to Chinese population due to ethnic differences. Moreover, the score of aging evaluation is usually done by experienced person, it requires the intervention of experts, on the other hand, and the error is unavoidable. It is considerable difficulty in producing high quality scientific publications within facial plastic surgery and cosmetic products prevent skin aging. The reason is lack of scientific tools that serve to transform sensations, such as more beautiful or rejuvenated, into numbers capable of being used in statistical analysis. The aim of our study is to establish and validate an objective evaluation method to define the perception of facial age in scientific studies.

**Methods** *Establishment*: 406 female samples age from 20-70 years was participated in this study, we captured arm forehead, Frown Lines, periorbital, eye corner, face and mouth images using Antera 3D instrument. The acquired images were converted into melanin concentration images, Hemoglobin relative variation images, wrinkle images as well as skin color images for further quantitative analysis. we calculated parameters such as the melanin concentration, quantity, and size of individual pigmented spots, wrinkle overall size, etc We quantified every single parameter we obtained and use them to determine the perceived age of each participant. *Validation*: Three different testers perfumed facial aging scores and age predicts for additional 23 participants respectively. We compared the analyzed data between different testers and between the estimated age and chronological age.

**Results** By means of instrument quantization, inexperienced tester can grasp the methods of detection and analysis quickly and accurately. Among the 406 samples, the quantitative analysis of wrinkle severity was positively correlated with age. Cluster analysis indicated a highly correlated relationship between forehead VS frown Lines as well as nasolabial folds VS marionette lines, reveal their consistency of the mechanism. We successfully established the age prediction model for the skin characteristics of Chinese people by using our unique algorithm. The predicted value coincides with the real age ( $r^2 > 0.85$ ).

**Conclusion** Through Antera 3D and over 400 female sample data, we successfully established the aging evaluation standard for Chinese women and established a model of high precision age prediction. The interevaluator agreement between the 3 testers suggests that Antera facial aging evaluation approach is a repeatable and accurate method to measure the aging characters and to determine the perceived age. This study is important because it reveals how the results of rejuvenation procedures can be assessed.

*PO08 Dermatitis and Skin Allergy*

PO08-003

**Associations between urine iodine and allergic diseases in the Korean National Health and Nutrition Examination Survey 2013–2015**

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The associations between excessive iodine intake and allergic diseases have not been evaluated. We investigated the associations of allergic diseases with urinary iodine concentration (UIC). In total, 5,598 participants older than 19 years who participated in the Korean National Health and Nutrition Examination Survey 2013–2015 were enrolled for analysis. Multiple logistic regression analysis was used to determine the odds ratios for allergic diseases according to UIC. Allergic diseases were associated with the highest UIC quartile. Compared with subjects in lower UIC quartiles, subjects in the highest UIC quartile were at greater risk for atopic dermatitis ( $OR= 1.471$ , 95%  $CI$ ,

1.028-2.107) and allergic rhinitis ( $OR= 1.362$ , 95%  $CI$ , 1.129-1.644) after adjustment for age and sex. This study revealed that the highest UIC quartile is associated with allergic diseases. Further laboratory and clinical studies are needed to evaluate the associations between excessive iodine intake and allergic diseases.

PO08-007

### **A case of DRESS syndrome initially misdiagnosed as *Salmonella* infection**

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A 67-old-male was referred to our department for pruritic generalized erythematous macules and patches for 2 weeks. He was initially admitted to the gastroenterology department for watery diarrhea, abdominal pain, and fever which occurred 2 weeks ago after eating undercooked chicken. The patient had medical history of hypertension, ischemic heart disease, and old cerebrovascular disease. The lab results showed increased levels of WBC, eosinophil, creatinine, amylase, lipase, liver enzyme, and hsCRP. Parasite antibody tests were all negative. The patient was treated under the impression of *Salmonella* infection and received ceftriaxone and metronidazole intravenously for a week but the symptoms did not subside. The biopsies from his abdomen and thigh showed focal spongiosis and perivascular cellular infiltration composed of lymphocytes and eosinophils. Colonoscopy was also conducted for watery diarrhea and colon biopsy also showed infiltration of eosinophils. We then suspected drug rash with eosinophilia and systemic symptoms (DRESS) syndrome and reviewed medication history. The most recently added medication was etodolac, an NSAID, from 2 months ago. The patient was advised to stop taking etodolac and was prescribed with systemic prednisolone. The lesions and symptoms improved and the lab tests became normal in weeks. We herein report a case of DRESS syndrome with pancreatitis and colonitis initially misdiagnosed as *Salmonella* infection.

PO08-013

### **Effectiveness of high-dose ultraviolet A-1 phototherapy on acute exacerbated atopic dermatitis**

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Atopic dermatitis (AD) is a chronic, inflammatory skin disease characterized by pruritus and a chronic course of exacerbations and remissions. High-dose ultraviolet A-1 (UVA-1) phototherapy has been shown to be effective in the treatment of acute exacerbated AD, however, there was no previous case study in Asians. In this respect, this study was conducted to investigate the efficacy and outcome of high-dose UVA-1 phototherapy on acute exacerbated AD. High-dose (100J/cm<sup>2</sup>) regimens of UVA-1 phototherapy were employed on 11 patients with acute exacerbation of AD. The therapeutic effectiveness was assessed according to the clinical examination before and after 5th, 10th, and last sessions of treatment. The patients were between 7 and 29 years of age with mean age of 19.2 years. The SCORAD index (scoring of AD) of 11 patients were between 41 and 89.5 with mean score of 64.2. Among the 11 patients, seven patients showed complete remission and four patients showed partial remission after last sessions of treatment. The mean SCORAD index was reduced from 64.2 (before treatment) to 23.3 (after 10th session of treatment). Mean numbers of irradiations with UVA-1 was 10.5 sessions, and no recurrence was observed during the mean follow-up period of nine months. The effect of high-dose UVA-1 phototherapy was observed early in the course of treatment and maintained for long-term follow-up duration without recurrence. We suggest that high-dose UVA-1 phototherapy can be a well-tolerated and effective alternative treatment for acute exacerbated AD.

PO08-014

**A case of fulminant type 1 diabetes in the course of drug-induced hypersensitivity syndrome (DIHS)**

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Drug-induced hypersensitivity syndrome (DIHS), or drug reaction with eosinophilia and systemic symptoms (DRESS), is a life-threatening drug reaction characterized by skin rashes, fever, leukocytosis with eosinophilia and/or atypical lymphocytosis, lymph node enlargement, and liver and/or renal dysfunction. Human herpes virus 6 (HHV-6) infections may play a role in the development of DIHS. We report a case of DIHS associated with a rare sequela of fulminant type 1 diabetes mellitus (FT1D). Plasma C-peptide was undetectable and no diabetes-related autoantibodies were detected. FT1D is a novel subtype of type 1 diabetes characterized by extremely rapid onset and complete deficiency of insulin due to the destruction of pancreatic  $\beta$  cells. However, the precise mechanisms underlying the etiology of this disease remain unclear. Early detection and intervention should be given in patients with DIHS and the serious complication of FT1D.

PO08-015

**Lichen simplex chronicus secondary to scald injury and skin flap transplantation.**

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A 50-year-old woman has suffered from chronic pruritic plaque located on right retroauricular area for around 16 years, which was diagnosed as lichen simplex chronicus. Seventeen years ago, patient had multiple scalded areas distributed throughout the body and underwent autologous skin flap transplantation for the right retroauricular wound. After the wound healed, patient started experiencing paraesthesia continuously on the skin grafted area and could not resist scratching. To our knowledge, this is the first reported case of lichen simplex chronicus secondary to scald injury and skin flap transplantation. We successfully treated this patient with dyclonine hydrochloride cream 1% and desonide cream 0.05%.

PO08-017

**A case of hyperimmunoglobulinemia E syndrome and Kimura's disease**

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Hyperimmunoglobulinemia E syndrome is characterized by recurrent skin abscess, pneumonia, eczematous dermatitis, and elevated serum IgE levels. Eczematous dermatitis and lichenification affect the face, trunk, extremities, and are pruritic, leading to excoriation which is similar to atopic dermatitis. In addition to skin lesions, there are clinical features such as characteristic facial features, and skeletal anomaly.

Kimura disease commonly presents as painless lymphadenopathy or subcutaneous masses in the head and neck region. Often patients with Kimura disease demonstrate peripheral eosinophilia and elevated level of serum IgE.

A 15-year-old male patient presented with itchy disseminated erythematous papules on whole body. In addition to skin lesion, scoliosis, one of the skeletal anomaly and a mass on left neck diagnosed as Kimura disease were also present. Blood test showed elevated level of IgE (> 5,000 KU/L), hypereosinophilia. The use of oral and topical steroids, oral immunosuppressant improved lesions of the trunk, but lesions of the extremities including hands and feet remained wax and wane. IVIG treatment was attempted, but there was no significant improvement so far.

Kimura disease usually shows eosinophilia or elevated serum IgE levels, but is rarely accompanied by

hyperimmunoglobulinemia E syndrome. This case is reported as an interesting case with uncommon Kimura disease and hyperimmunoglobulinemia E syndrome.

PO08-023

### **Acetaminophen-induced generalized bullous fixed drug eruption (GBFDE) coincided with influenza**

Jin Young Song, Kyung Muk Jeong, Seung Hwi Kwon, Yoo Sang Baek, Hae Jun Song, Chil Hwan Oh, Jiehyun Jeon

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Generalized fixed drug eruption (GBFDE), an extremely uncommon variant of fixed drug eruption (FDE), is defined as typical FDE lesions with blisters involving at least 10% of body surface area or at least 3 of 6 anatomical sites.

We report a case of a 77-year-old male who presented to our department with painful erythematous eroded patches with large bullae on whole body. Patient claimed that symptoms were seen several hours after taking Suspen ER tablet (Acetaminophen). Patient was febrile and complained of malaise, sore throat and myalgia. Physical examination was positive for Nikolsky sign. Patient said he had 2 prior episodes of similar symptoms, first episode after administration of Geworin tablet (Isopropylantipyrine, Acetaminophen, Caffeine Anhydrous) and second episode 3 months ago after taking the same medication (Geworin tablet). Blood chemistry results showed elevated erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) levels and was positive for influenza B. Skin biopsy showed subepidermal bulla with necrotic suprabasal keratinocytes and mixed cell infiltration. Based on clinical and histopathological findings, we diagnosed the patient as a case of generalized bullous fixed eruption. After cessation of the culprit drug and treatment with systemic steroids, patient showed clearance of symptoms.

The role of viral antigen in drug eruption is controversial. However viral infections predispose genetically susceptible individuals to subsequent development of drug allergy. In our case the patient was positive for influenza B.

We herein report a rare case of acetaminophen-induced generalized bullous fixed drug eruption (GBFDE) coincided with influenza.

PO08-026

### **Alitretinoin can be a good treatment option for idiopathic recalcitrant trachyonychia in adults: An open-label study**

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**Background** Trachyonychia can be refractory to conventional treatments including topical, intralesional, or systemic corticosteroids, as well as cyclosporine and retinoids. Therefore, new treatment options are needed for recalcitrant trachyonychia.

**Objective** To evaluate the efficacy and safety of oral alitretinoin for idiopathic recalcitrant trachyonychia

**Methods** A total of 21 adult patients with 210 nails affected by idiopathic recalcitrant trachyonychia were evaluated in this open-label prospective study. All patients took 30 mg of alitretinoin daily for at least 3 months. Clinical outcomes were assessed using the Physician Global Assessment (PGA) scale proposed by Park et al. (degree of roughness: 0, clear; 1, mild; 2, moderate; 3, marked; 4, severe) at baseline and 1, 3, and 6 months after treatment.

**Results** After 1, 3, and 6 months of treatment, 74.3% (123/210), 98.1% (206/210), and 99.2% (119/120) of nails showed clinical improvement, and 0% (0/210), 22.9% (48/210), and 69.2% (83/120) were completely free from nail abnormalities, respectively. The mean PGA score at baseline was 3.4, decreasing significantly to 2.7, 1.3, and 0.7 at 1, 3, and 6 months following treatment, respectively. A small number of participants and lack of a control group were limitations.

**Conclusion** For the first time, this study evaluated the efficacy and safety of oral alitretinoin for idiopathic

recalcitrant trachyonychia in adults. The results suggest that oral alitretinoin can be a good treatment option for adult patients with recalcitrant trachyonychia.

PO08-027

### **Histopathologic study of morbilliform drug eruption: Differences between chemotherapeutic agents and antibiotics**

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**Background** Cutaneous drug eruption is very common, and its clinical manifestations are variable. Diagnosis of drug eruption is usually based on clinical findings and medication history. Histopathologic findings of drug eruption are also variable. Currently, few studies compare histopathologic findings of drug eruption according to medication. We focused on morbilliform eruption among diverse manifestations of drug eruption and studied the differences in histopathologic findings between antibiotic- and chemotherapeutic agent-induced morbilliform drug eruption.

**Methods** We reviewed medical charts established from March 1998 to August 2016 at our hospital. Inclusion criteria were drug eruption confirmed histopathologically, clinical demonstrations of typical morbilliform eruptions obtained from medical photographs, and causative drugs identified as chemotherapeutic agents or antibiotics. Immunohistochemical stainings were performed and included CD3, CD4, CD8, CD20, CD56, CD68, langerin, CD138, and c-kit.

**Results** A total of 40 cases (20 cases, chemotherapeutic group; 20 cases, antibiotics group) were included in this study. The most frequent histologic feature of the epidermis was exocytosis (95%) in the chemotherapeutic group, and necrotic keratinocytes (100%) in the antibiotic group. Inflammatory infiltration depths were significantly deeper in the antibiotic group than in the chemotherapeutic group. There was no significant difference between the two groups regarding immunohistochemical staining.

**Conclusions** This study suggested that in patients with morbilliform drug eruption, chemotherapeutic agents cause more superficial inflammation than antibiotics. These findings might be clues to differentiate the culprit agents of morbilliform drug eruption in cancer patients. Additional large, well-designed studies are needed to confirm these findings.

PO08-028

### **Comorbidity of vitamin A and vitamin D deficiency exacerbates the severity of atopic dermatitis in children**

Juan Xiang, Hua Wang, Ting-Yu Li

*Comorbidity of vitamin A and vitamin D deficiency exacerbates the severity of atopic dermatitis in children*

**Background** A few studies have suggested that vitamin D (VD) deficiency (VDD) is associated with atopic dermatitis (AD). Little is known about the relationship between AD and vitamin A (VA). We detected serum levels of VA and VD in AD children to explore how deficiency in VA and VD affects the severity of AD.

**Methods** We assessed the SCORing Atopic Dermatitis (SCORAD) index, total immunoglobulin E (IgE) levels and peripheral blood eosinophil counts. VA and VD levels were determined with high-performance liquid chromatography (HPLC). Correlations among variables were investigated with Pearson's correlation analysis.

**Results** The average SCORAD score in AD patients was  $45.48 \pm 13.36$ . The level of VD and VA was significantly lower in AD children than in normal children ( $p < 0.001$ ,  $p = 0.0423$ ). The proportions of children with VD deficiency (VDD) and VA deficiency (VAD) were higher in the AD group. Both VD and VA levels were negatively correlated with SCORAD scores ( $r = -0.2323$ ,  $P = 0.0369$  and  $r = -0.2740$ ,  $P = 0.0133$ , respectively). SCORAD scores were significantly higher in AD patients with both VDD and VAD (co-deficiency) than in other AD patients. Total serum IgE levels and eosinophil counts were significantly higher and positively correlated with the severity of the

disease. There was a significant inverse correlation between peripheral blood eosinophil counts and serum levels of VA and VD.

**Conclusions** VA and VD co-deficiency might exacerbate AD symptoms in children. VA and VD may exert protective effects by eosinophils, but the specific mechanism underlying this relationship needs to be further studied.

PO08-034

### **Significance and correlation of thyroid associated autoantibodies in patients with chronic urticaria**

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*General Hospital of PLA*

**Objective** To investigate the relationship between thyroid abnormality and chronic urticaria. To explore the diagnostic significance of autologous serum skin test in autoimmune chronic urticaria.

**Methods** To examine the autoantibodies (TGAb/TPOAb) of thyroid, the peripheral venous blood of chronic urticaria patients group and the control group were both collected. According to the thyroid autoantibody (TGAb and/or TPOAb positive, both TGAb and TPOAb were negative), the patients with chronic urticaria were divided into two groups, tested with autologous serum skin test (ASST).

**Results** Among the chronic urticaria, 14.00% (14/100) were diagnosed with TGAb positive and 22.00% (22/100) with TGAb and/or TPOAb positive. Among the volunteer, 3.00% (3/100) were diagnosed with TGAb positive and 11.00% (11/100) with TGAb and/or TPOAb positive. The incidence of thyroid autoantibodies in patients with chronic urticaria was higher than the control group, especially the TGAb ( $P < 0.05$ ). In 22 patients with TGAb and/or TPOAb positive chronic urticaria, the ASST was positive in 12 cases (54.55%), and in 78 patients with both TGAb and TPOAb negative, the ASST was positive in 3 cases (3.85%), and the difference was statistically significant ( $P < 0.05$ ).

**Conclusions** 1. the autoimmune status of thyroid may be one of the causes of chronic urticaria. 2. Autologous skin serum test has certain diagnostic significance for autoimmune chronic urticaria.

PO08-036

### **Generalized lichen nitidus following anti-programmed cell death 1 antibody treatment**

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*Kyoto University*

A man in his 40 years was referred to our clinic after developing multiple skin lesions. He had been diagnosed with metastatic lung adenocarcinoma the previous year and received two courses of radiotherapy to his head and leg and four cycles of carboplatin, pemetrexed, and bevacizumab followed by nivolumab, which is one of the anti-programmed cell death 1 antibody, administered every two weeks. After eight cycles of nivolumab over five months, he developed 1 to 2 mm shiny papules scattered on the upper limbs. Skin biopsy of the papular lesions showed typical histological features of lichen nitidus. He subsequently developed pruritus, and a very strong class topical steroid was started on his right arm while nivolumab was continued. One month later, the skin lesions on his right arm completely resolved whereas those on his untreated arm and body remained.

PO08-037

**Efficacy of Orengedokuto in a murine model of atopic dermatitis**Naoya Mori<sup>1</sup>, Yoko Yoshihisa<sup>1</sup>, Tsugunobu Andoh<sup>2</sup>, Mati Ur Rehman<sup>3</sup>, Tadamichi Shimizu<sup>1</sup>*1. Department of Dermatology, Graduate School of Medicine and Pharmaceutical Sciences University of Toyama**2. Department of Applied Pharmacology, Graduate School of Medicine and Pharmaceutical Sciences University of Toyama**3. Department of Radiology, Graduate School of Medicine and Pharmaceutical Sciences University of Toyama*

Atopic dermatitis (AD) is a chronic inflammatory skin disease characterized by the infiltration of inflammatory cells and severe pruritus. This study investigated the effects of Orengedokuto (OGT) on AD-like symptoms in a mouse model of AD. Repetitive OGT treatment in AD mice improved itching and skin manifestation and reduced the cutaneous recruitment of inflammatory cells (eosinophils and mast cells) and serum IgE levels. In addition, OGT inhibited the cutaneous expression of eotaxin, macrophage migration inhibitory factor (MIF) and IL-4 in AD mice. In fibroblasts, OGT and the major ingredient berberine inhibited the eotaxin expression induced by MIF/IL-4. In mast cells sensitized with IgE for 2,4-dinitrophenol (DNP), DNP induced the expression of both MIF and IL-4 but not eotaxin, all of which are inhibited by berberine. These results suggest that OGT improves AD-like symptoms through the inhibition of the eotaxin and pro-inflammatory cytokine expression and the related inflammatory cell recruitment.

PO08-039

**Toxic epidermal necrolysis with several immune-related adverse events followed by nivolumab in a patient with malignant melanoma**

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Immune checkpoint inhibitors for a variety of malignancies have changed dramatically morbidity and mortality. Despite these benefits, their use emerges to be associated with unique immune-related adverse effects (irAEs), including autoimmune diseases and severe skin conditions, such as toxic epidermal necrolysis (TEN). Here we describe a patient treated with Nivolumab, a programmed cell death protein-1 (PD-1) antagonist, who developed TEN with several irAEs.

A 66-year-old woman developed oral erosion and progressed desquamous lesion after receiving 12 doses of nivolumab. Skin biopsy revealed entire loss of epidermis, therefore a diagnosis of TEN was made. Steroid pulse therapy, plasma exchange and high dose immunoglobulin were performed and all detachment was slowly re-epithelialized. During the clinical course of TEN, several irAEs were developed, including type 1 diabetes, hypothyroidism, and heparin-induced thrombocytopenia syndrome. After improvement of all irAEs, her tumor progressed quickly and then she died 3 months after the onset of TEN. We determined serum levels of inflammatory cytokines and expression of regulatory T cell (Treg) in the patient. Serum IL-6 level was obviously increased one month before the onset of TEN in contrast to other patients using nivolumab without any dermatological reactions. Moreover, mRNA expression of Foxp3 in PBMCs was decreased before and the onset of TEN compared to other patients treated with nivolumab without any side effects. Increased level of IL-6 and reduction of Treg after starting nivolumab might be a prognostic factor of severe cutaneous irAE.

PO08-040

**Ragweed pollen allergen is a danger signal for the skin via activation of NLRP3 inflammasome in keratinocytes**

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Ragweed pollen, a ubiquitous allergen, is the trigger of seasonal rhinitis, conjunctivitis, and asthma, as well as an exacerbating factor of atopic dermatitis. A previous report has shown that ragweed pollen, acting as a functional TLR4 agonist, stimulates thymic stromal lymphopoietin production by ocular epithelia to trigger Th2-dominant allergic inflammation in mice. However, normal human keratinocyte could not express TLR4. Whether ragweed pollen allergen can activate keratinocyte innate immunity is not clear.

The inflammasome is a key regulator of pathogen recognition and also plays a role in mite allergen-mediated skin inflammation. We cultured primary human keratinocytes in FBS-free medium and investigated whether ragweed pollen extract (RWE) activate keratinocyte inflammasome. We found that RWE activated caspase-1 and induced caspase-1-dependent release of mature IL-1 $\beta$  and IL-18 from keratinocytes. Knocking down NLRP3 expression through transfection of keratinocytes with NLRP3 siRNA suppressed the activation of caspase-1 and attenuated the release of IL-1 $\beta$  and IL-18 from the RWE-treated keratinocytes. Thus, ragweed pollen allergen activates NLRP3 inflammasome in keratinocytes. RWE possesses intrinsic NAD(P)H oxidase activity that can induce oxidative stress. We found that RWE rapidly triggered the generation of cellular reactive oxygen species (ROS) in keratinocytes via its intrinsic NAD(P)H oxidase, which is responsive for the activation of NLRP3 inflammasome and the production of IL-1 $\beta$  and IL-18 from keratinocytes.

Ragweed pollen allergen acts as a danger signal for the skin and may play a role in the pathogenesis of seasonal dermatitis, through activating NLRP3 inflammasome in epidermal keratinocytes to produce proinflammatory cytokines.

PO08-041

**Granulomatous periorificial dermatitis in a fiberglass industry worker**

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Fiberglass is widely used for thermal, electrical and acoustic insulation or reinforcement of plastic. Fiberglass industry workers are at high risk of irritant contact dermatitis due to small fragments penetrating the cornified layer of skin. In addition, fiberglass has been reported to cause various occupational skin diseases including allergic contact dermatitis, urticaria, granuloma annulare, and erythema multiforme-like eruptions.

We reported the case of a 40-year-old man presented with facial papular eruption which had begun after dealing with fiberglass in a closed working environment. The lesions was characterized by monomorphic confluent papules distributed mainly on the nose, periorbital, and perioral area. There was no personal history of contact dermatitis, folliculitis and rosacea. Histopathologic examination revealed perifollicular granulomatous infiltration with multinucleated giant cells. Fiberglass particles were identified in birefringence polarized light microscopy image. He was recommended to avoid fiberglass exposure and treated with oral minocycline, topical metronidazole and topical calcineurin inhibitor. This case indicated that fiberglass exposure might be associated with granulomatous periorificial dermatitis, and emphasized the importance of careful occupational history taking in diagnosis and treatment of granulomatous periorificial dermatitis.

PO08-043

**Inducible urticaria in children: Its clinical and laboratory features.**

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Although urticaria is considered one of the most frequent skin diseases, the etiology of urticaria in children remains incompletely understood. Inducible urticaria is a condition characterized by the appearance of recurrent wheals, angioedema, or both as a response to specific and reproducible triggers. The aim of this study was to determine the clinical characteristics of inducible urticaria in children. We retrospectively investigated 73 patients (range 0-14 years, female 40 patients) who suffered from urticaria and visited to our outpatient clinic more than twice from 2010 to 2014. Data were collected regarding age, sex, disease duration, severity and laboratory parameters such as total IgE, antinuclear antibodies and routine laboratory tests. From 73 patients with urticaria, there were 8 patients (11.0%) with allergic urticaria (food or drug), 5 patients (6.6%) with physical urticaria (solar, cold contact or heat contact), 2 patients (2.6%) with angioedema and 2 patients (2.6%) with mastocytosis. Among allergic urticaria, causative foods are egg (3 patients), wheat (2 patients), milk, pork and spinach (1 patient respectively). And there were 45 patients (61.6%) with spontaneous acute urticaria and 13 patients (17.8%) with spontaneous chronic urticaria. Our data showed infections were the most frequent triggering factor of acute urticaria.

PO08-048

**Erythema multiforme-like contact dermatitis caused by *Lysimachia clethroides***

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*Department of Dermatology, The First Affiliated Hospital, Sun Yat-sen University*

A 16-year-old Cantonese boy developed target like erythema 7 days after dressing with a mixture of *Lysimachia Clethroides* Duby, ethyl alcohol and borneol (Topical application of the combination is widely used as a traditional Chinese medicine against herpes zoster and eczema). Patch test demonstrated very strong positive reaction to *Lysimachia Clethroides* Duby. Diagnosis of erythema multiforme-like contact dermatitis caused by *Lysimachia clethroides* was established. Systemic glucocorticosteroid and antihistamine were administered with clearance of skin lesions 7 days later. Erythema multiforme-like contact dermatitis is a rare form of non-eczematous contact dermatitis. To the best of our knowledge, this is the first report on EM-like eruption due to *Lysimachia Clethroides* Duby. However, this is a preliminary clinical observation, the culprit antigens are needed to be identified further.

PO08-001

**Itching and its related factors in subtypes of eczema: a cross-sectional and multicenter study in tertiary hospitals of China**Xin Wang<sup>1</sup>, Lin-Feng Li<sup>2</sup>, Xiao-Dong Shi<sup>3</sup>*1. Department of Dermatology, Beijing Shijitan Hospital, Capital Medical University.**2. Department of Dermatology, Beijing Friendship Hospital, Capital Medical University.**3. China Telecom Corporation Limited Beijing Research Institute.*

**Objectives** Previous studies on itch have focused mostly on atopic dermatitis (AD), but very few on other types of eczema. We conducted this study to understand the features of itching in different types of eczema.

**Methods** A multicenter cross-sectional study was conducted among eczema outpatients from 39 tertiary hospitals in 15 provinces in mainland China from July 1 to September 30, 2014.

**Results** Itching is very common in all kinds of eczema outpatients, 97% of recruited outpatients had it (8499/8758). Severity of itch was increased with age and disease duration ( $P < 0.05$ ). The top three subtypes of dermatitis with

severe itching were atopic dermatitis (30.4%), widespread eczema (30.1%), and asteatotic eczema (27.9%). The proportion of outpatients without itching was highest in hand eczema (6.8%). Multifactor analysis revealed that itching remained associated with age, disease duration, suspected bacterial infection, especially geographic latitude. The probability of itching occurrence in eczema outpatients with suspected bacterial infection was 1.762 times of those without infection, while 71.4 times in the lowest latitude region 20-25 °N than that in the highest latitude region 40-45 °N.

**Conclusion** Itching is very common in all kinds of eczema outpatients. Older age, longer disease duration, bacterial infection, especially living in the low latitudes were risk factors for itching. Hygiene and emollient practices are central to maintaining skin integrity, which are effective in relieving itching of eczema.

PO08-002

### **A case of allergic dermatitis resembling infectious granuloma**

Xiao-Yang Liu, Yan Zhao, Lin Cai, Jian-Zhong Zhang

*Peking University People's Hospital*

We reported a case of allergic dermatitis after total knee arthroplasty (TKA), which resembled infectious granuloma in clinical manifestation. A 54-year-old male underwent left knee arthroplasty in June 2017. One month later, he presented with severe left knee dermatitis, and then the lesions aggravated and generalized to whole-body. Physical examination revealed the left knee joint swelling and high temperature of skin. A 20 x 10cm oval erythema with a clear boundary was seen on the left knee joint. The surface was covered with yellow brown moist thick scab, and erosion and exudation appeared on the crust and fissure, which resembled infectious granuloma. We did the debridement for him and found the scab was easy to separate from the skin. Surprisingly, the erythra of knee after debridement showed dark-red patches with clusters of papules, papule-vesicles and some exudation on the surface, no ulceration and granulation tissue. Some dark-red papules and fusional plaques with dry surface and scab were over the trunk and limbs. This patient had no history of allergies, although the results of metal patch are negative, but he suddenly presented with a dozen of allergic materials. Imaging examination, pathology, and etiological examination were helpful to rule out prosthesis loosening and deep infections. The dermatitis was mainly located in the joint replacement, and anti-allergy treatment was effective, so the metal allergic reaction is the only explanation, and we finally diagnosed an allergic dermatitis after TKA. Allergic dermatitis caused by a reaction of the skin to an orthopedic implant was rare, hypersensitivity to implants are mainly a reaction to metals, only very few cases about bone cement as allergens have been documented in the literature. Hypersensitivity reactions after TKA are most commonly present in the first few postoperative months as pruritic, erythematous, eczematous, edematous, sometimes painful, and sometimes exudative lesions in the periprosthetic region. Diagnosis of this disease should be first rule out infection. Anti-allergy treatment should be considered first, like treating with steroids, antihistamines by topical or oral. If a conservative treatment course is ineffective or unrealistic, replacement of the prosthesis is typically the most effective treatment. Our patient, under a half year follow-up, was treated with antihistamines well.

PO08-004

### **Patch testing in facial dermatitis using Chinese baseline series (60 allergens) and cosmetic series (58 allergens)**

Fen Peng, Zhang-Lei Mu, Chen-Hong Xue, Zhou Chen, Jian-Zhong Zhang

*Peking University people's hospital*

**Background** Facial dermatitis (FD) is a common disease in dermatology. and it may result from allergy. Patch test plays an important role in finding the cause of this allergen.

**Objective** To identify the potential allergen to FD in Chinese people.

**Methods** We carried out a retrospective review of medical records from female patients (n=443) with FD between 2015 and 2016 in Peking University People's Hospital dermatology clinics, We divided Facial dermatitis (FD) into

facial cosmetic dermatitis (FCD), in which lesions relate to the use of cosmetics; and non-facial cosmetic dermatitis (non-FCD), in which dermatitis irrelevant to cosmetics. Patch test was performed with the Chinese Baseline Series for non-FCD group, and the Cosmetic Series for FCD group.

**Results** Of the 443 female patients with FD, 311 (70.2%) patients showed at least one positive reaction. The positive reaction rates were 71.3% in non-FCD group and 65.9% in FCD group. Positive reaction rates for the top 3 in non-FCD group were: Methylisothiazolinone (MI) (22.0%), Nickel sulfate hexahydrate (16.1%), Cobalt chloride hexahydrate (15.8%). Most common antigen showing in FCD group was MCI/MI (25%) and MI (23.9%). The positive reaction rate of MCI/MI and Fragrance Mix II was significantly much higher in the FCD group than in the non-FCD group.

**Conclusion** We found an increase in the prevalence of MI and MCI/MI in previous studies and the positive rate in Chinese was much higher than other areas. Patch testing to Fragrance mix II may be more necessary than fragrance mix I for whom suspected of facial cosmetic dermatitis.

PO08-005

### **Evaluation of the reduction of risk in patients with moderate-to-severe atopic dermatitis receiving Dupilumab**

Yue Han, Xu Yao

*Chinese Academy of Medical Sciences and Peking Union Medical College*

**Background** Dupilumab is a recently developed fully human monoclonal antibody targeting the interleukin-4 receptor (IL-4R)  $\alpha$  subunit, which blocks both interleukin-4 (IL-4) and IL-13. Several clinical trials have demonstrated that Dupilumab treatment significantly alleviated the symptoms of atopic dermatitis (AD) without serious adverse effects. We sought to analyze the efficacy and safety of Dupilumab for the treatment of AD in a meta-analysis of clinical trial results.

**Methods** PubMed, Medline, Embase, and Web of Science databases were searched for suitable trials, and only double-blind, randomized, placebo-controlled studies with Dupilumab-treated versus placebo-treated patients with AD were included. A systematic meta-analysis of randomized trials was performed to analyze the effect of Dupilumab on clinical indexes that correlated with the severity of AD and the safety profile of Dupilumab.

**Results** A total of seven clinical trials were selected in our meta-analysis (N=1966, adult patients with moderate-to-severe AD). Dupilumab treatment yielded a significant improvement in clinical signs and symptoms of AD compared to placebo. Furthermore, Dupilumab treatment did not show serious adverse effects as other systematic therapeutic drugs, indicating that Dupilumab treatment is safe and well tolerated.

**Conclusion** Dupilumab is a promising therapeutic agent that improves the management of adult patients with moderate-to-severe AD.

PO08-006

### **Efficacy of vitamin D supplementation in the reduction of risk of children with atopic dermatitis: A meta-analysis of randomized controlled trials**

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**Background** Vitamin D has been proved to regulate various immune cells and the function of epithelial cells which are important in allergic inflammation. Several clinical trials have demonstrated that vitamin D treatment significantly alleviated the symptoms of atopic dermatitis (AD) without serious adverse effects. We sought to investigate the difference in levels of serum vitamin D between VD-treated group and control group and the efficacy of vitamin D for the treatment of AD in a meta-analysis of clinical trials results.

**Methods** Medline, Embase, PubMed and Web of Science databases were systematically searched for suitable studies, and observational studies and double-blind, randomized controlled trials (RCTs) were involved. A meta-analysis of

RCTs was performed to analyze the efficacy of vitamin D on clinical outcomes that associated with the severity of AD. Galbraith radial plot was made to quantify the heterogeneity. Funnel plot and Egger test were performed to describe the bias of publication. Forest plot was prepared to indicate the clinical outcomes. The data was analyzed using the software Revman 5.3 and STATA 12.0. The quantitative data was expressed as standardized mean difference, and a  $P$  value of  $< 0.05$  was considered statistically significant.

**Results** A total of 10 observational studies and 5 clinical trials were selected in our meta-analysis ( $N=4495$ , patients with AD). Vitamin D treatment yielded a significant improvement in clinical signs and symptoms of AD compared to placebo group. Funnel plot and Egger test showed there is no significant bias in the publication ( $P>0.05$ ). Cochrane collaboration tool and Jadad scale were used to indicate that all 5 RCTs were found to be of high quality. The results of Galbraith radial plot showed that the El taieb et al 2013 study was the major source of heterogeneity. The AD group had significant lower level of serum vitamin D for all ages individuals in 10 included observational studies (standardized mean difference =  $-0.69$  ng/mL; 95% CI =  $-1.12$  to  $-0.25$ ;  $z= 3.11$ ;  $P=0.002$  ) compared with the control group. The supplementation of vitamin D significantly decreased the EASI score more than that of placebo group (standardized mean difference =  $-0.38$ ; 95% CI =  $-0.74$  to  $-0.01$ ;  $z=2.02$ ;  $P=0.043$ ). There is a significant reduction of SCORAD score in vitamin D-treated group compared with the placebo group (standardized mean difference =  $-2.48$ ; 95% CI =  $-4.60$  to  $-0.35$ ;  $z=2.28$ ;  $P=0.022$ ).

**Conclusion** Compared with the healthy controls, the level of serum vitamin D in AD group was significant lower, and vitamin D is a promising therapeutic agent that improves the management of pediatric patients with AD.

PO08-008

### **Procalcitonin as a diagnostic indicator for systemic bacterial infections in patients with Stevens-Johnson syndrome/toxic epidermal necrolysis**

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**Objective** To investigate the diagnostic efficacy of procalcitonin (PCT) for systemic bacterial infections in patients with Stevens-Johnson syndrome (SJS)/toxic epidermal necrolysis (TEN).

**Methods** The clinical data and indexes of PCT and C-reactive protein (CRP) of 42 patients with SJS/TEN were retrospectively analyzed. Bacterial infection was diagnosed by positive culture results or typical symptoms and signs combined with positive response to antibiotics. The 42 patients were divided into the systemic infected group, skin surface infected group and non-infected group according to their infection status. Receiver operating characteristic (ROC) curve was used to determine the diagnostic efficacy of PCT for systemic bacterial infections in SJS/TEN patients.

**Results** The age and SCORTEN score of patients in the systemic infected group were higher than those in the other two groups ( $P<0.05$ ). The level of PCT in the systemic infected group was significantly higher than those in the other two groups ( $P<0.05$ ). There was no significant difference in CRP between the three groups. ROC curve analysis revealed that the cutoff PCT level of 0.65 ng/ml had optimal diagnostic efficacy, with sensitivity and specificity of 84.6% and 89.7%, respectively. PCT and SCORTEN score were positively correlated ( $P<0.05$ ).

**Conclusion** PCT is superior to CRP in detecting systemic bacterial infections in SJS/TEN patients. The level of PCT can partially reflect the severity of the disease.

PO08-009

**Prevalence of chronic spontaneous urticaria, eczema and tinea among chinese young adults are significantly correlated with ethnicity and original family socioeconomic status**

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**Purpose** To characterize health disparities in skin diseases among young adults by socioeconomic status (SES) and ethnicity in the baseline of a prospective cohort study of new-enrolled college students.

**Methods** A cross-sectional study was conducted to assess the association of the prevalence of skin diseases with SES and ethnicity in September 2017. The Prevalence of skin diseases was diagnosed by certificated dermatologists during the freshman physical check-ups of a comprehensive university in China. The per-capita annual income of students' original family and provincial per-capita gross domestic product (GDP) were used as the first-level and second-level measurements of SES, respectively. Related information including ethnicity and disease histories, etc. were inquired individually. A two-level logistic regression model was used to estimate the association.

**Results** 8226/8463 students with the average age of  $18.5 \pm 0.7$  consented to participate. Moderate to severe acne (10.2%) had the highest prevalence, followed by chronic spontaneous urticaria (2.7%), dermatitis (2.5%), tinea (1.7%). The distribution of SES was consistent with the rank of provinces by GDP per capita (Spearman correlation  $r=0.24$ ,  $P<0.001$ ). Han ethnicity was associated with higher SES. SES was positively associated with the prevalence of chronic urticaria in a clear dose-response manner (adjusted OR increased from 1.11 to 2.00,  $P_{\text{trend}}<0.001$ ); a similar pattern was found in dermatitis and eczema with adjusted OR increased from 1.04 to 1.81 ( $P_{\text{trend}}=0.004$ ). By contrast, tinea was inversely associated with SES (adjusted OR decreased from 0.75 to 0.43,  $P_{\text{trend}}=0.025$ ).

**Conclusion** Skin health disparities exist across young adults' original family SES and ethnicity.

PO08-010

**Mediators in the association of chronic spontaneous urticaria with anxiety and depression in adolescents**Yu-Zhou Huang<sup>1,2,3</sup>, Min-Xue Shen<sup>1,2,3</sup>, Jie Li<sup>1,2,3</sup>, Xiang Chen<sup>1,2,3</sup>*1. Department of Dermatology, Xiangya Hospital, Central South University, Changsha, Hunan, China**2. Hunan Key Laboratory of Skin Cancer and Psoriasis, Changsha, Hunan, China**3. Hunan Engineering Center of Skin Health and Disease, Changsha, Hunan, China*

**Background** Chronic spontaneous urticaria (CSU) has been associated with psychiatric comorbidities. It is unknown whether the relationship is mediated by modifiable factors.

**Objective** To investigate whether the effect of CSU on anxiety and depression in adolescents is mediated by itching and sleep disturbance.

**Methods** Newly enrolled college students were recruited. Skin diseases including CSU were diagnosed by certificated dermatologists during the health examination. Anxiety and depression were measured by the Generalized Anxiety Disorder Scale and Patient Health Questionnaire respectively. Sleep quality was measured by the Pittsburgh Sleep Quality Index. Itching was measured by a numeric rating scale. Mediation effect model was proposed according to the hypothesis and established using structural equation model.

**Results** 7775 students that reported no history of systemic diseases and had no pruritic skin diseases (except CSU) were included in analysis. CSU was significantly associated with both anxiety and depression when itching and sleep quality were not modeled. A mediation model was proposed as: CSU to itching to sleep disturbance to anxiety or depression. Itching and sleep quality mediated 65.4% and 77.6% of CSU's effects on anxiety and depression, respectively; And CSU had no significant direct effect on anxiety or depression in the mediation models.

**Conclusions** The associations of CSU with anxiety and depression were mediated by itching and sleep disturbance. Intervention to relieve itching or improve sleep quality may be in the treatment for emotional disorders in relation to CSU.

PO08-011

**Correlation analysis of serum 25-OH vitamin D level and atopic dermatitis in children**

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**Objective** To study the relationship between children's serum 25-OH vitamin D(25(OH)D)and Scoring Atopic Dermatitis Index. The relationship between 25(OH)D and the blood eosinophil percentage, eosinophil counts, plasma total immunoglobulin E (IgE) concentration, serum Ca<sup>2+</sup>, height, body weight, BMI were also analyzed.

**Methods** The clinical data of 44 children with atopic dermatitis treated in our hospital from June 2016 to December 2016 were selected as the AD group, and the data of the same number of healthy children in the same period were collected as the healthy group. The AD group was evaluated by SCORAD. We measured the AD group's and the healthy group's blood routine, IgE concentration, serum Ca<sup>2+</sup> concentration and 25(OH)D, and calculated the BMI according to body weight and height. SCORAD score was performed by the same physician.

**Results** There was a negative correlation between the 25(OH)D and the SCORAD score ( $r=-0.305$ ,  $P=0.044$ ). The 25(OH)D had a positive correlation with Ca<sup>2+</sup> concentration ( $r=0.366$ ,  $P=0.015$ ). Besides, The SCORAD score showed positive correlation with blood eosinophil percentage and counts and IgE concentration( $r_1=0.355$ ,  $r_2=0.398$ ,  $r_3=0.397$ ;  $P_1=0.018$ ,  $P_2=0.008$ ,  $P_3=0.008$ ). The 25(OH)D in AD group were lower than those in the healthy group( $Z=-2.028$ ,  $P=0.043$ ). Eosinophil percentage and counts, IgE and Ca<sup>2+</sup> concentration were higher than those in healthy group( $Z_1=-3.965$ ,  $Z_2=-4.112$ ,  $Z_3=-2.479$ ;  $P_1<0.001$ ,  $P_2<0.001$ ,  $P_3=0.013$ ).

**Conclusion** Children's 25(OH)D values may be associated with SCORAD score of atopic dermatitis.

PO08-012

**Sublingual immunotherapy in mite-sensitized patients with atopic dermatitis: A multi-centre, randomized, double-blind, placebo-controlled study**Lun-Fei Liu<sup>1,2</sup>, Ji-Su Chen<sup>1</sup>, Min Zheng<sup>1</sup>*1. Department of Dermatology, Second Affiliated hospital of Zhejiang University School of Medicine, China**2. Department of Dermatology, Fourth Affiliated hospital of Zhejiang University School of Medicine, China*

**Background** In China, allergen specific immunotherapy has been widely used for allergic rhinitis and asthma. Its efficacy and safety in atopic dermatitis remains to be verified. This study was to evaluate the efficacy and safety of sublingual immunotherapy with *Dermatophagoides farinae* extracts for HDM induced AD.

**Method** 239 subjects were recruited for a multi-centre, randomized, double-blind, placebo-controlled, 36 weeks' clinical trial, which were divided into placebo, high, medium and low-dose treatment groups.

**Results** Efficacy analysis was performed in full analysis set and per protocol set. As primary outcomes, a marginal decrease in SCORAD and total medication score was showed in medium and high dose group. In the 6th visit, the skin lesion area showed statistically significant difference between high / medium-dose and placebo group ( $P<0.05$ ). Other analysis of the full analysis set and per protocol set showed no statistically significant ( $P>0.05$ ). Adverse events are mostly mild local adverse events, and no life-threatening adverse drug reaction happened during the clinical trial.

**Conclusion** Our patients demonstrate positive responses to SLIT with high and medium dose *Dermatophagoides farinae* extracts, and the treatment was well tolerated. But a longer term immunotherapy is needed for further study.

PO08-016

**Serum miR-125a-5p and CCL17 as potential biomarkers for chronic spontaneous urticaria**

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**Background** To date, there is a lack of objective biomarkers for chronic spontaneous urticaria (CSU). We aimed to investigate whether certain microRNAs (miRNAs) and cytokines can serve as serum biomarkers for CSU.

**Methods** Microarray analysis was performed to evaluate serum miRNA expressions in 20 CSU patients and 20 controls. Eight miRNAs were upregulated or downregulated in CSU patients. Serum expression of the 8 dysregulated miRNAs were measured by qRT-PCR in 59 CSU patients and 58 healthy controls. ELISA was used to detect serum levels of CCL17, CCL22 and IL-17.

**Results** Serum levels of miR-125a-5p ( $5.26 \pm 1.37$  vs  $6.69 \pm 1.23$ ,  $P = 2.6 \times 10^{-8}$ ), CCL17 ( $516.4 \pm 440.7$  vs  $158.5 \pm 86.5$  pg/mL,  $P < .0001$ ) and CCL22 ( $691.8 \pm 303.3$  vs  $457.6 \pm 149.9$  pg/mL,  $P < .0001$ ) were significantly elevated in CSU patients in comparison with controls. The area under curve (AUC) values for serum miR-125a-5p and CCL17 were 0.794 (sensitivity 71.2%, specificity 77.6%) and 0.911 (sensitivity 78.0%, specificity 94.8%), respectively. Serum IL-17 was undetectable in CSU patients and controls. Serum miR-125a-5p level ( $4.4 \pm 1.3$  vs  $5.4 \pm 1.3$ ,  $P = .024$ ) was even higher in severe CSU cases ( $n = 10$ ) needing 4-fold dose of H<sub>1</sub> antihistamines. Serum miR-125a-5p level ( $P = .018$ , OR = 2.187, OR 95% CI: 1.144, 4.181) was an independent risk factor for severe CSU by logistic regression analysis. Serum levels of miR-125a-5p ( $7.0 \pm 0.8$  vs  $8.0 \pm 1.2$ ,  $P = .001$ ) and CCL17 ( $636.3 \pm 312.4$  vs  $372.5 \pm 173.8$  pg/mL,  $P = .004$ ) of 12 CSU patients in remission phase decreased significantly in comparison with their active phase.

**Conclusions** Serum miR-125a-5p and CCL17 are potential biomarkers of CSU. Especially, serum miR-125a-5p is a biomarker for severe CSU.

PO08-018

**A case report of skin ulcer**

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*Peking University Third Hospital*

**Medical history:** *Patient:* female, 39 years old. Chief complaint: Facial pruritic erythema more than 9 months, aggravated with erosions and ulcers for 4 months. Current medical history: More than 9 months ago (June 2016), a well-demarcated erythema was occurred on the both sides of the patient's zygomatic areas, separately. Subsequently, the size of erythema gradually expanded to both cheeks and chin with pain and itch, treated with unknown Chinese herbs for external use. Four months ago (December 2016), erosions were appeared in the center of the erythema, which gradually progressed to deep ulcers. However, the patient denied scratches. The hospitalize reason for this patient was bleeding at the ulcers site on March 27th, 2017.

*Past history:* Primary hypertension, Cervical spondylosis and Subclinical hypothyroidism without regular treatment.

**Physical examination:** A well-demarcated, large, deep red erythema was observed on the both sides of zygomatic areas, cheeks and chin, symmetrically distributed in a shape of 'U'. There were two deep ulcers in the center of the deep red erythema on the bilateral zygomatic areas, which were 4cm\*3cm (left) and 3.5cm\*2.5cm (right) in size. The ulcers had sharp, irregular borders and the base of ulcers were flushing, covered with thick yellow-white purulent secretion.

**Dermatological pathology:** The microscopic findings of the ulcer were epidermal hyperplasia, intracellular and intercellular mild edema. Dermal was infiltrated mainly by focal lymphocytes, accompanied by a few neutrophils, along with vasodilatation and erythrocytes extravasation. The inflammatory cells around elevated fat lobules, blood vessels and sweat glands are mainly dense mononuclear cells.

**Supplementary medical history:** The patient's occupation is a software engineer and works at home. The patient is unmarried and doesn't have a strong desire to visit the hospital. During the conversation, the patient shows obvious avoidance tendency towards medical history.

**Diagnosis:** 1. Irritant contact dermatitis 2. Artificial dermatitis 3. Secondary infection of skin ulcers

**Differential diagnosis:** 1. Lupus erythematosus 2. Pyoderma gangrenosum 3. Skin tumor

**Treatment:** 1. Wet compression with Kangfuxin Liquid and Lithospermum oil. 2. Sprayed with Epidermal growth factor. 3. Compound polymyxin B ointment for external use. 4. Non-specific antiallergic therapy.

PO08-019

### **Epidemiology of Stevens-Johnson syndrome and toxic epidermal necrolysis in China**

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**Background** Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) is a rare but life-threatening disease. Until recently, there are only few epidemiologic studies of SJS/TEN from China.

**Objective** To analyze the clinical characteristics, causality, and outcome of treatment for SJS/TEN in China.

**Methods** We reviewed case reports of patients with SJS/TEN from the China National Knowledge Infrastructure (CNKI) and Wanfang database from 2006 to 2016. We also reviewed the patients diagnosed with SJS/TEN who were admitted to the First Affiliated Hospital of Fujian Medical University during the same period.

**Results** There were 166 patients enrolled, including 70 SJS, 2 SJS/TEN overlap, and 94 TEN. The most common offending drugs were antibiotics and anticonvulsants. Carbamazepine, allopurinol, and penicillins were the most common single offending drugs. There were 76 (45.8%) patients receiving systemic steroid and intravenous immunoglobulin (IVIG) in combination therapy, especially for TEN (80.3%), and others were treated with systemic steroids alone. Mortality rate of combination treatment was lower than steroid alone in TEN (6.6% versus 12.1%), but without statistical significance.

**Conclusions** Similar to other Asian countries, carbamazepine and allopurinol were of the leading causative drugs for SJS/TEN in China. Combination of IVIG and steroids is a common treatment for TEN. However, the efficacy of IVIG on the improvement of mortality needs further investigation.

PO08-020

### **Associations between vitamin D receptor gene polymorphisms and chronic spontaneous urticaria in Chinese Han population**

Yi-Ping Ma

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**Background** Previous researches found that vitamin D receptor (VDR) TaqI, BsmI, FokI and ApaI gene polymorphisms are associated with several inflammatory diseases. However, the relationship between VDR gene polymorphisms and chronic spontaneous urticaria (CSU) is not clear. The purpose of our study was to explore the relationship between the polymorphism of VDR and the incidence of chronic spontaneous urticaria in the Chinese Han population. Meanwhile, the vitamin D levels in patients with chronic spontaneous urticaria were also detected and the effects of vitamin D receptor gene polymorphism on vitamin D levels were detected.

**Methods** The genotypes of four VDR polymorphisms (TaqI, BsmI, ApaI, and FokI) were studied using allele-specific PCR analysis in 90 CSU patients and 90 healthy controls.

**Results** Compared to the control group, the mutant allele(C) of FokI were more common in patients with CSU (57.2% vs 45%,  $P=0.020$ , odds ratio [OR]=0.612, 95% confidence interval [CI]=0.403 - 0.928). We found that serum vitamin D levels were significantly lower in CSU patients than in healthy controls ( $P=0.023$ ). However, the effect of VDR gene polymorphism on vitamin D levels was not found in patients of CSU.

**Conclusion** We first reported the effect of VDR gene FokI (rs2228570) polymorphism on the incidence of chronic spontaneous urticaria in Chinese Han population.

PO08-021

**Combination of traditional Chinese and Western medicine treatment of childhood eczema**

Tao-Ying Cheng

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**Objective** To investigate the effect of cintegrated traditional Chinese and Western medicine in treatment of acute eczema in children..

**Method** The control group was treated with cetirizine and Bifid Triple Viable, while the observation group was treated with Chinese Medicine on the basis of the control group.

**Results** Compared with the control group, the contents of lactic acid bacteria and bifidobacteria in feces of patients in observation group were higher than those in control group. The levels of CD4+ and CD4+/CD8+ in the observation group were higher than those in the control group, while the level of CD8+ was lower in the observation group than in the control group . The differences were both statistically significant ( $p < 0.05$ ). After treatment, the control group was markedly effective in 11 cases, effective in 15 cases, invalid in 9 cases, while the observation group was excellence in 19 cases, efficacious in 13 cases, of no effect in 3 cases. The clinical efficacy of the observation group was evidently better than that of the control group. Followed up for 5 months, 10 cases recurred in 35 cases in the control group, 3 cases among 35 cases of observation group had a relapse. The relapse rate of the observation group was distinctly less than that of the control group ( $p < 0.05$ ).

**Conclusion** The combined treatment of traditional Chinese medicine and western medicine can improve the intestinal flora of children with eczema, improve immune function, reduce the recurrence of eczema.

PO08-022

**Decreased interleukin-35 serum levels in patients with chronic spontaneous urticarial**

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**Background** IL-35 is a newly anti-inflammatory cytokine which belong to the IL-12 family. Mast cells, as one of the major effector cells in the immune response system, play important roles in the pathogenesis of chronic spontaneous urticarial (CSU). The aim of our study is to explore the role of IL-35 in the pathogenesis of CSU.

**Methods** In this study, the serum levels of IL-35 in patients with CSU and controls were detected by sandwich enzyme-linked immunosorbent assay (ELISA). The effects of IL-35 on cell proliferation, cytokine expression and histamine release in human mast cell line (HMC1) were investigated by CCK8 or RT-PCR. The phosphorylation of ERK1/2, p38 and JNK1/2, in PMA and A23187 induced HMC-1 cells were detected by Western Blot.

**Results** We found that the serum IL-35 levels were significantly decreased in patients with CSU compared with those in healthy controls and CSU patients after conventional treatment. Moreover, IL-35 significantly inhibited the proliferation of HMC-1 cells stimulated by PMA and A23187. IL-35 also down-regulates the mRNA expression of IL-6 and IL-17 in activated HMC-1. Furthermore, IL-35 markedly inhibited the phosphorylation of ERK1/2, p38 and JNK1/2, in PMA and A23187 induced HMC-1 cells.

**Conclusions** This study provides first observations on the association of IL-35 and CSU, and showed the inhibitory and anti-inflammtory effect of IL-35 on activated HMC-1 cells. We suggest that IL35 may play a role in the pathogenesis of CSU.

PO08-024

**A case of trichloroethylene induced medicamentosa-like dermatitis (DMLT) complicated with Hemophagocytic Syndrome (HPS)**

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A 24-year-old female, was admitted with “generalized erythema, papules for 20 days, fever and elevated liver enzymes for 2 weeks”. Since the onset of the disease, she has prolonged high fever with jaundice, repeated abdominal pain, diarrhea, cough, and spitting yellow sputum. Examination: the proportion of eosinophils and lymphocytes were high, with liver enzymes, bilirubin, triglyceride and serum ferritin significantly elevated all gradually. One month before the onset of the disease, she has a contact history of “board-washing water” and the urinary trichloroacetic acid of her exceeds the upper limit of 4.97 mg / L ( normal concentration < 0.05 mg/L). She was confirmed as Trichloroethylene induced medicamentosa-like dermatitis (DMLT) and pneumonia. After the treatment of large dose of hormone, immunoglobulin, liver protection, eliminating jaundice and anti-infection, the rash and liver function of the patient were improved, but she still had repeated fever and diarrhea, with hemoglobin continuously declining. The CT showed splenomegaly. Bone marrow examination showed phenomenon of phagocytosis, which was confirmed as Hemophagocytic Syndrome (HPS). After being transferred to the department of hematology, she was treated with etoposide, pulse therapy of 4mg /kg/d of methylprednisolone, anti-infection and other symptomatic supportive treatment. The patient was steady and the rash disappeared gradually, but remaining low fever. The index of liver function, bilirubin and three system of circumferential blood returned to normal range, and the reexamination of bone marrow suggesting that HPS was general remission.

PO08-025

**Clinical efficacy and safety of biologic agents in moderate to severe atopic dermatitis: a meta-analysis**

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**Background** Biologic agents have been thought a new approach to improve atopic dermatitis (AD) therapeutics. But the clinical efficacy and safety of biologic agents in moderate to severe AD are poorly known. The aim of this study was to compare the benefits and harms of biologic agents versus placebo for AD patients with moderate to severe disease.

**Methods** In Feb 2018 we searched for randomized controlled trials (RCTs) in MEDLINE, Embase and web of science; and trials registers. We used standard Cochrane methods. The primary outcome was the Eczema Area and Severity Index (EASI)-75 response, while secondary outcomes were SCORing Atopic Dermatitis (SCORAD)-75, EASI-50, SCORAD-50, Investigator Global Assessment 0/1 responses, change in responses from baseline, and adverse events. We calculated odds ratios (OR) and mean differences (MD) along with 95% confidence intervals (CI) for meta-analysis. We converted OR to risk ratios (RR) for ease of interpretation.

**Results** We included 11 randomized controlled trials (RCTs) evaluating five biologic agents. High-quality evidence was available for dupilumab, nemolizumab and lebrikizumab. Pooling seven studies, at weeks 12–16 dupilumab 300 mg every week to every 2 weeks achieved EASI-75 responses of 54.9%, superior to placebo [relative risk (RR) 3.29, 95% confidence interval (CI) 2.93–3.69]. Nemolizumab had similar EASI-75 responses as placebo, but significantly improved pruritus. lebrikizumab demonstrated superior EASI-50 responses versus placebo (RR 1.18, 95% CI 0.94–1.49). In two RCTs each, omalizumab and ustekinumab were comparable with placebo. All medications had a comparable safety profile to placebo. Lack of RCTs and the use of variable outcome measures limited conclusions.

**Conclusion** Dupilumab is currently the only biologic with robust evidence of efficacy in AD. Nemolizumab and lebrikizumab show promise but further data are needed. Longer follow-up and larger studies will establish their safety profile.

PO08-029

**TSLP promote MoDCs uptake OVA and induce allergic TH2 immunity by Dectin-2**Yun-Sheng Liang<sup>1</sup>, Bi-Hui Yu<sup>2</sup>

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**Objective** The basic mechanism of how allergens are ingested by antigen-presenting cells and further inducing allergic Th2 immune response is unknown. In recent years, the role of TSLP in DC-induced allergic Th2 immune response and in the pathogenesis of allergic diseases (AD, asthma, etc.) has been recognized and confirmed. The aim of this study was to explore the mechanism of TSLP promote MoDCs uptake OVA and induce allergic TH2 immunity.

**Methods** Normal human CD14<sup>+</sup> monocytes treated with GM-CSF and IL-4 and then immature MoDCs matured for 72-hour with TSLP or LPS. The expression of DC mature differentiated marker molecule (co-stimulating factor CD83, CD86, CD40), OX40L and Fc $\gamma$ -associated receptors FC $\epsilon$ RI, CD16 and Dectin-2 was detected by flow cytometry. Allergen (OVA) Uptake of MoDCs was detected by fluorescence microscope and flow cytometry with FITC labeled OVA. OVA plus TSLP-DCs, LPS-DCs and immature DCs were co-incubated with CFSE labeled CD4<sup>+</sup> naive T cells for 7 days. The relationship between DC and T cells was observed by fluorescence microscope. OVA plus TSLP-DCs, LPS-DCs and immature DCs were co-incubated with CD4<sup>+</sup> naive T cells for 7 days. And anti-Dectin-2 block in TSLP-MoDCs on allergic immunity response. The expression of Th cytokines was detected by flow cytometry.

**Results** Immature DCs has a strong ability to uptake OVA; TSLP-DC retains the ability to uptake OVA, while mature LPS-DCs have deprived the ability to uptake OVA. Immature DCs have no effect on T cells (CFSE labeled green fluorescence), TSLP-DCs and LPS-DCs are obviously promote T cells chemotaxis, proliferation and differentiation. TSLP-MoDCs induce Th2/Th17 differentiation, compared with immature DCs, which could block by anti-dectin-2 antibody.

**Conclusion** TSLP promotes Fc $\gamma$ -associated receptors Dectin-2 upregulation on AD MoDCs, which are necessary and sufficient for TSLP-MoDCs to promote allergens recognition and presentation and induce Th2/17 allergic responses.

PO08-030

**Suppression of Osthole on PMA-induced degranulation of rat basophilic leukemia RBL-2H3 cells**

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**Objective** *Osthole*, an active ingredient isolated from Chinese herbs *Fructus cnidii*, has been clinical proven to be effective in the treatment of allergic skin diseases such as eczema, but its anti-allergic mechanism remains unknown. In this study, we examined the effect of *Osthole* on the degranulation of RBL-2H3 cells induced by Phorbol-12-myristate-13-acetate (PMA).

**Methods** Rat basophilic leukemia (RBL-2H3) cells were cultured in Dulbecco's modified Eagle's medium (DMEM) supplemented with 10% Fetal Bovine Serum (FBS) and exposed to the varying concentrations of *Osthole* and PMA. The cell viability of the untreated- or treated-cells was determined using cell counting kit-8 (CCK-8) assay; the morphological change and degranulation of the cells were assessed using phase-contrast microscopy in combination with toluidine blue staining; the activity of  $\beta$ -hexosaminidase of the cells was also determined to estimate the rate of degranulation. Finally, the ultrastructural changes of these cells were examined using transmission electron microscope.

**Results** As compared with untreated control, the cells exposed to 0.5 mM PMA became more rounded, the numbers of intracellular toluidine blue-positive granules and electron-dense granules were significantly decreased in the PMA-treated cells. The activity of  $\beta$ -hexosaminidase of the treated cells was increased as well. *Osthole* also

dose-dependently inhibited the PMA-induced degranulation in the testing concentrations (1, 10, and 50 mM). Our finding suggested that *Osthole* was a potent inhibitor to block RBL-2H3 cell degranulation.

**Conclusion** *Osthole* dramatically inhibits degranulation of RBL-2H3 cells stimulated by PMA, which possibly contributes to its anti-allergic activity.

PO08-031

### **Lichen planus: an immunohistochemical study of LC3B, mTOR, Rab11a and a unifying hypothesis of pathogenesis**

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**Objective** To investigate the expression of LC3B, mTOR and Rab11a in the epidermis of cutaneous lichen planus (CLP).

**Methods** Biopsy specimens from twelve patients with CLP and six healthy controls were studied. They were divided into 3 groups: the lesional, peri-lesional and non-lesional group. The lesional and peri-lesional groups were from patients with CLP. The non-lesional group was from normal controls. All specimens were examined immunohistochemically for LC3B, mTOR and Rab11a expressions. LC3B positive cells were counted and the expressions of mTOR and Rab11a were evaluated using an immunostaining-intensity-distribution (IID) index.

**Results** LC3B-positive cells expressed mainly at the superficial layer in all groups and the numbers of LC3B-positive cells increased in the lesional group than in peri-lesional and non-lesional control groups. The mTOR expressed mainly at the basal layer of epidermis in normal control group, but located at all epidermal layers in CLP groups. The expression of Rab11a was significantly higher in the lesional group of CLP than in normal control group, especially in the superbasal layer.

**Conclusions** This work shows significant changes of LC3B, mTOR and Rab11a expression in the epidermis of CLP compared with normal control skin, which suggests autophagy may be related to the pathogenesis of CLP.

PO08-032

### **Curative effect of high-dose Levocetirizine in treating recalcitrant chronic spontaneous urticaria and the serum IP3 concentration detection**

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**Background** As a second messenger, IP3 is involved in the signal transduction of many cells. However, there are no studies about the relationship between IP3 and urticaria. The aim of this study was to observe the effects of high-dose levocetirizine on chronic spontaneous urticaria (CSU) and to explore the significance of inositol triphosphate (IP3) in the pathogenesis of CSU.

**Methods** Fifteen cases of recalcitrant CSU were given levocetirizine with a dosage of 15mg po qd for 7 days. The treatment effects on CSU were observed. The serum concentrations of IP3 in patients at different periods were tested by enzyme-linked immunosorbent assay.

**Results** The effective rate of high-dose levocetirizine on CSU was 100% after a 7-day treatment. Four of the patients completely recovered. The average serum concentration of IP3 was  $43.54 \pm 41.97$  pg/mL before treatment,  $18.40 \pm 17.53$  pg/mL after a 7-day treatment and  $1.31 \pm 0.92$  pg/mL in the control group. The average serum concentration of IP3 in the patient group was significantly higher before treatment than after treatment ( $P < 0.05$ ). The level of IP3 in the patient group also was significantly higher than the control group ( $P < 0.05$ ).

**Conclusions** The therapy of high-dose levocetirizine on CSU was proved to be effective, without adverse effects. The level of IP3 was positively correlated with the CSU activity. It is confirmed that IP3 may play an important role in the pathogenesis of CSU.

PO08-033

**Baboon syndrome: A rare cutaneous reaction induced by inhalation of mercury vapour**

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Baboon syndrome is known as systemic drug-related intertriginous and flexural exanthema (SDRIFE). Here we report a case induced by inhalation of mercury vapour. This report describes a 35-year-old male who presented with erythematous and papules on the axillae, trunk, inguinal folds, medial inner thighs and dorsum of the feet. Review of drug intake revealed patient received a inhalation of mercury vapour. Treatment with daily doses of Mizolastine, 10mg per tablet and prednisone, 40 mg per tablet tapered for three days resulted in resolution of the lesions. Conclusion Baboon syndrome, a rare drug reaction is reported. It is important for prevention of inhalation of mercury vapour.

PO08-035

**An analysis of the prevalence of AD prevalence in a primary school in sha district, urumqi**Wen-Hui Zuo<sup>1</sup>, Man-Yu Zhou<sup>1</sup>, Fei Guo<sup>2</sup>, Hong-Xia Liu<sup>2</sup>

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2. Affiliated TCM Hospital of Xinjiang Medical University

**Objective** To analyze the prevalence and affecting factors of atopic dermatitis in children of children in the 27th elementary school of Urumq.

**Methods** In the students of grade 1-6 of 27 primary schools in shaebuck district, a stratified sampling method was used to determine the survey subjects. Through questionnaires combined with physical examination, physicians with graduate students and rich clinical experience from the attending physicians conducted investigations. Flow data were analyzed using SPSS 19.0 statistical software. Measurement data using the *t* test, Counting data Using the  $\chi^2$  test,  $P < 0.05$  was considered statistically significant.

**Results** The total prevalence of AD was 15.53%. The prevalence of AD among males was 18.26%. The prevalence of AD in female children was 13.42%. The prevalence of boys is slightly higher than that of girls, and there was no statistical significance between male and female ( $\chi^2=1.158$ ,  $P > 0.05$ ). The prevalence of AD in Han children was 15.87% (33/175). The prevalence of AD in Uygur children was 10% (1/10). The prevalence of AD in other ethnic groups was 15.22% (7/46), there was no statistical significance between uygur and han nationality. The prevalence of AD in the sixth grade is the highest: 32.08% (17/53). The lowest prevalence rate in the fourth grade was 4.44% ( $P = 0.001$ ). Dry skin conditions have an effect on prevalence with statistical significance. The prevalence of skin frequent dryers was 45%, far higher than that of non-dryers (2.72%). The prevalence of different allergic diseases also affected with statistical significance. Contact (animals, plants, plush toys, blankets), Living environment (building, bungalow, basement), recently house decoration, bathing habit (rubbing, hot bath, after-bath moisturizing) were not found and the incidence of AD related ( $P > 0.05$ )

**Conclusion** Dry skin is a risk factor for AD. Allergic disease, rhinitis, asthma, urticaria) for AD prevalence also have influence, therefore for 10 to 12 years old children allergic disease screening, as well as for the mission and prevention of allergic diseases in children is particularly important.

PO08-038

**Paraphimosis due to butenafine hydrochloride ointment allergy**

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A 24-year-old man presented with the foreskin fully retracted behind the ridge of the glans, which had developed for 5 days. On examination, the patient had well-circumscribed erythematous scaly patches and circular plaques on his upper and inner surface of the thighs and perineum. The patient said the lesions had been present for 4 weeks and he was ever diagnosed with tinea cruris. The foreskin have been swelling after he used a medicine called "Butenafine Hydrochloride Ointment". The patient had no curative effect to the 3-day treatment with prednisone in dermatological clinics, so the dermatologist suggested him visited an urology department. Finally, manual reduction was performed with satisfactory results. This case warns us that dermatologists should choose drugs more carefully when we treat the skin lesion in penis and glans. What's more, paraphimosis is a painful condition which requires prompt treatment. Without effective treatment, it can have severe consequences, including strangulation of the glans and tissue necrosis. The efficacy of glucocorticoid is significant in relieving acute skin inflammation caused by drug allergy but is poor for paraphimosis. Surgical management such as manual reduction is still the first choice of therapy for patient with paraphimosis caused by drug allergy to reducing the swelling of the glans penis and preventing critical complications.

PO08-042

**Research on the efficacy and safety of APCC-1502 moisturizer among dry skin and mild to moderate atopic dermatitis population in northern China**

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**Objectives** 1. Evaluate the moisturizing efficacy and safety of APCC-1502 moisturizer in dry areas in northern China. 2. Evaluate efficacy of APCC-1502 moisturizer to relieve symptoms, improve moisturizing condition and skin barrier function in dry skin and mild to moderate atopic dermatitis population. 3. Provide skin improvement solution to dry skin and mild to moderate atopic dermatitis population.

**Methods** Before experiment, subjects clean their forearms and legs with AESTURA facial cleanser provided by the experiment program. After 20 minutes waiting, panels were evaluated by dermatologists about the original condition and taken photos, then the skin hydration and transepidermal water loss were measured on the cleaned areas. When the experiment starts, subjects apply APCC-1502 twice a day, in the morning and evening, after cleaning their forearms and legs with the facial cleanser. They are followed up once every 2 weeks from the initiation of the experiment to 4 weeks later. Test areas: cubital fossa, popliteal fossa, non-lesion. Test items: skin water content, transdermal water loss rate, disease severity assessment and self-assessment by subjects.

**Results and Conclusion** Two weeks after applying the moisturizer products, local skin water content rapidly increases much higher than the water content before the treatment, and when compared the water content between the 2<sup>nd</sup>, 4<sup>th</sup> week and pre-application respectively, the differences are both significant; intradermal water loss rate obviously decreases, and the differences between the 2<sup>nd</sup>, 4<sup>th</sup> week and pre-treatment are significant; compared to pre-application, the lesion severity of atopic dermatitis decreases, which has a significant difference. Because of measuring part of point values of part of subjects do not find specific results. APCC-1502, which can relief lesion severity, improve intradermal water loss rate, and increase skin water content, has an excellent treatment effect to atopic dermatitis.

PO08-044

**Effects of TGM3 on monocyte-derived dendritic cell (MDDC) activation**Hui-Chun Su<sup>1</sup>, Xu Yao<sup>2</sup>, Bao-Xi Wang<sup>3</sup>*1. The First Affiliated Hospital of Fujian Medical University**2. Institute of Dermatology, Chinese Academy of Medical Sciences & Peking Union Medical College**3. Plastic Surgery Institute, Chinese Academy of Medical Sciences & Peking Union Medical College***Objectives** To detect the effects of TGM3 on monocyte-derived dendritic cell (MDDC) activation.**Methods** Flow cytometer was used to detect the expression levels of CD80, CD83, HLA-DR, and CD86 on MDDCs. Cytometric bead arrays with flow cytometer was used to detect the expression levels of proinflammatory cytokines including IL-1 $\beta$ , IL-6, IL-8, IL-10, IL-12, TNF- $\alpha$  in the supernants.**Results** Compared with control and CD209 blocked ( $\alpha$ -CD209) group, the expression levels of CD83, CD86 on the cells' surfaces and IL-6 were significantly increased. (TGM3 Group vs Control Group vs  $\alpha$ -CD209 Group: CD83 16.4 (4.78-69.55) vs 16.30(5.54-50.10) vs 5.34 (0.35-13.16),  $X^2=18.82$ ,  $P<0.001$ ; CD86 67.30 (48.15-76.30) vs 57.35 (42.73-71.95) vs 34.05 (21.50-55.00),  $X^2=14.05$ ,  $P=0.007$ ; IL-6 5.05 (0-18.92) vs 0.67 (0-5.22) vs 0 (0-21.53),  $X^2=12.40$ ,  $P=0.006$ ).**Conclusions** TGM3 can activate MDDC and induce increased expression of IL-6.

PO08-045

**Study on the binding ability of CD209 and transglutaminase 3 (TGM3)**Hui-Chun Su<sup>1</sup>, Xu Yao<sup>2</sup>, Bao-xi Wang<sup>3</sup>*1. Department of Dermatology, the First Affiliated Hospital of Fujian Medical University**2. Institute of Dermatology, Chinese Academy of Medical Sciences & Peking Union Medical College**3. Plastic Surgery Institute, Chinese Academy of Medical Sciences & Peking Union Medical College***Objectives** To detect the binding ability of CD209 and transglutaminase 3 (TGM3).**Methods** ELISA was used to detect the binding ability of the pre-coated TGM3 and CD209. Prepared EGFP-293T cells and MDDCs, laser confocal microscopy and FCM were applied to detect the binding and up-taking of TGM3 by CD209.**Results** Pre-coated TGM3 could bind with CD209. TGM3 could be recognized, up-taken and engulfed into cells. These effections could be blocked by CD209 blocking antibody and CD209 SiRNA partialy.**Conclusions** TGM3 could be recognized, uptaken and engulfed into dendritic cells as an auto-antigen by CD209.

PO08-046

**Study on the interference efficiency of CD209 SiRNA to CD209**Hui-Chun Su<sup>1</sup>, Xu Yao<sup>2</sup>, Bao-Xi Wang<sup>3</sup>*1. The First Affiliated Hospital of Fujian Medical University**2. Department of Dermatology, the First Affiliated Hospital of Fujian Medical University**3. Plastic Surgery Institute, Chinese Academy of Medical Sciences & Peking Union Medical College***Objectives** To detect the interference efficiency of CD209 SiRNA to CD209.**Methods** CD14<sup>+</sup> monocytes was sorted from peripheral blood and derived to MDDC with high expression of CD209 under specific cytokine stimulation. CD209 SiRNA was transfected to MDDCs with liposome under standardized protocol. The mRNA and protein expression levels of CD209 were detected by FCM and real-time fluorescence quantitative PCR.**Results** The mRNA expression level of CD209 was decreased after the interference for 24 hours. The protein

expression levels of CD209 were decreased after the interference for 48 hours, and were more significant up to 72 hours.

**Conclusions** The mRNA and protein expression level of CD209 could be interfered by CD209 SiRNA partially.

PO08-047

### TGMs expression in the epidermal lesions of atopic dermatitis

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**Objectives** To detect the mRNA expressions levels of of TGMs and protein expression level of TGM3 in the epidermal lesions of atopic dermatitis (AD).

**Methods** we applied qRT-PCR techniques to detect the mRNA expressions levels of TGM1, TGM2, TGM3 and TGM5 in epidermal lesions. The protein expression level of TGM3 was detected by laser scanning confocal microscopy.

**Results** There were no significant differences in the mRNA expression levels of TGM1 and TGM2 between the epidermal lesions of AD patients and epidermis of healthy controls. (TGM1: AD group vs healthy controls: 1.96 (1.29-5.71) vs 0.55 (0.42-1.43),  $P=0.68>0.05$ ; TGM2: AD group vs healthy controls: 0.54 (0.30-1.23) vs 0.55 (0.42-1.43),  $P=0.20>0.05$ ); The mRNA expression levels of TGM3 and TGM5 in epidermal lesions of AD patients were higher than those in Healthy controls (TGM3: AD group vs healthy controls: 9.75 (0.22-17.11) vs 0.99 (0.76-1.19),  $P=0.001<0.01$ ; TGM5: AD group vs healthy controls: 13.13 (5.49-21.96) vs 0.179(0.02-2.51),  $P=0.01<0.05$ ). The protein expression of TGM3 in epidermal lesions of AD patients was higher than that in normal epidermis.

**Conclusions** The mRNA expression levels of TGM3 and TGM5 in epidermal lesions of AD patients were higher than those in healthy controls, and the protein expression level of TGM3 was in epidermal lesions of AD patients was increased at same time.

PO08-049

### Clinical observation of ebastine combined with topical recombinant human epidermal growth factor gel in treatment of eczema on face

Jin-Feng Wang, Lan-Xiang Jiang, Fu-Qiu Li

*2nd Hospital of Jilin University*

**Objective** Discuss effectiveness and safety of ebastine combined with topical recombinant human epidermal growth factor gel in treatment of eczema on face.

**Methods** 75 cases of adult patients with eczema on face were observed. Clinical manifestations include erythema, papules and scales. Subjective symptoms were dryness, stinging and pruritus varied from mild to severe. 10 days of treatment combined orally given evastine at a dose of 20mg/d and topically used recombinant human epidermal growth factor gel twice a day.

**Results** After 10 days of treatment, 28 cases were cured, 34 cases were markedly effective, 11 cases were effective, and 2 cases were invalid. The total effective rate was 82.7%. No drug related adverse events were observed.

**Conclusion** Ebastine combined with topical recombinant human epidermal growth factor gel is effective and safe in treatment of eczema on face.

## PO09 Fungal Infection

PO09-005

### An unusual case of cutaneous penicilliosis Due to *Penicillium citrinum* in an immunocompetent individual

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1. The Third Affiliated Hospital, Sun Yat-Sen University

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Human infections caused by *Penicillium citrinum* have been rarely reported. We report here an unusual case of cutaneous penicilliosis due to *P. citrinum* in an immunocompetent young woman. The lesions in the right cheek were characterized by an isolated red plaque with some dry scales. Penicilliosis was diagnosed after serial laboratory studies based on the observation of hyphae by direct microscopic examination and histopathology. Cultures of the tissue obtained from the lesions developed mold colonies with typical conidia of *P. citrinum* which was identified by sequence of ribosomal DNA of internal transcribed spacer. The treatment with intra-lesional injection of amphotericin B was successful. This case tells us *P. citrinum* is an opportunistic pathogen. Intra-lesional injection of amphotericin B may be a good choice for skin lesion of penicilliosis.

PO09-008

### Factitial panniculitis with secondary *Candida parapsilosis* infection in a patient: A case report

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Department of Dermatology, Xijing Hospital, Fourth Military Medical University

**Background** Factitial panniculitis is a form of panniculitis which induced by external agents. *Candida parapsilosis* is an emerging non-albicans *Candida* that is associated with candidosis. There is no literature about *Candida parapsilosis* infection secondary to factitial panniculitis.

**Methods** We report the case of a 35-year-old woman with a 4-month history of growing skin lesion after nevus removal treatment with an unidentified corroding agent on the right forearm in the local clinic. Histological examination showed lobular panniculitis with focal fat necrosis with formation of fat microcysts. The pseudohyphae were detected in the necrotic region, shown by PAS staining. Staining for acid-fast bacilli, other bacteria were negative, and cultures grew no bacterial but fungal organisms. Specimens were seeded on Sabouraud agar and CHROMagar® *Candida*, forming colonies which was identified as *Candida panniculitis* by VITEK MS matrix assisted laser desorption ionization time of flight mass spectrometry. Nucleic acid of *Candida panniculitis* was detected from tissue specimens through the high-throughput sequencing technology. After treatment with wide excision following by itraconazole, the skin lesion completely healed with no recurrence in the following three months.

**Discussion** Chemical substances might play a role in the early stage of skin lesion, while *Candida parapsilosis* gradually invaded into the subcutaneous fat layer, aggravating panniculitis.

**Conclusions** Clinicians should be aware of the possibility of factitial panniculitis induced by nevus removal treatment with chemical agents. It would be of great use to carry out a fungal culture examination in the protracted course of skin lesions.

PO09-021

### RNA-Seq of macrophages infected with *Fonsecaea monophora*

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**Objective** Chromoblastomycosis is caused by a group of dematiaceous fungi, of which the melanin is a key virulence

factor. So far, several genomic analyses about the pathogen have been conducted, but there is few study on the host. Here, we aim to explore the response of macrophages infected with *Fonsecaea monophora* by RNA-seq.

**Methods** We established the co-culture system of macrophages (J774A.1) and different *F. monophora* at increasing MOI for 12h and 24h respectively. The production of TNF- $\alpha$  in the cell culture supernatants was measured by ELISA. Deep sequencing based on the Illumina system was carried out to acquire the expression profile of macrophages.

**Results** According to the levels of TNF- $\alpha$ , we chose the optimum co-culture system as MOI 10 (macrophages: *F.monophora*=1: 10) for 12 hours. There were 981 differential expression genes, 397 up and 584 down, between the pigmented and albino mutant. Functional annotations using gene ontology showed that the biological process were mainly involved in innate immune response, regulation of MAPK cascade and so on. KEGG analysis showed the differential coding genes were mainly annotated to TNF signaling pathway, Toll-like receptor signaling pathway and MAPK signaling pathway. RT-qPCR validation of some random selected genes was consistent with the sequencing results.

**Conclusion** The albino mutant, because of its deficiency of melanin, could be better recognized by the macrophages, yielding more pro-inflammatory cytokine and chemokines, thus being more easily to be eliminated by the host. Our results provide insights into the role of melanin during the interaction between macrophages and *F.monophora*.

PO09-033

### **Immunomodulatory effects of itraconazole on macrophage M1/M2 Polarization and improvement of phagocytic capacity to *Candida albicans***

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Itraconazole is a commonly used antifungal triazole substance for the treatment of a broad spectrum of fungal infections. Recent studies also highlighted its effects on the human body, including anti-tumor effect. Here, we evaluated the Immunomodulatory effects of itraconazole in the LPS, IL-4 or *Candida albicans* (*C. albicans*) induced polarization of macrophages. Therefore we measured the cytokines profiles by the Luminex or Cytometric Bead Array, polarization-associated protein expression by western blot and the phagocytosis of *C. albicans* by both flow cytometry and confocal laser scanning microscopy. Itraconazole significantly enhance the phagocytosis ability of RAW264.7 cells and M1 polarization *in vitro*. Increased secretion of IL-6 and TNF- $\alpha$  was observed in LPS stimulated RAW264.7 cells which were treated with itraconazole. When induced with IL-4, itraconazole increased the secretion of IL-6, TNF- $\alpha$  and IL-1 $\beta$  and reduced the secretion of IL-10. Much higher expression of IL-6 and TNF- $\alpha$  was identified in *C. albicans* stimulated RAW264.7 cells under the treatment of itraconazole while the expression of IL-4 and IL-10 decreased. Significantly, itraconazole improved the expression of iNOS and inhibited Arg-1. We concluded that the improved M1 polarization in RAW264.7 cells treated by itraconazole indicated a significant immunological enhancement, which brings new ideas on the understanding of its anti-tumor and anti-infection effects and also extends its clinical applications.

PO09-034

### **Cutaneous Mucormycosis caused by *Mucor irregularis* in a healthy patient**

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*Mucor irregularis* is a distinctive pathogenic fungus in Mucorales which prevails in China and mostly involves in non-immunocompromised individuals. We report a case of cutaneous mucormycosis caused by *Mucor irregularis*. A 46-year-old healthy woman presented with a gradually enlarging plaque on the left frontal for 5 months. She had no clear trauma history. Direct scraping microscopic examination showed branched non-septate hyphae. Histopathologic

examination showed multiple inflammatory cells(histocytes,neutrophils and multinucleated giant cells)infiltration with thick,short hyphae in the dermis.Tissue culture and examination with polymerase chain reaction revealed the presence of *Mucor irregularis*.Itraconazole 400 mg per day was given for a treatment,combining with Amphotericin B gradually increasing from 3 mg per day to 25 mg per day in 10 days and then maintaining at 25 mg per day. The skin lesion released for a certain extent after the treatment.

PO09-035

### Identification of dermatophyte species by matrix-assisted laser desorption ionization-time-of-flight mass spectrometry

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**Objectives** We evaluated the ability of the Bruker Filamentous Fungi Library 1.0 of the matrix-assisted laser desorption ionization-time of flight mass spectrometry (MALDL-TOF MS) Biotyper system to identify clinical dermatophytes isolates.

**Methods** We selected 45 clinical dermatophyte isolates preserved at the Research Center for Medical Mycology of Peking University for MALDL-TOF MS analysis and ITS sequence analysis. Liquid cultivation and ethanol-formic acid extraction were used during sample preparation before acquiring spectrum. Acquired spectra were interpreted using both the manufacturer-recommended scores (species, >2.0; genus, >1.7) and adjusted cutoff values establish by this study (species, >1.7; genus, >1.5).

**Results** Compared with results of the ITS sequencing, the correct identification rate at the species level were 22 (48.9%) and 31 (68.9%) with cutoff values of 2.0 and 1.7,respectively. All species were correctly identified at genus level, although 13 isolates misidentified (for example, some *Trichophyton interdigitale* and *Arthroderma benhamiae* isolates identified as *Trichophyton tonsurans* incorrectly; *Trichophyton violaceum* identified as *Trichophyton rubrum* incorrectly).

**Conclusion** These results show that the MALDL Biotyper using the Filamentous Fungi Library 1.0 enables reliable identification of the majority of common clinical dermatophyte isolates with cutoff values of 1.7, although the database should be expanded to facilitate identification of other species such as *Trichophyton violaceum* and *Trichophyton schoenleinii*.

PO09-041

### Immune response of immunosuppressed mice to *Aspergillus fumigatus*

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In recent years, the incidence of invasive pulmonary aspergillosis (IPA) has increased significantly. Therefore, a pulmonary *A. fumigatus* infection model in immunosuppressed mice was established to observe the immune response after infection at different time points. The present results showed that the number of granulocytes in the blood, broncho-alveolar lavage fluid (BALF) and lungs increased markedly in the early stage after exposure to *A. fumigatus* conidia, and the number of macrophages in both the lungs and BALF also increased, suggesting that severe inflammatory infiltration occurred in the infected site. In the absence of an immunosuppressant, the mice could restore immune function and clear the fungi gradually. The immune response of T cells in vivo mainly presented the Th1-type on Day 7 after exposure, which was in contrast to the Th17 immune response in certain other common fungi, such as *Candida albicans*. The same phenomenon was also observed in T cells in vitro after stimulation with the conidia. The ratio of CD4+/CD8+ T cells was over 2 on Day 7 with a high proportion of IFN -  $\gamma$ + CD4+T cells and CD4+CD44 high CD62L low effector memory T cells. The co-stimulatory molecules CD80 and CD86 also participated in the activation of macrophages after stimulation with *A. fumigatus* conidia in vivo, accompanying the robust secretion of TNF -  $\alpha$  and granulocytes migration.

PO09-001

**Newly characterization of a *Candida albicans* isolate from a cervical lymphadenitis patient and its clinic indication**Cheng-Zhen Zhang<sup>1</sup>, Wen-Juan Wang<sup>2</sup>, Qing-Tao Kong<sup>1</sup>, Jiang-Ye Chen<sup>2</sup>, Hong Sang<sup>1</sup>

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**Purpose** *Candida albicans* (*C. albicans*) are regarded as the most common opportunistic fungal human pathogens that can cause superficial and systemic candidiasis. However, little research has been focused on the mechanism of chronic or recurrence of clinical superficial fungal infection. We isolated a hyphal defective *C. albicans* strain (SY) in a patient suffered from recurrent cervical lymphadenitis caused by *C. albicans* for 13 years. We did research on the morphology and genetics characteristics of SY in vitro and in vivo, hoping to reveal the connection between the characterizations of clinical *C. albicans* strain and chronic fungal infection.

**Methods and Results** It was confirmed by morphological observation and molecular methods. RNA-seq revealed that hundreds of transcripts including genes related to pathogenesis and cell adhesion were down-regulated, while genes related to drug export and response to stimulus were up-regulated. The resistance to azoles, osmotic stress, and oxidative stress of SY were increased. Various hyphal inducing conditions including serum, high PH, rapamycin and different medium types couldn't stimulate the yeast-to-hyphal transition. The invasive growth and embedded growth of SY were also defective as compared to wild-type *C. albicans* SC5314. The virulence of SY was reduced and SY may have the ability to evade the host immune system.

**Conclusions** To the best of our knowledge, this is the first report of a hyphal defective *C. albicans* strain that caused recurrent cervical lymphadenitis. Our research may contribute to reveal the proper mechanism of drug resistance and immune escape of *C. albicans* in chronic fungal infection.

PO09-002

**Kerion celsi caused by *Trichophyton violaceum*: A case report and literature review in China from 2011 to 2017**Jian-Qin Wang<sup>1,2</sup>, Lei Shao<sup>1,2,3</sup>, Jing-Yao Liang<sup>1,2</sup>, Si-Ying Xiong<sup>1,2</sup>, Xin Tian<sup>1,2</sup>, Xiao-Dong Li<sup>1,2</sup>, Li-Jie Chen<sup>1,2</sup>, Dong-Mei Li<sup>4</sup>, Yu-Mei Liu<sup>1,2</sup>

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*Trichophyton violaceum* is a common causative agent of tinea capitis. However, the case report of kerion celsi are very rare that caused by *T. violaceum*. Also, the pathogen spectrum of kerion celsi has never been clearly described in the literature. In this study, we report a case of kerion celsi caused by *T. violaceum* that occurred in a 6-year-old Chinese girl. The patient responded very well with combination of corticosteroids and terbinafine therapy. To understand pathogenesis of kerion celsi, we also conducted a retrospective analysis of kerion celsi in China through the publication from 2011 to 2017 written in both Chinese and English.

PO09-003

**Skin microbiome changes in patients with interdigital superficial fungal infection**

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**Objectives** This study was conducted to characterize the bacterial and fungal microbiome changes associated with interdigital tinea pedis.

**Methods** We applied high-throughput sequencing technique to comprehensively investigate the bacterial and fungal microbiomes in patients with tinea pedis, subjects in the remission stage and healthy subjects.

**Results** According to our data, superficial fungal infection was significantly correlated with alterations in the bacterial communities with increased Shannon diversity. The fungal taxonomy analysis demonstrated that the dominant genera might be inconsistent with the culture results. A high abundance of *Streptococcus* spp. was revealed in the patient cohort. The Spearman correlation matrix showed a significant difference in the correlation patterns between *Trichophyton* and other fungal genera. *Streptococcus* was strongly positively correlated with the genus *Trichophyton* but negatively correlated with the enriched genera, such as *Aspergillus*, *Rhizopus*, *Alternaria* and *Malassezia*, in the remission and healthy cohorts.

**Conclusion** Chronic interdigital fungal infection is associated with changes in the bacterial microbiome, including increased diversity and evenness and changes in the abundances of certain bacterial genera. Further studies are needed to establish the potential links between the bacterial and fungal communities in the pathogenesis of recurrent fungal disease.

PO09-004

**Mycobacterium Chelonae/abscessus complex infection of the limbs: A challenging clinical case**

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*Mycobacterium chelonae* (*M. chelonae*) and *Mycobacterium abscessus* are nontuberculous mycobacterium (NTM) with nonspecific symptoms. We present an interesting case of cutaneous *M. chelonae/abscessus* complex in a 26-year old female. The current disease began as two erythematous nodules with slight ulcer and pustules in the left lower limb which developed to abscess soon. After drainage with the abscess, the lesion presented with a five-month history of multiple painless cutaneous lesions at various stages of development: nodules, pustules and hemorrhagic crusts, as well as small erosions and ulcers distributed on the both lower limbs. Subsequent biopsy and culture studies were consistent with a mycobacterial infection. Culture of a skin sample revealed *M. chelonae/abscessus* complex. The diagnosis of *M. chelonae/abscessus* complex is often difficult to establish without prior suspicion of the disease, but can be confirmed with culture. We will describe the symptomatology and diagnosis of this case.

PO09-006

**Sporothrix globosa causing sporotrichosis in Jilin Province (Northeast of China): Prevalence and molecular characterization**

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**Background** Over the past decade, many studies have identified differences among the *S. schenckii* complex species. These studies suggest that cases of sporotrichosis, the mycosis caused by the different species of the genus *Sporothrix*, should be examined based on their region of origin to help distinguish differences in clinical manifestation and

disease transmission of the different fungal species.

**Methods** We summarized the epidemiological data for sporotrichosis patients from Jilin Province, China, from 2010–2016 (2,454 cases) and examined the genetic diversity (by AFLP) of clinical isolates from the affected patients.

**Results** Villagers accounted for 68.3% of the total number of sporotrichosis cases. There was a greater incidence of sporotrichosis in the colder months. All 225 isolates were identified as *S. globosa*. AFLP analysis showed eight distinct clustering groups were divided. There was no obvious association between the AFLP genotypes and the growth rates, clinical manifestations, or antifungal susceptibilities of the *S. globosa* isolates.

**Conclusion** Rural areas are the high-prevalence regions, which due to the environment and lifestyle of the villagers. To date, *S. globosa* is the only species associated with sporotrichosis in northeastern China. The clinical forms of sporotrichosis are probably unassociated with the gene diversity of *S. globosa* but correlate with the fungal virulence or the host immune status.

PO09-007

### Diagnostic and therapeutic study of kerion Caused by *Alternaria Alternata*

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**Objective** To report the first case of kerion caused by *Alternaria Alternata* in China with diagnosis, treatment, characteristic of pathogen in lesion tissues and gene identification of the pathogen.

**Methods** A 5-year-old boy presented to our clinic with scalp alopecia and multiple pustules for 3 weeks. Hairs and pus from the lesion were obtained for microbiological studies. A positive fungus was recovered that was later identified according to morphology and DNA sequencing identification.

**Results** This case was diagnosed with alternariosis according to the finding of round and clavate spores in direct microscope examination, with the positive fungal culture of the pus. The isolate grown on culture was brown villous colony. The spore has wall-brick septum. Conidial spore is arranged in chain shape. He was cured after 1 month treatment with oral itraconazole and terbinafine, and topical sataconazole.

**Conclusion** Kerion can be caused by *Alternaria Alternata*. Direct microscopic examination of potassium hydroxide showed negative. Direct microscopic examination of fluorescence staining showed microspore. Combination of itraconazole and terbinafine is effective.

PO09-009

### Six cases of chronic mucocutaneous candidiasis

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**Objective** To report 6 cases of chronic mucocutaneous candidiasis adopted by our hospital from 2014 to 2018.

**Methods** We summarized clinical and pathological manifestations of these cases. Their responses to treatments and outcome were also analyzed.

**Results** Onset ages ranged from 1 to 9 years. Median onset age is 4.5 years. Only one patient's mother had experienced similar process. Nails and skin around were the most frequent referred sites (5 in 6). The typical skin lesions were characterized by dark red nodules and masses with verrucous-like surface. And typical oral lesions included erosion and white pseudomembrane, with angular cheilitis. Pseudo-epitheliomatous hyperplasia of epidermis and disseminated and nodular infiltration of histocytes and lymphocytes were found in all 6 patients' biopsy samples. PAS and GMS stainings disclosed intensive fungus hypha accumulation within the stratum corneum. *Candida* infection was further verified by microscopy and in vitro culture. T4 level was decreased in one patient. The youngest one is accompanied by HIV infection while others not, which is also the only death case. Other 5 cases were treated by surface anti-fungi drugs and oral fluconazole/itraconazole. Responses were good 2 months after. However,

recurrence was found in every patient after cessation of anti-fungi drugs. The frequency of recurrences would get down when children grow up.

**Conclusion** Chronic mucocutaneous candidiasis's clinical and pathological manifestations of skin, nails, and mucous membranes is characteristic, and ones without severe immunological deficiency could be successfully treated by anti-fungi drugs like fluconazole/itraconazole. Relapse would get less with age growth.

PO09-010

### **Clioquinol, an alternative antimicrobial agent against common pathogenic microbe**

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3. State Key Laboratory of Oral Diseases, West China Stomatology Hospital, Sichuan University

**Objectives** To research the antimicrobial spectrum and activity of clioquinol and seek for the possible antifungal target.

**Methods** Modified agar diffusion assay and agar dilution method were used to judge sensitivity of clioquinol. The observation under fluorescence microscope and scanning electron microscope was conducted after slide culture at 0.5 minimum inhibitory concentrations.

**Results** 3% clioquinol cream could inhibit the growth of most fungal species with different strength. MIC of clioquinol for *C. albicans* standard strain ATCC 10231 was 8 µg/ml. After treated with clioquinol at 0.5 MIC (4 µg/ml) for 7 days, fluorescence intensity weakened and hyphae formation reduced notably under fluorescence microscope. The surface of parts of spores depressed was seen under scanning electron microscope. As for other antifungal drugs, parts of these changes were also seen.

**Conclusion** The antifungal spectrum of 3% clioquinol cream was broad. The antimicrobial strength of 3% clioquinol cream depended on the species but it can act on most of the species. The antifungal function of clioquinol may be related to chitin synthesis and hyphae conversion.

PO09-011

### **Efflux pump inhibitor tetrandrine exhibits synergism with fluconazole or voriconazole against *Candida parapsilosis***

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The aim of this study was to investigate the in vitro interactions between tetrandrine (TET) to fluconazole/voriconazole (FLC/VRC) against *Candida parapsilosis* strains. Susceptibility tests were performed using the broth microdilution method, and the synergy of TET combined with FLC/VRC was examined by the checkerboard microdilution assay. The cell viability under treatment was tested by OD values obtained from XTT reduction. In addition, the effects of TET on the drug efflux pump of *C. parapsilosis* were estimated by the intracellular accumulation and efflux of rhodamine 123 (Rh123) and the mRNA expression levels of several efflux pumps using quantitative RT-PCR. The mean minimum inhibitory concentration (MIC) values of TET, FLC and VRC were 32-64 µg/mL, 0.5-64 µg/mL, and 0.016-4 µg/mL, respectively. TET in combination with FLC/VRC exhibited the synergistic effects against *C. parapsilosis* tested, with the fractional concentration index (FICI) values ranged from 0.094-0.562; moreover, the cell viability study confirmed their synergistic interactions. As TET inhibited the function of Rh123 of *C. parapsilosis*, and the combination of FLC/VRC and TET downregulated the levels of drug efflux pump genes *CDR1* or *MDR1* ( $P < 0.05$ ), suggesting that the synergistic mechanism might be associated with inhibition of the drug efflux pump.

PO09-012

**A case of sporotrichosis presented with multiple crusted nodules, papules and infiltrated plaques on the left cheek: an unusual clinical presentation**

Ya-Bin Zhou, Ruo-Yu Li, Zhe Wan, Wei Chen, Xiao-Qing Liu, Wei Liu

*Peking University First Hospital***Objective** To report a case of sporotrichosis, caused by *Sporothrix globosa* with a rare manifestation.**Methods** A 51-year-old woman presented to our clinic with crusted nodules, papules and infiltrated plaques on her left cheek. A skin biopsy was obtained from the lesion on the cheek for histopathological examination and microbiological studies. A positive fungus was recovered that was later identified according to morphology and DNA sequencing identification.**Results** This case was diagnosed with sporotrichosis according to the finding of round fungal yeast cells in histopathological examination, with the positive fungal culture of the tissues. A velvety, brown colony was seen in the PDA macroculture further microscopic examination of the cultured organisms revealed branching septate hyphae and characteristic conidiophores in a flower-like arrangement. By molecular procedure, the organism was finally identified as *S. globosa*. After a 3-month treatment with oral itraconazole 400 mg/d combined terbinafine 250 mg/d, the skin lesions were almost completely resolved with some residual scarring.**Conclusions** Sporotrichosis occurred in the face can be presented with crusted nodules, papules and infiltrated plaques. Combination of itraconazole and terbinafine is effective.

PO09-013

 **$\alpha$ -(1,6)(1,2)-Mannoprotein of *Candida albicans* promotes proliferation and inhibits apoptosis of macrophages through akt activation**

Hang-Hang Jiang, Rui-Qun Qi, Yang Han, Yu-Zhe Sun, Yu-Jing Zhang, Xing-Hua Gao

*No.1 Hospital of China Medical University***Background** *Candida albicans* is a commensal fungus that associates with human hosts. Under normal circumstances, this interaction does not cause severe life-threatening disease. The innate immune system, which is primarily dependent on macrophages, will react to its clearance. Its polysaccharide is the major antigen for immunocytes and leads to a series of reactions in Akt signaling.**Objective** To investigate the immunoeffect of *Candida albicans* polysaccharides and the role of Akt signaling on cell proliferation and the cell cycle.**Methods** Polysaccharides of *Candida albicans* were analyzed and evaluated by high performance gel filtration chromatography (HPGPC). Western blotting and flow cytometry methods were employed to detect disruptions in Akt signaling.**Results** Polysaccharides of *Candida albicans* were separated and extracted successfully, as shown by HPLC.  $\alpha$ -(1,6)(1,2)-mannoprotein is one of five polysaccharides which demonstrated potent influence on mouse macrophages. It increased the phosphorylation level of the Akt signaling pathway, up-regulated the pro-proliferative relative protein and anti-apoptotic protein, and down-regulated the anti-proliferative protein of Akt signaling. Adding Akt pathway inhibitor could eliminate the above effects of mannoprotein.**Conclusion**  $\alpha$ -(1,6)(1,2)-mannoprotein, a constituent of the *Candida albicans* cell wall, demonstrated immune-enhancing effects by activation of the Akt signaling pathway. Understanding the biological effects of polysaccharides on macrophages will provide more.

PO09-014

**Nonprofessional phagocytic cells invasion by *Candida albicans*: induced endocytosis vs active penetration**Bo Pan<sup>3</sup>, Jiang-Han Chen<sup>1</sup>, Xiao-Gang Liu<sup>1</sup>, Wei-Hua Pan<sup>1,2</sup>, Wan-Qing Liao<sup>1,2</sup>, Yao-Ping Liu<sup>3</sup>, Solis Norma<sup>3</sup>, Scott Filler<sup>3</sup>

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**Aim** The aim of the research was to observe the procedure of *C. albicans* entering into epithelial and endothelial cells dynamically and evaluate the role of host cells and pathogens during this process.

**Methods** We used time-lapse live cell imaging method to capture snapshots of the early stages of *candida*-nonphagocytic host cells interaction. Two different mechanisms to invade nonphagocytic host cells, induced endocytosis and active penetration were also compared in epithelial cells and endothelial cells.

**Results** Our results showed that induced endocytosis was the main route for *C. albicans* invasion of endothelial cells and played an important role to invade epithelial cells at the early stage, which was dependent on cell motility, cytoskeleton, and membrane receptors of host cells. EGFR, HER2 receptors, and PI3K pathway of host cells played a role in the induced endocytosis. Active penetration was an important invasion route at the late time point, which related to fungal vitality, hyphal growth, and *C. albicans* invasins. *C. albicans* invasins, Als3, Ssa1, and Hgc1 took part in the process of active penetration.

PO09-015

**Superficial fungal infections of the male penis and scrotum: 32 cases series report**

Mei-Rong Li, Song-Chao Yin, Ling Wei, Han Ma, Chun Lu, Pei-Ying Feng

Department of Dermatology and Venereology, the Third Affiliated Hospital of Sun Yat-sen University

**Objective** To explore the clinical features and causative agents of superficial fungal infections of the male penis and scrotum.

**Methods** A retrospective case series analyses was done on 32 patients with superficial fungal infections of the male penis and scrotum in our Dermatology Department during the period 2007-2017. Data of basic information, clinical characteristics, and the causative agents were evaluated.

**Results** Most of the patients were young adults with average age 20.5 years old and 2.6 months onset. Dermatophytes were the most frequently isolated pathogens with 26 isolates, including 15 (45.5%) *Microsporum gypseum*, 8 (24.2%) *Trichophyton rubrum*, 2 (6.1%) *Epidermophyton floccosum* and 1 (3.0%) *T. tonsurans*; together with 7 yeast isolates, including 3 *Candida glabrata*, 2 *C. albicans*, 1 *C. guilliermondi* and 1 *Trichosporon asteroides*.

**Conclusion** The causative agents of superficial fungal infections of penis and scrotum are diversity, and dermatophytes were the most frequently isolated pathogens. *Microsporum gypseum* usually causes solitary infection of tinea scrotum with typical clinical features, while *T. rubrum* causing tinea penis and scrotum complicated with multiple otherwise tinea.

PO09-016

**A case of fungal immunofluorescence in the diagnosis of Facial tinea**

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The left face of a 49-year-old-woman showed forehead erythema, surface scab, itching for more than 3 months.

Before more than 3 months, the left side of the patient's face is granulation and pruritus, with no obvious inducement. It is not dealt with. The papules continue to expand, and a scab appears on the surface. Outside the hospital several times according to the given topical treatment of eczema, (Specific drug ominous) after topical miconazole. 10+ day rash further aggravation, the surface scab more obvious, itching also aggravated, with our clinic clinic, fungal smear negative, diagnosis: eczema like dermatitis, "Triamcinolone Acetonide and Econazole Nitrate Cream" 5 days after external use, skin lesions improved not obvious, and the area continues to expand, the cumulative lips and the right cheek, again our clinic treatment, the two times of direct microscopic examination of fungi was negative. Fungal hypha and spores were detected by immunofluorescence. Diagnosis: Tinea incognito of the face. The forehead, left lip and right cheek of the left face are large round erythema, the edge is slightly uplifted and the surface is ringed, the surface is thin scab, and some area is covered with yellow scab, a little exudation and clear boundary. Give Itraconazole Capsules 100 mg, take orally, 2 times/d, Naftifine Hydrochloride and Ketoconazole Cream for external use, 2 times /d. 2 weeks of common recovery. The follow-up has not recurred until now. Tinea incognito is mainly for external use of glucocorticoid or long-term scratching skin lesions, the formation of the boundary is not clear, the central loss of self-healing tendency, and causing atypical skin lesions of tinea corporis. In addition, due to the face of tinea of tinea, the skin lesion is more difficult to identify because of the influence of face washing, make-up and Shabu Shabu and other factors. It is easily misdiagnosed as "dermatitis", "eczema" and other. The patient did not do fungal examination several times outside the hospital, and the blind treatment was 3 months ineffective. The symptoms were aggravated, and the patient used "Da cning" to affect the direct inspection of the fungi in our hospital. It was suggested by Iye and Marks in 1968. It can be seen as lupus erythematosus, eczema, rosacea and seborrheic dermatitis on the face. Sometimes it can cause multiple folliculitis or granulomatous lesions, which is easy to misdiagnose. The clinical manifestations of skin lesions are not typical, and those with poor response to other diseases should consider the possibility of fungal infection, as early as possible mycological examination, so as to avoid misdiagnosis. In addition, this case is negative for fungal direct microscopic examination because of its own use of antifungal agents. A new detection method, fungal immunofluorescence, makes up for this flaw.

PO09-017

### **Anti-Interferon- $\gamma$ autoantibodies are underlie the disseminated *Talaromyces marneffe* infection**

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**Background** Adult-onset immunodeficiency syndrome due to neutralizing anti-interferon (IFN)- $\gamma$  autoantibody is an emerging medical issue, particular in Southeast Asia, including South China. *T. marneffe* and its associated infection were mainly reported in the same geography zone. We addressed the role of anti-IFN- $\gamma$  autoantibodies in the HIV-negative patients with disseminated *T. marneffe* infection and investigated the HLA alleles associated with these patients.

**Method** We enrolled 36 HIV-negative, otherwise healthy adults who later developed *T. marneffe* infections. The presence of anti-IFN- $\gamma$  autoantibodies were measured and investigate their association with HLA-DRB1, DQB1 alleles.

**Results** High prevalence (91.7%) of anti-IFN- $\gamma$  autoantibodies was observed in previously healthy adults who later suffered from *T. marneffe* infections. Furthermore, we confirmed HLA-DRB1\*16: 02 and DQB1\*05: 02 are strongly associated with anti-IFN- $\gamma$  autoantibody in Southern China population.

**Conclusion** Adult one-set acquired immunodeficiency due to autoantibody against IFN- $\gamma$  is the most important cause of severe *T. marneffe* infections in non-HIV patients in endemic regions. These findings will contribute to the study of pathogenesis and therapeutic targets for these patients in the near future.

PO09-018

**Synergistic activity of tacrolimus or triamcinolone acetonide with itraconazole, terbinafine, bifonazole, and amorolfine against clinical dermatophyte isolates**Jin-Qing Zhang<sup>1</sup>, Jing-Wen Tan<sup>2</sup>, Yan-Ling He<sup>1</sup>

1. Beijing Chao-Yang Hospital, Capital Medical University, Beijing

2. Shanghai Dermatology Hospital, Shanghai

**Objective** To evaluate antifungal activity of Tacrolimus (TAC) and triamcinolone acetonide (TRI) in combination with antifungal agents against dermatophyte isolates.

**Methods** We investigated the *in vitro* interactions between (TAC)/(TRI) and several main antifungal agents, ITC (itraconazole), TRB (terbinafine), BIZ (bifonazole), and AMF (amorolfine) in 28 clinical dermatophyte isolates, including 13 *Trichophyton rubrum*, 6 *Trichophyton mentagrophytes*, 5 *Microsporum canis*, and 4 *Epidermophyton floccosum* strains, using the microdilution checkerboard technique, adapted from the CLSI M38-A2 microdilution method.

**Results** TAC and TRI did not exhibit any significant antifungal activity against all the tested strains at the highest concentration tested (MICs > 8 µg/ml). However, a strong synergistic interaction was observed for combinations of TAC with ITC (53%), TRB (53%), or BIZ (63%) against *Trichophyton* strains. In comparison, the TRI/ITC (11%) and TRI/BIZ (16%) combinations showed weaker synergistic activity against the same *Trichophyton* strains. In addition, TAC showed synergistic interaction with ITC against 20% *M. canis* strains, with TRB against 60% *M. canis* strains, and with BIZ against 25% *E. floccosum* strains. No synergism was observed when *M. canis* and *E. floccosum* strains were exposed to TRI in combination with these drugs. Antagonism was not observed for any of the combinations. Compared with TRI, TAC showed better synergy when combined with antifungal agents, especially topical TRB and BIZ, against dermatophyte isolates.

**Conclusion** Our findings indicated that a combination of TAC with antifungal agents could be a promising option for the treatment of inflammatory dermatomycoses.

PO09-019

**Evaluation of the effects of photodynamic therapy alone and combined with standard antifungal therapy on biofilms of *T. rubrum*, *T. mentagrophytes* and *Microsporum gypseum***Bo-Rui chen<sup>1,3</sup>, Yi Sun<sup>2</sup>, Jing-Jun Zhao<sup>3</sup>, Xiao-Mo Wu<sup>1</sup>, Jin-Yan Zhang<sup>1</sup>

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**Objectives** The results of intractable onychomycosis are mostly due to the nails are too tough to be penetrated and the structure of dermatophytoma relate the sessile extracellular matrix might exist in some lesions. The antimicrobial photodynamic therapy (aPDT) has been demonstrated to effectively inactivate multiple pathogenic fungi and is considered as a promising alternative treatment for mycoses.

**Methods** We performed tests using methylene blue (8, 16, and 32 µg/ml) as a photosensitizing agent and light emitting diode (635 ± 10 nm, 60 J/cm<sup>2</sup>), and evaluated the effects of photodynamic inactivation on six strains of *T. rubrum*, eleven strains of *T. mentagrophytes* and three strains of *Microsporum gypseum*, as well as photodynamic effects on *in vitro* susceptibility to terbinafine, itraconazole, cyclopirox and fluconazole in biofilm form. In addition, using scanning electron microscopy to investigate the morphological changes caused by aPDT to the biofilms of dermatophyte.

**Results** Photodynamic therapy was efficient in reducing the growth of all strains tested, exhibiting colony forming against the biofilms of dermatophytes, respectively. Notably, the photodynamic effects against the biofilm of dermatophytes strains with higher sessile minimal inhibitory concentration 50 (SMIC50) values than untreated groups for terbinafine, itraconazole, cyclopirox and fluconazole, respectively. After the aPDT test, the exceptional perforated

structure of ECM was observed with the use of scanning electron microscopy.

**Conclusions** *In vitro* photodynamic therapy was efficient in inactivation the biofilms of *T. rubrum*, *T. mentagrophytes* and *Microsporum gypseum*. In addition, the combination of aPDT and antifungal drugs arises as a promising alternative for the treatment of onychomycoses.

PO09-020

### **AcuD gene is involved in morphogenesis and virulence of the human pathogenic fungus *Talaromyces marneffe***

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**Objective** To characterize the function of *acuD* gene in *Talaromyces marneffe*.

**Methods** Our group disrupted *acuD* gene in *T. marneffe* by homologous recombination, and the  $\Delta$ *acuD* mutants were confirmed by PCR and RT-PCR. Different culture conditions were applied to identify morphogenesis of wide-type and  $\Delta$ *acuD* mutants of *T. marneffe*. Moreover, we utilized a *T. marneffe*-*G. mellonella* infection model to monitor the virulence of  $\Delta$ *acuD* mutants and wild-type strains at both 25 °C and 37 °C.

**Result** The growth rate of the  $\Delta$ *acuD* mutants showed no obvious difference from the wild-type strains to utilize glucose for growth. However, the deletion of gene *acuD* led to a significant reduction to utilize sodium acetate for growth and less conidial production on potato dextrose agar (PDA) plate. In addition, when compared with the wild-type,  $\Delta$ *acuD* mutants was significantly less virulent in a *Galleria mellonella* infection model when the larvae were incubated at 37 °C and 25 °C.

**Conclusion** The gene *acuD* plays an important role in morphogenesis and virulence of the pathogenic fungus *T. marneffe*.

PO09-022

### **Transcriptional profiling of macrophages infected with *Fonsecaea monophora***

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**Objective** Chromoblastomycosis (CBM), a cutaneous and subcutaneous mycosis, is caused by a group of dematiaceous fungi, of which the melanin is a key virulence factor. So far, several genomic analyses about the pathogen have been conducted, but there is few study on the host. Here, we aim to explore the response of macrophages after infected with *Fonsecaea monophora* by High-throughput RNA sequencing (RNA-seq) analysis.

**Methods** We established the co-culture system of macrophages (J774A.1) and different *F. monophora*, namely the wild type (CBS 269.37), the meristematic pigmented mutant (CBS 122845) and its albino mutant (CBS 125194), at increasing MOI for 12h and 24h respectively in vitro. The production of TNF- $\alpha$  in the cell culture supernatants was measured by ELISA. Total RNAs of macrophages were extracted using the traditional trizol method and submitted to NanoDrop 2000 and Agilent 2100 Bioanalyzer to determine their quality. Deep sequencing based on the Illumina system was carried out to acquire the expression profile of macrophages.

**Results** According to the levels of TNF- $\alpha$ , we chose the optimum co-culture system as MOI 10 (macrophages: *F. monophora*=1: 10) for 12 hours. Compared to the control group, we found 185 differential expression genes in the wild type, with 80 genes up and 105 genes down regulated. Meanwhile, there were 981 differential expression genes, 397 up and 584 down, between the pigmented and albino mutant. Functional annotations of the corresponding coding genes using gene ontology (GO) showed that the biological process were mainly involved in innate immune response, response to external stimulus, regulation of MAPK cascade and so on. KEGG (Kyoto Encyclopedia of Genes and Genomes) analysis showed the differential coding genes between pigmented and albino mutant were mainly annotated to Cytokine-cytokine receptor interaction, TNF signaling pathway, Toll-like receptor signaling pathway and MAPK signaling pathway, among which the inflammatory cytokines, such as *Il-1 $\beta$* , *Il6* and *Tnf*, and the chemokines

including *Ccl2*, *Ccl3*, *Ccl4*, *Ccl7*, *Ccr1*, *Cxcl10* and *Cxcr4*, were down-regulated in the group of pigmented mutant. RT-qPCR validation of some random selected genes, containing *Tnf*, *Traf1*, *Tnfaip3*, *Tnfrsf1b*, *Fos*, *Il1a*, *Il1b*, *Il6*, *Ptgs2*, *Jun*, *Jund* and *Dusp5*, was consistent with the sequencing results.

**Conclusion** The albino mutant, because of its deficiency of melanin, could be better recognized by the macrophages, yielding more pro-inflammatory cytokine and chemokines, thus being more easily to be eliminated by the host. Our results provide insights into the response of macrophages infected with *F. monophora*, particularly the role of melanin during the interaction between macrophages and *F. monophora*.

PO09-023

### Topical use of 1% luliconazole cream cured with *Fusarium oxysporum* infected refractory ulcers on an elderly patients leg and ankle

Xin Ran, Xian Jiang, Sheng Wang, Yu-Ping Ran

West China Hospital of Sichuan University

**Objective** We report a case of a 73-year-old male patient presented with wound in the left leg and ankle for 5 months.

**Method** The patient applied several kinds of fresh herbal on his wound as the treatment with topical and systemic antibiotics was ineffective. He was admitted to the hospital because the wound turned into a painful ulcer. The cutaneous examination showed left leg with moderate edema and two ulcers each sized 4cmx4cm. The ulcer surfaces covered with black crusts and yellowish exudates. Under fluorescence microscope of the fluorescence staining of the crusts showed irregular septate hyphae and large round spores. Whitish colonies developed while inoculating the crusts on Sabouraud Dextrose Agar with 25 °C for 3 days. The pathogen was identified as *Fusarium oxysporum* after DNA was extracted, by PCR and sequence. Histopathology showed a large number of hyphae on the surface of ulcer, with infiltrate of neutrophils at the bottom. Hence, the diagnosis of Fusariumosis was confirmed. The crusts and wound exudates were removed by wound dressing. Based on the drug sensitivity test, itraconazole and terbinafine was excluded and treated with the topical use of 1% luliconazole cream and povidone-iodine.

**Results** After treating nearly for 7 months, both the ulcers reduced to 1cmx1cm, with no any side effects.

**Conclusion** Luliconazole, a new topical use azole, is more efficient to treat *Fusarium oxysporum* infection, approved *in vivo* and *in vitro* in this rare case.

PO09-024

### An *in vitro* study of photodynamic inactivation on *Fonsecaea Monophora* by TMPyP4

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**Background** Chromoblastomycosis (CBM), a cutaneous and subcutaneous mycosis, is caused by dematiaceous fungi. As a recalcitrant disease, CBM usually need long term antifungal treatment combined with other approaches. Antimicrobial photodynamic therapy (APDT) is a promising therapeutic modality with positive clinical and researching effect on various fungal infections, such as Candidiasis and Onychomycosis.

**Objectives** Evaluated the fungicidal efficacy and investigate the mechanism of cytotoxicity of antimicrobial photodynamic inactivation (APDI) on *Fonsecaea monophora* which known as one of the prevalent agents that cause CBM.

**Methods** The APDI performed with a blue light source (415 nm, 0-25 J/cm<sup>2</sup>) and a four-methyl pyridine porphyrin (5, 10, 15, 20-tetra-(N-methyl-4-pyridyl) porphyrin TMPyP4, 0-50 μM). Colony-Forming Units (CFU) counting and Live/Dead Fluorescence were applied for APDI efficacy evaluation. Confocal microscopy was used to observe the uptake and intracellular localization of TMPyP4 incubated with fluorescent probe. Furthermore, the ADPI effect was also compared when potassium iodide (KI, 0-400mM) was added in.

**Results** It showed a significant antifungal effect against *F. monophora* which was irradiation dose- and TMPyP4

concentration-dependent. The APDI effect was also highly potentiated in presence of KI (>100 mM). Confocal microscopy revealed that TMPyP4 binds to the *F. monophora* nucleus after incubated with *F. monophora* conidia.

**Conclusions** Combination of KI and TMPyP4-PDT may have utility as a potential novel treatment for CBM.

PO09-025

### Zygomycosis patients with diabetes type 2 in the mainland of China: A hidden challenge

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**Objective** To investigate the epidemiology and clinical characteristics of diabetes combined with zygomycosis in the mainland of China.

**Methods** Studies of diabetes combined with zygomycosis in China since 1990 were collected from electronic databases such as PubMed, CNKI, CJDF, and VIP, and Chinese physician full-text journals.

**Results** Fifty-seven articles (74 cases) were included in the study. The median patient age was 49.8 years (range, 16–77), with a male predominance (M: F = 1.55: 1). Without specific clinical and radiographic features, the diagnosis was mainly dependent on mycologic and/or histopathological examinations. Amphotericin B was the first-line antifungal drug used for diabetes combined with zygomycosis, and a better efficacy was achieved when it was combined with surgical treatment.

**Conclusions** In recent years, the prevalence of diabetes combined with zygomycosis has increased in mainland China. For cases of suspected diabetes combined with zygomycosis, it is necessary to initiate early anti-fungal therapy and the combination of surgical treatment may improve patient outcome.

PO09-026

### Study on drug susceptibility of *Candida albicans* in free state and biofilm state

Jing Yang

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**Objective** 1, Preliminary study on susceptibility of *Candida albicans* to common triazole drugs in Free State; 2, Preliminary study on susceptibility of *Candida albicans* to common triazole drugs under biofilm condition; 3, To explore whether the caspofungin of *Candida albicans* in different state has a sensitization phenomenon.

**Method** Collected from February 2017 to August 2017 clinical specimens of suspected fungal infection in dermatology Department of the second Hospital of Shanxi Medical University, 160 samples were inoculated to the weak medium of sand fort, 37 °C incubator for 48 hours, and 88 parts were screened on smooth surface of milky colony. Then, 85 strains of *Candida albicans* were obtained by identification system of *Candida* Chromagar and API 20C aux *Candida* spp. The genomic DNA of 85 *Candida* strains and *Candida albicans* standard strains were extracted, and 66 *Candida albicans* strains were further screened by PCR amplification with the common fungal primers. 39 strains of *Candida albicans* were randomly selected, and the Free State and biofilm state of *Candida albicans* were constructed, and the drug sensitivity experiment was conducted by using M27-A3 micro-broth dilution method to observe and record the MIC50 values of various single drugs and caspofungin net combined verapamil. To analyze the relationship between the changes of MIC50 value and the different state of *Candida albicans*, and to explore whether the sensitization of caspofungin net combined with verapamil in different state of *Candida Albicans* was produced.

**Results** 1. In this experiment, 85 *Candida* strains were obtained from 160 clinical specimens collected. *Candida albicans* accounted for 66 strains (77.65%), smooth *Candida* bacteria accounted for 13 strains (15.29%), tropical candidiasis accounted for 3 strains (3.53%), nearly smooth *Candida albicans* accounted for 2 strains (2.35%), and *Candida albicans* accounted for 1 strains (1.18%). 2. Using M27-A3 micro-broth dilution method, the 39 strains of *Candida albicans* in different state were carried on the drug sensitivity test of fluconazole, Ketoconazole, itraconazole, caspofungin net and caspofungin net combined with verapamil, and the MIC50 values were observed and recorded by

normal test, are not in accordance with normal distribution ( $P < 0.05$ ), using rank and test, describing the use of  $M \pm QR$  (the median  $\pm$  four-digit spacing),  $p < 0.05$  has statistical significance. ① fluconazole: *Candida albicans* biofilm State ( $64 \pm 64$ ) is higher than Free State ( $8 \pm 60$ )  $P < 0.001$ , the difference is statistically significant. ② itraconazole: *Candida albicans* biofilm State ( $8 \pm 15$ ) is higher than the Free State ( $0.25 \pm 0.88$ ),  $P < 0.001$ , the difference is statistically significant. ③: *Candida albicans* biofilm State ( $8 \pm 12$ ) is higher than Free State ( $1 \pm 3.75$ )  $P < 0.001$ , the difference is statistically significant. 3. In the free state, the kapoor net single drug group ( $0.5 \pm 1.88$ ) was higher than that of the carpophen group ( $0.13 \pm 0.19$ )  $P = 0.001$ , and the difference was statistically significant. In the state of biofilm, the kapofern single drug group ( $2 \pm 3.5$ ) was higher than that of the carpophen group ( $0.5 \pm 1.75$ )  $P < 0.05$ , and the difference was statistically significant. It is shown that the effect of carpofenn on *Candida albicans* in different states can result in sensitization.

**Conclusion** 1. *Candida albicans* infection in the patients, *albicans* is the main pathogen, and the common zoledronic drugs and caspofungin net there are different degrees of resistance, clinical treatment should be drug sensitive results, select sensitive antifungal drugs to patients with individualized treatment; 2. The drug resistance rate of *Candida albicans* to Fluconazole, fluconazole, Itraconazole and Caspofungin was lower than that of biofilm. 3. The net of verapamil and caspofungin can increase the sensitivity of the net of Poisson to different state *Candida albicans*, so it can be used as a net sensitizer to provide a new direction for the treatment of *Candida albicans* infection.

PO09-027

### Correlation between mutation/overexpression of Mrr2 , CDR1 genes and fluconazole-resistant in *Candida albicans* isolates

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**Objective** To Investigate the mutual effects among the mutation and/or overexpression of Mrr2 , CDR1 and Fluconazole (FCA) resistant in *Candida albicans* isolates.

**Methods** The *in vitro* drug susceptibility tests were conducted on 80 clinical isolates of *C. albicans* using M27-A3 broth microdilution method. The gene expression of Mrr2, CDR1 in all 80 isolates were measured using FQ-RT-PCR. All Mrr2 gene sequences were amplified using PCR, and the sequences were compared against to a known Mrr2 sequence in GenBank to identify the mutation of Mrr2.

**Results** The *in vitro* drug susceptibility test of 80 isolates showed that 40 isolates were susceptible to FCA, 10 dose-dependent and 30 resistant. The mRNA levels of Mrr2 and CDR1 genes were significantly elevated in FCA-resistant isolates compared with FCA-susceptible isolates. Furthermore, the mRNA levels of Mrr2 was positively correlated with CDR1 in *C. albicans* isolates ,  $r = 37.6\%$ . There were twelve mutations of Mrr2 identified from the 29 isolates. The mutation rate of Mrr2 in FCA-resistant isolates ( 56.67%) was significantly higher than FCA-susceptible isolates (26.08% ). It was 47.50 times in the drug resistance of Mrr2 mutation and overexpression than non-mutation and lowerexpression.

**Conclusion** The resistance to FCA may be associated with the mutations and/or overexpression of Mrr2, CDR1 in *C. albicans* isolates. In addition, overexpressed Mrr2 and CDR1 are found in FCA-resistant isolates, and the mRNA levels of Mrr2 may be positively correlated to CDR1 in FCA-resistant isolates. The mutation and overexpression of Mrr2 gene may have a synergistic effect on FCA-resistant isolates.

PO09-028

**Mutations and/or overexpressions of ERG3 and Efg1 genes in clinical azoles-resistant isolates of *Candida albicans***

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**Objective** To investigate whether mutations and/or overexpressions of ERG3 and Efg1 genes were involved in drug resistance to azoles in *Candida albicans*.

**Methods** Totally, 50 clinical isolates of *C. albicans* were included in this study. Antimicrobial susceptibility tests, including fluconazole (FCA), itraconazole (ITR), and voriconazole (VRC), were performed by broth microdilution method. Mutations in the ERG3 and Efg1 genes sequence were detected. The mRNA levels of ERG3 and Efg1 were measured by RT-PCR. The correlation of the expression levels of ERG3 with Efg1 genes in susceptible isolates and resistant isolates was analyzed by Pearson's correlation analysis.

**Results** Among 50 *C. albicans* isolates, 44.00%, 56.00% and 50.00% isolates were resistant to FCA, ITR, and VRC, respectively. Sequencing results revealed that only 2 silent mutations were found in ERG3 genes of cross-resistant isolates, while 6 amino acid substitutions, including 5 azoles-susceptible isolates and 1 ITR-resistant isolates, were frequently found in Efg1 genes. The mRNA levels of ERG3 genes were significantly elevated in susceptible compared with *C. albicans* resistant isolates, and Efg1 genes were significantly elevated in resistant compared with susceptible *C. albicans* isolates. Furthermore, the mRNA level of ERG3 was negatively correlated with Efg1 in *C. albicans* isolates.

**Conclusions** The resistance to azoles may be associated with the mutations in ERG3 but not be made sure Efg1 genes in *C. albicans* isolates. In addition, overexpressed ERG3 genes are found in susceptible *C. albicans* isolates, and overexpressed Efg1 genes are found in resistant *C. albicans* isolates. The mRNA levels of ERG3 genes may be negatively correlated to Efg1 genes in resistant *C. albicans* isolates.

PO09-029

**Role of Bem46 gene in the polar growth of *Aspergillus fumigatus***

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**Objective** Observed the localization of Bem46 gene in the germination of *Aspergillus fumigatus* and the expression of Bem5 gene and Bud1 gene related with in the polar growth of *A. fumigatus*

**Methods** The homologous gene of Bem46 gene in *A. fumigatus* was found by bioinformatics, and the knockout strain of Bem46 gene was constructed. The Bem46 gene was connected with the enhanced green fluorescent protein (EGFP), and hygromycin was used as a screening marker to construct a localized strain (Bem46+EGFP). The location of the Bem46 gene was observed during the growth of *A. fumigatus* using laser scanning confocal microscope. The RNA of Ku80 and rBem46 were extracted and reversed to get to cDNA. The expression of Bem1 gene and Bud5 gene were detected by the real-time fluorescence quantitative (RT-PCR) while the tubulin was a contrast

**Result:** The Bem46 gene, Afu7g04660, was found in the genome of *A. fumigatus* by sequence alignment. It is composed of 1116bp bases and encodes 311 amino acids. rBem46 were obtained by protoplast method and verified by PCR and Southern blot. After the protoplast transformation and PCR verification, the Bem46 gene fluorescent location strain was successfully obtained. The fluorescence was distributed in the mycelium and the specific location was not observed under confocal microscopy, but there was a fluorescence aggregation at the branch. The expression levels of Bem1 and Bud5 related with the polar growth were significantly lower in the Bem46 than the control strain by RT-PCR.

**Conclusion** The Bem46 gene does not directly form the related structure of polar growth such as mycelial septum or mycelial tip, but it probably participates in the polar growth process of *A. fumigatus*. The deletion of the Bem46 gene

leads to the downregulation of Bem1 and Bud5 gene expression which may greatly affect the polar growth signaling pathway. This study provides a new idea for the mechanism of *A. fumigatus* growth.

PO09-030

### Study on the expression of murine dendritic cells to stimulate the *Sporothrix schenckii* complex produce inflammatory factors

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**Aim** The infection and clearance of spore mycelosis and its pathogens is closely related to the immune response of the host organism. But the natural immune cells dendritic cells of *Sporothrix schenckii* infection and invasion complex recognition plays an important role in scavenging. The purpose of this study was to observe the characteristics of the secretory expression of different inflammatory factors in the dendritic cells stimulated by the clinical isolates of spore filamentous complex isolated from Xinjiang, to preliminarily predict the function of the inflammatory factor.

**Method** Experimental clinical strains originate from infected patients with lymphatic spore mycelosis. The bacteria were configured to form a different concentration of bacterial suspension ( $1 \times 10^4$  cfu/ml-  $1 \times 10^7$  cfu/ml). Stimulation of dendritic cells in mice (concentration of cell suspension  $1 \times 10^6$  cells/ml). The cell culture supernatant was collected at 6 hours, 24 hours, 48 hours and 72 hours, respectively. The expression of TNF- alpha, IFN- gamma, IL-4, IL-1 beta and IL-6 were detected by enzyme immunoassay and Western-blot at the cell level and protein level respectively.

**Result** The stimulated dendritic cells secrete IL-1 beta, IL-6 and TNF- alpha. At different time points respectively: the secretion of IL-1 beta (6 hours:  $53.72 \pm 25.21$ ; 24 hours:  $58.55 \pm 24.84$ ; 48 hours:  $62.93 \pm 28.26$ ; 72 hours:  $80.56 \pm 39.28$ ), IL-6 (6 hours:  $180.23 \pm 112.28$ ; 24 hours:  $253.17 \pm 141.58$ ; 48 hours:  $332.83 \pm 177.84$ ; 72 h:  $395.07 \pm 226.74$ ), TNF-alpha (6 hours:  $860.36 \pm 20.64$ ; 24 hours:  $356.03 \pm 11.46$ ; 48 hours:  $457.43 \pm 17.39$ ; 72 hours:  $1454.53 \pm 19.46$ ). The level of secretion increased gradually with time and concentration dependence, but no secretory expression was found in IFN-gamma and IL-4.

**Conclusion** This study tested the dendritic cells in the innate immune response of *Sporothrix schenckii* complex infection. The key is the secretion of inflammatory cytokines IL-6, IL-1 beta, TNF- alpha, and play an important role in the inflammatory process they produce inflammation resistance, and IFN- gamma and IL-4 has not been involved in inflammatory responses, the subsequent need to study the influence of IL-1 beta, IL-6 and TNF-gamma on fungal spore phagocytosis and clearance.

PO09-031

### Isolation and identification of 359 strains of *Candida albicans* and its susceptibility to 5 kinds of antifungal agents

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**Objective** To study the antifungal susceptibility of *Candida albicans* and the drug resistance rate, provide basis for clinical selection of antifungal agents and effective control of *Candida albicans* infections.

**Methods** A total of 359 strains of *Candida albicans* which were collected from 3 Hospital in Shantou between 2013 and 2016 were isolated and identified by CHROM agar candida, and their antifungal susceptibility to 5 kinds of commonly used antifungal agents were assessed by Rosco Disk diffusion method for yeast susceptibility testing.

**Results** Of the 359 strains of *Candida albicans*, the susceptibility rates to Itraconazole, Terbinafine, Nystatin,

Amphotericin B and Flucytosine was 89.13%, 7.24%, 96.94%, 94.43%, 89.97%, respectively; the drug resistance rates to these five antifungal agents was 9.75%, 88.30%, 1.39%, 3.06%, 5.29% respectively.

**Conclusions** *Candida albicans* isolates in Shantou area are still highly susceptible to the Itraconazole, Nystatin, Amphotericin B and Flucytosine, but have a highly drug resistance rates to Terbinafine, clinical antifungal therapy should be based on the results of pathogen identification and antifungal susceptibility testing.

PO09-032

### **Genotype and virulence factors analysis in the human fungal pathogen *Cryptococcus neoformans***

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The fungus *Cryptococcus neoformans* is a leading cause of mortality and morbidity among HIV infected individuals. We analyzed 71 *Cryptococcus neoformans* isolates consisted of 39 strains from HIV-infected patients and 24 strains from HIV-uninfected patients and 8 strains from environment. Multilocus sequence typing (MLST) was used to characterize genotypes, yielding 4 sequence types. The largest clonal cluster consisted of 60 isolates, all belong to VNI Type5. According to different origins, 71 *Cryptococcus neoformans* strains could be separated into three nonredundant groups. Strains isolated from HIV-uninfected patients were associated with higher mortality in mouse infection model, exhibited increased capsule production and melanin production. The results of these analyses suggest that more virulence is needed to infected a healthy immune system in the human fungal pathogen *Cryptococcus neoformans*.

PO09-036

### **Comparative transcriptome analysis of *Sporothrix Schenckii* during dimorphic switch**

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**Background** Sporotrichosis is a common cutaneous mycosis caused by the dimorphic fungus *Sporothrix schenckii*, which exhibits a temperature-dependent dimorphic switch. At 25 °C it grows in a mycelia phase, while at 37 °C, it forms unicellular yeast cells. The formation of yeast cells was thought to be a requisite for the pathogenicity of *S. schenckii*. The aim of this study was to identify fragments that might be related to morphogenesis, whole-cell transcriptome from the mold and early yeast stages of *S. schenckii* were analyzed.

**Methods and Results** The transcriptome data analysis from two samples (cultured for 96H in SDA medium on 25 °C and for 36H in BHI medium on 37 °C) revealed 10969 up-regulate genes and 199 down-regulate genes during dimorphic switch of *S. schenckii*. These differential expressed genes were identified by the function annotation and cluster analysis to involve the following process: protein phosphorylation, intracellular protein transport, cellular protein modification process, small GTPase mediated signal transduction, vesicle-mediated transport, translation, intracellular signal transduction, microtubule-based process, ATP synthesis coupled proton transport. Sixteen interesting genes in MAPKs cascade and two-component histidine kinase phosphor-relay signaling pathways were found to be up-regulate expressed.

**Conclusions** Comparative transcriptome analysis of *S. schenckii* during dimorphic switch identified a large number of differential expressed genes with various function, which suggested that the molecular mechanism in pathogenesis of *S. schenckii* is regulated by multiple gene networks. This study contributes to further understand the role of these candidate genes in dimorphic switch, as well as the functional genomics of *S. schenckii*.

PO09-037

**A case of tattoo complicating lymphocutaneous sporotrichosis**

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This study was to report one case of lymphocutaneous sporotrichosis after tattoo. A 30-year-old male suffered from painful erythematous nodules linearly arranged on his right upper extremity for 6 months. The histopathology of HE staining showed a large number of mixed inflammatory cells in the dermis. Dark brown colonies of *Sporothrix* were found after 7 days of fungal cultures. Cotton blue staining of fungal cultures showed quincuncial spores. The patient was diagnosed with sporotrichosis combined tattoo. The patient was treated with oral itraconazole 0.2g twice daily. The lesions subsided partially after 2-month treatment, and patient was under tracking.

PO09-038

**In vitro activities of eight antifungal drugs and their combinations against dematiaceae strains**Ying Ji<sup>1,2</sup>, Ruo-Yu Li<sup>2</sup>, Wei Liu<sup>2</sup>, Zhe Wan<sup>2</sup>, Qian Wang<sup>2</sup>, Hao Zhang<sup>2</sup>*1. Second Hospital of Shanxi Medical University**2. Peking University First Hospital*

**Objective** The *in vitro* activities of eight antifungal drugs and five of their combinations against 75 clinical dematiaceae strains were tested.

**Methods** Clinical and Laboratory Standards Institute (CLSI) M38-A2 guideline was applied, MICs (Minimal Inhibitory Concentration) were observed both in alone for each drug and five combined test for five drugs, furthermore we also calculated FICI (Fractional Inhibitory Concentration Index) to evaluate the interactions between drugs.

**Results** When the drugs were tested alone, Terbinafine and Voriconazole were found to require the similar and the lowest drug concentrations for prevention of discernible growth, followed by posaconazole, itraconazole, whereas fluconazole, caspofungin and micofungin were found highest MICs. The highest synergy was shown by the combination of itraconazole plus caspofungin followed by amphotericin B plus caspofungin. There were no antagonism effect in the five combinations were tested.

**Conclusion** The newer triazoles are active against dematiaceae isolates from clinical samples. When caspofungin was combined with itraconazole or amphotericin B, synergy but no antagonism was observed. However, the *in vitro* results presented here need to be confirmed by using the appropriate animal models of dematiaceae strains.

PO09-039

**Melanin of *Fonsecaea monophora* modulates murine macrophage polarization**

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**Objective** Melanin has been linked to *Fonsecaea monophora* (*F. monophora*) virulence. While the role and mechanism remain unclear. Herein we address this question in a BALB/c infection model using albino and melanin strains of *Fonsecaea monophora*.

**Methods** BALB/c mice infection models were established with albino and melanin strain of *F. monophora*. Fungal virulence, histopathology and macrophage polarization of proinflammatory nodules of this two strains were compared.

**Results** Melanin strain is more virulent than albino mutant of *F. monophora* in BALB/c mice infection model. Histopathology of inflammatory nodules around M1-form cells revealed that the melanin strain induced significantly larger proinflammatory nodules as compared to the albino strain of *F. monophora*. Moreover, *F. monophora* melanin could alter macrophage phenotype to M2, which features a decreased expression of M1 marker iNOS and increased

expression of M2 marker Arg-1.

**Conclusions** Melanin is important for virulence *F. monophora*-BALB/c mice infection model. It may modulate host immunity by altering macrophage polarization.

PO09-040

### **Clinical aspects and pathogen identification of tinea incognito**

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**Objective** To investigate clinical aspects and the distribution of the pathogenic dermatophyte species of tinea incognito.

**Methods** We collected clinical data of tinea incognito in Affiliated Hospital of North Sichuan Medical College from Jan. 2016 to Jan. 2017. Making full use of morphology and molecular biology technology in our study, to identify its pathogenic dermatophyte species.

**Results** There were 49 patients involved in our study including 25 male patients and 24 female patients. The average age was  $29.11 \pm 21.89$  years old. In our study, 34 patients (69.39%) lived in the countryside. The shortest clinical course of the disease was just 4 days, however, in some cases, the course even lasted for more than 10 years. The lesions occurred in face, limbs, truncus, perineum hips and neck. Tinea incognito had been misdiagnosed as eczema, neurodermatitis, facial dermatitis, folliculitis, psoriasis, insect bite dermatitis, rosacea and herpes zoster. And 41 patients ever used non-antifungal drugs. Four dermatophyte species were identified, *Trichophyton mentagrophytes* (65%), followed by *Trichophyton rubrum* (25%), *Microsporum cains* (6%), *Trichophyton tonsurans* (4%).

**Conclusions** 1. Tinea incognito were not only related to topical corticosteroid, but may also associated with pathogenic dermatophyte species. 2. The most pathogenic dermatophyte species were *Trichophyton mentagrophytes* and tinea incognito, which was often misdiagnosed as eczema, occurred in the face for the most of time.

PO09-042

### **A case of *Candida Balanitis* with hyperplastic plaque mimicking vascular neoplasm**

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A 61-year-old man presented with a nodule measured  $1.5 \times 1$  cm for 2 months on balanus. Polari-light dermatoscopy revealed proliferated globular vascular with white scale. Histologically, proliferated vascular with amount of inflammatory cells infiltration were observed. Serum level of TPPA and RPR were negative. During detailed questioning, the patient reported recurrent sensation of itching and burning in prepuce and a history of diabetes with high preprandial blood glucose level of 13mmol/L. Fungus microscope examination and culture turned out positive. An effective treatment of oral itraconazole 100mg bid for 4 weeks confirmed the diagnose of fungal balanoposthitis. We would like to highlight the role of fungus examination in untypical balanoposthitis of diabetics.

PO09-043

### **Tenosynovitis infection of *Mycobacterium marinum*: A case report and literature review**

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*Mycobacterium marinum* (*M. marinum*) is an environmental opportunistic mycobacteria which usually infects in humans via inoculation of the skin by fish bite or exposure of an open wound to contaminated water, then induces superficial infections or invasive infections. This present case reports a *M. marinum* infection in a 50-year-old female

patient that diagnosed with suppurative tenosynovitis on the dominant hand for 4 months. The patient had several medical consultations, without adequate aetiological diagnosis investigation either appropriate treatment, she suffered from the severe evolution of disease. The culture and the polymerase chain reaction confirmed the diagnosis. Histopathology detected acute cellulitis, and showed no acid-fast bacilli. After eight months of treatment with rifampin and clarithromycin, our patient showed good response and cured. Misdirected treatment leads to a poor prognosis. Therefore, it is important for clinicians to be aware of this disease.

PO09-044

### **A case of an invasive fungal infection which was misdiagnosed as an IgG4 related disease**

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**Medical record summary:** A 68-year-old male patient presented with persistent tearing without a cause, elevated bilateral eyelid swelling, enlarged bilateral palpebral palsy, atrophy of the masseter muscles, runny nose, and perioral numbness, and gradually developed diarrhea. -8 times/day, yellow loose stools, without mucus and pus and blood. Gradually develop dyspnea, affect sleep, external hospital diagnosis of "chronic sinusitis", during hospitalization showed increased immunoglobulin, IgG 7070 mg/dl, IgE 2120 IU/ml, to symptomatic treatment, the effect is not good, consider not to exclude multiple myeloma, The Department of Hematology of the Hospital of China improved the classification of the bone marrow and the immunophenotyping, and temporarily ruled out hematologic malignancies. The examination showed that the echoes of the parotid glands were uneven, the bilateral submandibular glands increased, the echoes were uneven, and the blood supply increased. The CT of the thighs showed abdominal cavity and peritoneum. The posterior fat space was extensively flocculent, with multiple lymph nodes in the abdomen and retroperitoneum. Hormone veins and oral therapy were given. The details were unknown. Tears and runny nose were alleviated earlier, and the frequency of diarrhea was reduced, 4-5 times per day. The nature was the same as before. The hormone was not continued after discharge. 3 months ago trunk, limbs scattered in small red papules, accompanied by itch, affect sleep, diarrhea more severe than before, eyelid swelling with tears, 10 days ago outside the hospital Pathology Tips: prurigo, expert consultation consider not to exclude "IgG4-RD", to oral Hormone therapy, swelling of the bilateral sacral swelling was significantly reduced after treatment, most of the rash subsided, and both eyes were highly swollen. For further treatment, "IgG4-RD" was admitted to the hospital, diet was poor, sleep was poor, urine was normal, stool was as In front of the complaint, the weight was reduced by 5kg in the past 3 months.

**Discussion:** The patient's elderly men developed tears in both eyes, edema around the eyelids, orbital area, and facial nerve invading symptoms. Gradually, other systemic manifestations such as diarrhea, and elevated serum IgG suggesting IgG, parotid lymph node biopsy spotted IgG4 plasma cells, the initial diagnosis of "IgG4-related diseases." After the use of hormones to stop treatment, the symptoms worsened and disseminated extremity papules appeared. Combined with subacute onset, the possibility of infection was considered.

After timely administration of antifungal treatment and supportive treatment, the patient's clinical symptoms improved, and the G test turned negative.

## *PO10 Genetic Disorders*

PO10-002

### **Juvenile xanthogranuloma occurred in a patient based on the juvenile myelomonocytic leukemia and neurofibromatosis type 1 after allogeneic hematopoietic stem cell transplantation**

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The association of juvenile xanthogranuloma (JXG), juvenile myelomonocytic leukemia (JMML) and

neurofibromatosis type 1 (NF1) had been reported by sporadic cases previously and the mechanisms remained poorly understood. We report a rarely case of JXG occurred in a patient based on the JMML and NF1 after allogeneic hematopoietic stem cell transplantation (HSCT). A 19-month-old boy with small yellowish and dome-shaped nodules on his scalp, face, trunk and limbs and the diagnosis of Juvenile xanthogranuloma was definitive. The patient was born with multiple cafe-au-lait macules and have a heterozygous mutation in the NF1 gene and was diagnosed as JMML at the age of 6 months. HSCT was performed when he was 12-month year old. Immunosuppressive treatment following the HSCT included cyclosporine, meprednisone and decitabine. JXG occurred in this patient after HSCT and cafe-au-lait macules were depigmented within the follow-up. We also speculated JXG might be the complication of HSCT and insufficient immunosuppressive therapy could be used to explanation the depigmentation of Caf au-lait macules.

PO10-004

### **First report of DDB2 mutations in a Chinese Han family with xeroderma pigmentosum**

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Xeroderma pigmentosum (XP) is a rare skin cancer-prone autosomal recessive disease characterized by increased susceptibility to UV radiation. The clinical features include skin pigmentation, skin cancers, ocular surface disease and in some patients, sunburn and neurological degeneration. According to the pathogenic gene, XP can be divided into eight groups: XP-A to -G and variant. XP-E patients exhibit sunlight-induced lentiginous pigmentation and they are prone to develop multiple skin cancers. We identified to adult XP-E patients from a Chinese consanguineous family. Patient 1 is a 25 years old girl; she has clinical sensitivity to UV light including pigmented macules and patches on her face, neck, extremities and especially the dorsa of the hands. The sun exposed skin showed slight dryness and xerosis. She had the first basal cell carcinomas (BCCs) removed 3 years ago, and now she develops about 2 BCCs per year. She has no neurological abnormalities. Patient 2 is a 20 years-old boy, the brother of Patient 1. He has the similar clinical features with his sister and developed the first BCC 3 years ago. Their parents are healthy and they are healthy. Patients' written informed consent was obtained. Then DDB2, ERCC1, ERCC4, POLH, XPA, XPC was sequenced. We identified a novel DDB2 mutation of two patients and their parents are heterozygous of this mutation.

PO10-005

### **A case of aquagenic wrinkling of the palms**

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Aquagenic wrinkling of the palms (AWP) is a rare condition which is characterized by appearance of whitish papules, plaques, an excessive wrinkling and swelling of the palmar skin after exposure to water about 3 to 5 minutes. In 1964, it was first described by Elliot in cystic fibrosis patient. It is also called aquagenic acrokeratoderma, transient aquagenic palmar hyperwrinkling and aquagenic syringal acrokeratoderma. In most cases, young women are affected, and an association of AWP with cystic fibrosis has been surmised.

A 17-year-old female presented pricking focal various sized whitish papules, plaques with wrinkles on both palms after water contact for 6 months ago. On the physical examination, whitish discoloration and edematous wrinkling appeared on her palms after 5 minutes water immersion and returned to normal within 30 minutes after dry. There were no respiratory symptoms. She had no relevant family or medical history of systemic disease except localized hyperhidrosis. Histopathology findings showed hyperkeratosis, dilated eccrine duct with acrosyringia, otherwise it seems like normal skin. She had cystic fibrosis transmembrane conductance receptor (CFTR) test because 80% of cystic fibrosis patients show aquagenic wrinkling of the palms. However, the test result was negative.

AWP patients may benefit from topical application of 15-20% aluminum chloride solution or local injection of

botulinum toxin, but most mild AWP patients do not require treatment, we explained the progress of the disease and decided to observe.

Herein we present a rare case of aquagenic wrinkling of the palms occurred in a young healthy woman.

PO10-007

### **Olmsted syndrome with severe pruritus and mutation in TRPV3**

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Olmsted syndrome (OS), first reported by Olmsted in 1927, is a rare congenital disorder inherited by autosomal dominant form or X-linked recessive form. There are 15 mutations in the TRPV3 gene and 2 mutations in the MBTPS2 gene reported for the cause of OS. Olmsted syndrome has variable clinical manifestations including symmetrical keratoderma on the palms and soles, hyperkeratotic plaques around orifices, diffuse alopecia, onychodystrophy, follicular keratosis, and constriction of the digits. Pruritus has also been reported, although less frequently in about 16% of OS cases, but can be severe. These variable clinical features highlight the phenotypic diversity of OS. Here we present a case of two-year-old Chinese boy with severe pruritus of OS lesions in whom one mutation in *TRPV3* was verified. The patient had severe pruritus and atypical clinical features, so we assume that the Leu673Phe (L673F) substitution on *TRPV3* may be associated with the itching of OS.

PO10-008

### **Two cases of xeroderma pigmentosum with ERCC2/ERCC5 gene mutation**

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We report two cases of xeroderma pigmentosum. Case 1 is a 3-year-old boy with brown patches and atrophic hypopigmental spots on his face, ears, neck and back for 2 years. The rashes are more severe in summer, mainly in light-exposed areas. Case 2 is an 1-year-old boy with brown spots and hypopigmental patches on his face for 1 year. Genetic testing suggested complex heterozygous mutation in ERCC2(XPD) gene was found in case 1, while ERCC5(XPG) in case 2. Skin pathology of case 2 indicated xeroderma pigmentosum. Sun protection was used. The children survived in one year's follow-up. The skin lesions enlarged than before, but no malignant tumors were found. Xeroderma pigmentosum is an extremely rare autosomal recessive hereditary skin disease. Gene mutations occur in the DNA damage repair pathway. DNA damage by ultraviolet radiation cannot be repaired, causing skin prone to pigmentation, dryness, atrophy, keratosis, freckles, keratoacanthoma, squamous cell carcinoma, basal cell carcinoma, malignant melanoma, etc. Ocular lesions, nerve damage, visceral malignancies and developmental disorders can also occur. This disease should be early diagnosed and protected. Early clinical manifestations combined with genetic testing are the main basis for diagnosis.

PO10-011

**Genetic analysis of autosomal dominant multiple syringomas**Toshihide Higashino<sup>1,2</sup>, Chao-Kai Hsu<sup>1,3</sup>, Christos Petridis<sup>4</sup>, Christos Tziotzios<sup>1</sup>, Alexandros Onoufriadis<sup>1</sup>, Wei-Ming Wu<sup>5,6</sup>, Michael Simpson<sup>4</sup>, John McGrath<sup>1</sup>1. *St Johns Institute of Dermatology, Kings College London*2. *Department of Integrative Physiology and Bio-Nano Medicine, National Defense Medical College*3. *Department of Dermatology, National Cheng Kung University Hospital, College of Medicine, National Cheng Kung University*4. *Department of Medical and Molecular Genetics, Kings College London*5. *Dr Wu Skin Clinic*6. *Department of Dermatology, Chang Gung Memorial Hospital, Kaohsiung Medical Center, Chang Gung University, College of Medicine*

Syringomas are benign skin tumours that arise from part of the eccrine ducts or acrosyringium although their precise aetiology is unknown. In some individuals, syringomas may be familial with autosomal dominant inheritance. Previous genetic linkage to chromosome 16q22 has been demonstrated but no candidate gene was identified. In this new study, we performed further analysis on the Taiwanese individuals and pedigrees who contributed to that earlier linkage study. We undertook whole-exome sequencing (WES) on 15 individuals (11 affected and 4 unaffected) from 7 pedigrees and followed a model of rare dominant inheritance by focusing for protein variants with a minor allele frequency (MAF) of less than 1% that were co-segregating with the phenotype. However, no candidate pathogenic variants for the linkage interval were detected. Next, whole-genome sequencing (WGS) was done on 16 affected individuals from 4 pedigrees (1 affected parent and 3 affected children for each pedigree). However, no rare variant or affected gene shared by all 16 samples was found in the linkage interval. Next, we repeated the genome-wide linkage analysis for all 7 pedigrees by combining the genotyping data from WES and WGS, which resulted in the identification of two new loci on 1q21 and 15q24, each with suggestive evidence for linkage (LOD >3) as well as a revised linkage interval on 16q21 which overlaps with the previous one. Characterization of these new intervals is now underway to try to identify a causal gene for familial syringomas.

PO10-017

**Five novel RECQL4 mutations in four patients with Rothmund-Thomson syndrome and analysis of RECQL4 mRNA expression in one typical patient**

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**Background** Rothmund-Thomson syndrome (RTS) is an autosomal recessive genodermatosis presenting with poikiloderma and associated with short stature, sparse scalp hair, sparse or absent eyelashes and/or eyebrows, juvenile cataracts, skeletal abnormalities, premature aging and a predisposition to cancer. RECQL4 causative mutations are responsible for RTS.

**Objective** To detect causative mutations of RECQL4 in a set of RTS patients and provide new evidences for further study of the etiopathogenesis of RTS.

**Methods** Four Chinese patients with RTS were collected in the study. Genomic DNA was extracted from the peripheral blood samples of 4 RTS patients, their parents and 100 unrelated healthy individuals. The complete RECQL4 gene was amplified by polymerase chain reaction (PCR) and PCR products were fully sequenced. Sequence comparisons and analyses were performed using the Basic BLAST program. The relative levels of RECQL4 mRNAs were determined by real-time RT-PCR.

**Results** Six different heterozygous mutations of RECQL4 gene were identified in 3 patients with RTS, which were c.2752G>T(p.Glu918X), c.3061C>T(p.Arg1021Trp), c.910C>T(p.Gln304X), c.3062G>A(p.Arg1021Gln), c.160\_161insGGGCC(p>Gln54ArgfsX30) and c.3501-3502\_delCG. Real-time experiments confirmed notable

decreased levels of the RECQL4 mRNA in the patient 1 compared with the control and his parents.

**Conclusion** Five novel heterozygous mutations of the RECQL4 gene were found in this study. Our data enlarged the database on mutations of RECQL4 gene and enhanced our comprehension of genotype-phenotype correlations in RTS.

PO10-018

### **SASH1 related autosomal-dominant dyschromatosis**

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In this report, we present a five-generation Chinese family with a rare variant of dyschromatosis featured by generalized lentiginos and progressive diffuse and blotchy hypopigmentation. By whole-exome sequencing of three members in the pedigree, a SASH1 missense mutation c.1556G>A (p.Ser519Asn) was identified in this family. After excluded the possibility of single nucleotide polymorphism in 300 unaffected control individuals matched for the geographical location, the SASH1 was confirmed to express in the skin tissues of the patient using immunohistologic staining. Missense mutation c.1651T>G (p.Tyr551Asp) in SASH1 was also identified in another two-generation family with similar clinical features. So, these causative mutations in SASH1 were verified to be responsible for the distinct phenotype. Interestingly, the missense mutations c.1556G>A (p. Ser519Asn) and c.1651T>G (p.Tyr551Asp) in SASH1 have been documented to be responsible for only lentiginous phenotype without hypopigmentation and DUH-like phenotype, respectively. Their clinical features are obviously different from our study patients' lesions, especially the blotchy hypopigmentation. Taking these information into account together, it is undoubtedly logical that all these SASH1 related pigmentation defects are belong to the same disease spectrum and consistent with an autosomal dominant inheritance pattern with extremely variable expressivity. Further histological examinations were also performed to assess this dyschromatosis. We found that the number and activation of melanocytes in the lesions might be responsible for hypo- and hyperpigmentation respectively. These results could be suggestive for the further functional study of SASH1 gene.

PO10-023

### **A novel type of hereditary angioedema: HAE due to a plasminogen mutation**

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**Background** The classic types of hereditary angioedema (HAE), types I and II, are caused by a deficiency of complement C1-inhibitor, due to mutations in the SERPING1 gene. Mutations in the coagulation factor XII (F12) gene have been identified as one cause of so-called 'HAE type III' ('HAE with normal C1-inhibitor'), explaining about 25% of type III families. Here we describe the identification of a plasminogen (PLG) gene mutation representing the molecular basis for another subgroup of HAE type III.

**Methods** Medical histories, pedigree information, and venous blood samples were obtained from members of eight 'HAE families with normal C1-inhibitor and no F12 mutation'. The PLG gene was screened for mutations using PCR and sequencing. Plasminogen protein was studied using isoelectric focusing and SDS-PAGE of plasma samples.

**Results** A rare missense mutation was newly identified in exon 9 of the PLG gene. This mutation (c.1100A>G), encountered in 3 out of 8 unrelated patients, but not in controls, predicts a Lys-to-Glu substitution in position 311 of the mature protein, within the kringle 3 domain. Immunoblotting studies demonstrated an aberrant plasminogen protein in plasma of mutation carriers. Angioedema attacks of the tongue are the typical clinical manifestation of the novel HAE entity described here ('HAE type C').

**Conclusions** The predicted structural and functional impact of the mutation, its absence in controls, and its co-segregation with the phenotype in large families provide strong support that the p.Lys311Glu mutation and the corresponding dysplasminogenemia cause disease, that the PLG gene is a new angioedema gene.

PO10-028

**A novel mutation in keratin 5 cause a mild recessive epidermolysis bullosa simplex**

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**Background** Epidermolysis bullosa simplex (EBS) is a blistering dermatosis caused by dominant mutations in KRT5 and KRT14, whereas mutations in the gene for plectin (PLEC1) causes the rare EBS. However, about 5% recessive EBS of all EBS mutations due to KRT14 mutations have been reported. In this study, we investigated one EBS patient with mild blisters on the feet caused by little trauma. Mutation detecting in KRT5 revealed a homozygous c.1474T>C mutation, but there are no recessive EBS caused by KRT5 mutation have been reported by now. The purpose of this study was to assess the effect of this KRT5 mutation in the recessive EBS.

**Methods** Expression of keratin, desmoplakin, p38 MAPK signaling and other markers were assessed using reverse transcription-polymerase chain reaction, Western blot and indirect immunofluorescence.

**Results** RT-PCR revealed this mutation resulted in KRT5 missense mutation. KRT5 mutation cause intraepidermal blistering, activated P38 MAPK signaling and down-regulated desmoplakin in the skin biopsy of patient compared to WT control, and did not alter expression of K5 or K14.

**Conclusion** Collectively, our findings have implications c.1474T>C mutation of KRT5 lead to mild recessive EBS.

PO10-030

**Comorbidities or different entities? Phenotype variability associated with psen mutations**Wen-Rui Li<sup>1</sup>, Hao-Xiang Xu<sup>1,2</sup>, Yan-Yan He<sup>1,2</sup>, Lin Lin<sup>1</sup>, Cheng-Rang Li<sup>1,2</sup>

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Acne Inversa (AI) is featured by painful boils, cysts, abscesses, sinus tracts and scars in flexural areas. Mutations in PSENEN have been identified to be responsible for familial AI. Occasionally deleterious PSENEN mutations were reported to underlie few others genetic skin disorders such as Familial comedones and Dowling-Degos disease (DDD). In 2014, Rerknimitr et al reported patients with AI-like lesions in two Thai families. They extended the disease spectrum to diagnose familial comedones and identified *PSENEN* as the causative gene. While Zhou et al. claimed that the diagnosis of AI might be more favorable and we agree with them. DDD is characterized by reticulate hyperpigmentation particularly affecting the flexural areas. In 2017, heterozygous truncating mutations in *PSENEN* have been found in 6 unrelated patients and families with DDD and approximately half of the patients also presented with AI. Dr. Ralser argued that *PSENEN* mutations underlie DDD with an increased susceptibility to AI. Interestingly, the histopathologic manifestation of the 6 probands characterized by follicular hyperkeratosis, which is a common pathological phenomenon in AI but not in DDD. And AI may manifest as heterogenic phenotypes because of reduced penetrance. What's more, the heterozygous one-base pair insertion, c.84\_85insT (p.L28FfsX93) of *PSENEN* observed in the two Thai families with familial comedones by Panmontha et al. is identical to the *PSENEN* mutation detected in a Thai family with DDD by Ralser et al. We speculate that these families originate from a common ancestor and suffer from AI with co-existing AI-DDD. In summary, we insist that diffuse comedones and reticulate pigmentation in *PSENEN* mutation carriers should be considered as a sub-phenotype of AI.

PO10-037

**Terminal osseous dysplasia with pigmentary defects in a Chinese girl with *FLNA* mutation**

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Terminal osseous dysplasia with pigmentary defects (TODPD) is an extremely rare X-linked dominant syndrome, which is characterized by pigmentary skin defects, cutaneous digital fibromas, and skeletal anomalies. Recent studies revealed TODPD was caused by a unique variant, c.5217G>A (p.Val1724\_Thr1739del), in the *FLNA* gene. A 9-month-old Chinese girl was presented in our clinic with multiple dysmorphic features that had been present since her birth. She was the first child of non-consanguineous unaffected parents. Physical examination showed light brown-to-yellow, slightly atrophy macules on the central forehead and bitemporal regions. Other facial features included frontal bossing, blepharoptosis, bilateral epicanthal folds, a broad nasal root and a flat nasal bridge. Future examination revealed dysplastic teeth and an accessory oral frenulum between the right lower lip and right lower gum. Musculoskeletal inspection showed hand and foot contractures. There was partial soft tissue syndactyly of the second through fourth fingers on her right hand and partial soft tissue syndactyly of third and fourth toes on her left foot. Radiological examination showed shortened metacarpals of bilateral thumbs, periostosis and bone destructions in the metacarpals and phalanges. Biopsies taken from the nodules on her right hand were confirmed to be digital fibromas. DNA extracted from her paraffin-embedded tissue was screened for *FLNA* mutations by complete Sanger sequencing. Genetic test returned positive for *FLNA* c.5217G>A heterozygous mutation diagnostic for TODPD. Parental test was declined. To the best of our knowledge, this is the first case of TODPD caused by *FLNA* mutation reported in Chinese population.

PO10-040

**Junctional epidermolysis bullosa complicated with nephrotic syndrome**Li Ding<sup>1</sup>, Xing-Li Zhou<sup>1</sup>, Pradhan Ojaswi<sup>1</sup>, Krista Shrestha<sup>1</sup>, Xiao-Ping Du<sup>1</sup>, Mei Yang<sup>1</sup>, Song Lei<sup>2</sup>, Wei Li<sup>1</sup>*1. Department of Dermatology, West China hospital, Sichuan University**2. Department of Pathology, West China hospital, Sichuan University*

**Aim** To report a female child with junctional epidermolysis bullosa, who presented with nephrotic syndrome, a previously unreported complication in EB patients in China.

**Methods** Skin biopsy specimens for light-microscopic examination and electron-microscopic examination were taken from a new developed blister on the abdomen of the proband. Genomic DNA was extracted from the peripheral blood samples obtained from the proband, her parents and younger brother. High-throughput genome sequencing was used for DNA sequence analysis.

**Results** The DNA analysis revealed in the patient a single homozygous unclassified variant, c.106C>T of *LAMC2*. And this is the first report about JEB complicated with nephrotic syndrome in China.

**Conclusion** This study adds to the current JEB mutation database and provides reliable basis for patients and their families for genetic counseling.

PO10-001

**Association between polymorphisms in the promoter region of miR-17-92 cluster and systemic lupus erythematosus in a Chinese population**

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**Objective** The aim of this study was to investigate the association of genetic polymorphisms in the promoter region

of miR-17-92 with systemic lupus erythematosus (SLE).

**Methods** The gene polymorphism was analyzed by using SNaPshot in 312 SLE patients and 396 controls. Relative expression of miR-17-92 was measured by quantitative real-time PCR.

**Results** Relative expression of miR-17-92 was measured by quantitative real-time PCR. Association was found between rs9515692 and a decreased risk of SLE (CT vs. CC:  $OR=0.65$ , 95%  $CI$ , 0.46–0.92,  $P=0.014$ ; CT+TT vs. CC:  $OR=0.64$ , 95%  $CI$ , 0.46–0.90,  $P=0.009$ ; T vs. C:  $OR=0.69$ , 95%  $CI$ , 0.52–0.92,  $P=0.010$ , respectively). Haplotype analysis showed that C-G-G, C-A-A haplotypes were associated with an increased SLE risk ( $OR=4.18$ , 95%  $CI$ , 1.74–10.01,  $P=0.001$ ;  $OR=1.84$ , 95%  $CI$ , 1.03–3.29,  $P=0.039$ ;  $OR=5.85$ , 95%  $CI$ , 2.17–15.76,  $P<0.001$ , respectively). T allele and CT+TT genotypes in rs9515692 were associated with decreased risk of anti-dsDNA in SLE (CT+TT vs. CC:  $OR=0.42$ , 95%  $CI=0.24-0.72$ ,  $P=0.002$ ; T vs. A:  $OR=0.49$ , 95%  $CI=0.31-0.79$ ,  $P=0.003$ ). Moreover, rs9515692 CT+TT genotypes had a higher level of miR-17 as compared to CC genotype ( $P=0.017$ ).

**Conclusion** These findings suggest that the rs9515692 CT+TT genotypes were a protective factor for the susceptibility of SLE, probably by increasing the expression of miR-17.

PO10-003

### Rothmund-thomson syndrome: 4 new cases from three unrelated families in China

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**Objective** In order to expand the mutational spectrum of RECQL4 gene and reveal novel phenotypes observed in Chinese RTS patients.

**Methods** We reported 4 Chinese children from three unrelated families with classical features of RTS and analyzed their RECQL4 gene variants. Proband's and family members' blood samples were obtained to extract the genomic DNA. Massively parallel sequencing targeted to 4000 genes of clinical relevance was performed on the Illumina NextSeq platform.

**Results** All of the probands presented with characteristic features of poikiloderma on the face within their first 2 years of age, two of them are siblings. In addition, growth delay, sparse or absent eyebrows, teeth retardation and toe deformity were indicated in physical examination of two probands. And one of them presented epicanthus. Juvenile cataract described in previously RTS cases is not detected in our probands. Two novel RECQL4 variants were identified in one of the probands, including a point mutation (c.1391-2A>C) producing a splice acceptor variant and a deletion of two nucleotides (p.His831Argfs) producing a frame shift.

**Conclusion** Rothmund-Thomson syndrome (RTS) is a rare autosomal recessive disorder characterized by facial poikiloderma, growth retardation, sparse scalp hair/eyelashes/eyebrows, juvenile cataracts, skeletal abnormalities, radial ray defects and a predisposition to cancer. Around 400 cases have been reported in the literature to date. The mutations in the RecQ-like DNA helicase type 4 (RECQL4) gene can be found in approximately 65%–70% of RTS cases and diagnosis needs to be based on a combination of clinical and gene sequencing.

PO10-006

### A case of Blau syndrome with H313R and R471C mutations in NOD2/CARD15.

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**Objective** To analyze a case of Blau syndrome with a new mutation of NOD2/CARD15.

**Methods** Clinical data of the patient were collected before and after treatment. Exons of NOD2/CARD15 were sequenced by PCR, cytokines in peripheral blood were measured by chemiluminescence, and skin biopsies were taken from the lesions on the patient's hand and foot.

**Results** A 3-year-old boy with polyarticular arthritis and skin rash was diagnosed as a rare Blau syndrome. Genetic testing identified a double NOD2/CARD15 mutation of H313R (c.938A>G) and R471C (c.1411C>T) in the patient

and his father. Cytokines TNF- $\alpha$ , IL-6 and IL-1 $\beta$  in proband's blood were high, skin biopsy showed non-caseating granuloma, and CT revealed the damage of joints, which supported the diagnosis of Blau syndrome. The patient responded well to the treatment of glucocorticoid and methotrexate for two years.

**Conclusion** This is the first report of Blau syndrome with a double mutation in China, in which H313R is predicted to be a new pathogenic mutation.

PO10-009

### **Progressive osseous heteroplasia in a five-month-old boy: a case report**

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Progressive osseous heteroplasia (POH) is an rare hereditary disease which begins with cutaneous ossification and progressive heterotopic ossification involved subcutaneous and deep connective tissues. We reported a case in a five-month-old boy presented with a three and a half months history of maculopapular lesions on his arms, legs and back that were increasing in number and a two months history of hard non-tender bump on his left wrist. Most cases of POH are caused by inactivating mutations of GNAS, and the mutation of GNAS is also found in some other related heterotopic ossification conditions. A discussion of the clinical and laboratory features of these disorders is made in our case report.

PO10-010

### **Severe combined immunodeficiency presented as mixed infection**

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**Purpose** To describe a case of Severe Combined Immunodeficiency presented as mixed infection including Mycobacterium bovis Bacillus Calmette-Guérin infection.

**Methods** A 6-month-old male infant presented with 1-week history of multiple necrotizing papules on his trunk and limbs. Creamy white patches were found on his tongue and buccal mucosa. A biopsy from a papule showed medium sized mononuclear cells located at the superficial dermis. Acid-fast stain was strong positive and revealed intracellular acid-fast bacilli. The smooth granular colonies were grown in tissue-culture, which were identified as Mycobacterium bovis Bacillus Calmette-Guérin (BCG) after PCR and gene sequencing. Oral candidiasis was confirmed. Blood counts revealed lymphopenia. The level of IgA, IgM and IgG were all decreased. A significantly reduction of T-, B-lymphocytes and NK cells were revealed by flow cytometric analysis.

**Results** Severe Combined Immunodeficiency (SCID) with mixed infection was diagnosed.

**Conclusion** SCID is one of primary immunodeficiency disorders. Most children without family history are diagnosed only after the occurrence of severe infections. BCG is a live attenuated vaccine against tuberculosis. The less common but fatal form complication is disseminated infection which is result from impaired immune function such as SCID. If immunodeficiency is suspected, BCG vaccination should be delay and hematopoietic stem cell transplantation is the effective way to avoid worse prognosis.

PO10-012

**Novel compound heterozygous mutations in RAG1 in a patient with cutaneous lymphoproliferative disease: A case report**

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**Purpose** To describe a rare case of Severe Combined Immunodeficiency (SCID) presented with cutaneous lymphoproliferative disease caused by novel compound heterozygous mutations in *RAG1* gene.

**Methods** A 5-year-old boy presented with a 3-year history of asymptomatic infiltrated erythematous plaques on his trunk and limbs. He was otherwise healthy except for frequent upper respiratory tract infections. Physical examination revealed multiple, asymptomatic, dull-colored, irregular-shaped infiltrated erythematous plaques with dry surface located on the trunk and limbs, and erythemas or plaques to ulcers with scab on his extremities. Blood counts revealed lymphopenia. The level of IgA was decreased. A significant reduction of T-, B-lymphocytes were revealed by flow cytometric analysis. Novel compound heterozygous mutations were found in *RAG1*.

**Results** SCID with cutaneous lymphoproliferative disease was diagnosed. He was treated with a combination of prednisone and methotrexate and is preparing for hematopoietic stem cell transplantation.

**Conclusion** To our knowledge this is the first SCID case with cutaneous lymphoproliferative diseases, which was caused by novel compound heterozygous mutations in *RAG1* gene.

PO10-013

**Fine mapping and subphenotyping implicates ADRA1B gene variants in psoriasis susceptibility in a Chinese population**

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**Background** A genomic region on 5q33.3 lies between and encompasses the *IL12B* and *PTTG1* genes and contains many potential psoriasis causal variants.

**Objectives:** To further examine the influence of variants in and around this region.

**Methods** We first used the 1000 Genomes Project reference haplotypes to impute an additional 2,171 variants in the region, and then used lasso-based regression analysis to assess the independent contributions of these variants to psoriasis susceptibility, and tested lasso-selected SNPs for association with different clinical psoriasis subtypes.

**Results** We first found evidence for association for 62 out of the 2,171 SNPs in this region. The most significant locus and largest number of associated SNPs were all located in *ADRA1B* gene, which is between the *IL-12B* and *PTTG1* genes in the 5q33.3 region. Variants in the *ADRA1B* gene were the most strongly associated with the plaque psoriasis subgroup, and showed a stronger association with moderate-to-severe skin disease group and an earlier age at onset of psoriasis. Polygenic inheritance analysis showed that variants in the *ADRA1B* gene explain 46.5% of the heritable component of the liability to psoriasis.

**Conclusions** The association of variants in the *ADRA1B* gene with psoriasis could explain why variants in the broader *IL-12B*, *ADRA1B* and *PTTG1* gene region have been found to be associated with psoriasis previously, although more studies confirming this should be pursued.

PO10-014

**A case of primary erythromelalgia**

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Primary erythromelalgia is a rare autosomal dominant neurological disorder characterized by severe burning pain, warmth and redness in the extremities. The incidence rate of PE ranges from 0.36 to 1.1 per 100,000 persons. Clinical onset of PE is often in the first decade of life. Burning pain is the most predominant symptom and is usually caused and precipitated by warmth and physical activities. Reported cases of PE contain both inherited and sporadic forms. Genetic etiology of PE is mutations in human SCN9A gene. Treatment for PE is unsatisfactory and highly individualized. Here, we are presenting a case with diagnosis of sporadic PE, which is a rare occurrence. A 18-year-old man presented with 3-years history of PE with burning pain, redness and ulcerations in the extremities. At hot weather, the feet developed severe burning pain with reddish skin discoloration. Walking and warmth trigger the symptoms, which made difficulties for him to wear shoes and socks. To relieve foot pain, he preferred to have his feet immersed in water to gain pain relief. The skin lesions clinically, histologically and genetically consistent with PE, which is related to SCN9A gene of peripheral blood. Treatment with intravenous penicillin, oral aspirin and vitamins(vitamin B, vitamin C and vitamin E), topical dressing for one month led to remarkable improvement. Now, the patient is still in the follow-up.

PO10-015

**Generalized linear porokeratosis coexisted with multiple SCCs**

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Porokeratosis (PK) is defined with hyperpigmented macules or patches with a distinctive, ridge-like hyperkeratotic border which histologically characterized by a cornoid lamella. Linear PK is a rare form of porokeratosis that usually presents unilaterally with grouped characteristic lesions following the lines of Blaschko. The malignant transformation of the porokeratotic lesion can occur in 7.5% of cases, mostly associated with linear lesions.

We presented an generalized linear porokeratosis coexisted disseminated superficial actinic porokeratosis (DSAP) and Giant Hyperkeratotic Porokeratosis(GHP)with secondary multiple SCCs.

A 51-year-old male presented with generalized keratotic hyperpigmented papules in the abdomen, groin and genital following Blaschko's lines since born. In his 20s, lesions gradually spread from the original location to his left chest, limbs, thigh and waist. Extensive hyperkeratotic plaques occurred on the genital and left ankle. Three years ago, the hyperplastic plaques on genital demonstrated ulceration. The dermatological examination showed generalized brownish macules and papules with elevated and well-defined borders. An incisional skin biopsy from a typical plaque demonstrated features consistent with porokeratosis, the so-called 'cornoid lamella'. The lesion from ulcerative genital was histologically confirmed SCC in situ (Bowen's disease). Three months ago, the lesions on the lower left abdominal began to itch and appear erosion. Again, biopsy from one of these plaques demonstrated Bowen disease. According to the typical clinical manifestations and histopathology findings, the diagnosis of patients was systematized linear porokeratosis associated with malignant squamous transformation, which coexist with other forms of porokeratosis (DSAP, GHP). After family screening, the patient's father and daughter have similar lesions of DSAP.

PO10-016

**Gene mutation analysis of one Chinese patient with keratosis follicularis spinulosa decalvans**

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**Aim** To identify potential novel gene mutations of the *MBTPS2* gene in one Chinese patient with keratosis follicularis spinulosa decalvans (KFSD).

**Methods** We enrolled one Chinese patient with KFSD and 100 randomly selected healthy individuals. The genome of each participant was extracted from peripheral blood samples. Sanger sequencing of the *MPTPS2* gene was performed after polymerase chain reaction amplifications. Comparisons between the DNA sequences of the affected individuals and the NCBI database were performed.

**Results** No mutation of the *MBTPS2* gene was detected in either the patient or the healthy volunteers.

**Conclusion** KFSD is a rare hereditary disease and up to now KFSD with X-linked and autosomal dominant pattern have been reported. The *MBTPS2* gene is found to be responsible for the X-linked cases while the causative genes for KFSD with other hereditary patterns remain unclear yet. This patient reveals no mutation in *MBTPS2* hence we consider he suffers from KFSD with other hereditary patterns except for X-linked type.

PO10-019

**Missense mutation of the *ABCC11* gene is associated with axillary osmidrosis susceptibility and clinical phenotypes in the Chinese Han population**

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**Background** Axillary osmidrosis (AO) is a common condition characterized by an offensive odor arising from apocrine gland secretions in the axillae that socially and psychologically impairs affected individuals. The exact aetiology of AO remains obscure, but genetic factors have been suggested to play an important role. However, few susceptibility genes have been identified for AO.

**Methods** In this study, we genotyped rs17822931 in two independent samples of Chinese Hans including 93 AO patients vs. 95 controls and 81 AO patients vs. 106 controls by using SNaPshot Multiplex Kit.

**Results** We confirmed the association for *ABCC11* gene, showing that rs17822931-G was significantly associated with increased risk for AO ( $P_{\text{combined}}=1.42 \times 10^{-21}$ ,  $OR=83.94$ ,  $95\% CI= 83.03-84.85$ ). We also found rs17822931 was associated with subphenotypes of AO. Patients carrying the risk allele G are more likely to show wet earwax ( $P=2.40 \times 10^{-5}$ ), higher frequency of family history ( $P=1.04 \times 10^{-2}$ ) and early disease onset ( $P=3.81 \times 10^{-2}$ ).

**Conclusion** Our study has not only confirmed the previously reported association in *ABCC11* gene with robust evidence, but also revealed the association of rs17822931 with the clinical phenotypes of AO in Chinese population.

PO10-020

**Trichoepithelioma in monozygotic twins: A case report**

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Monozygotic twin boys, 10 years old, had multiple facial papules for 3 years. Three years ago, twins appeared white papules in the center of the face without apparent inducements. These rashes gradually increased in number and enlarged in size with age. They complained no symptoms and received no special treatment. Their general health was good, and there were no similar diseases in the family. On physical examination, both children had scattered, white, hard papules of military size in the middle part of the face. These lesions with well-demarcated margin and smooth

surface symmetrically distributed around the nose and partially merged with each other. In general, no obvious systemic abnormalities were found. Histologic examination showed facial adnexal tumors, considering trichoepithelioma. For treatment, topical vitamin A cream was applied. Patients are currently being followed up. Trichoepithelioma is a neoplasm of the adnexa of the skin, which may be divided into three following types, multiple familial trichoepithelioma, solitary trichoepithelioma and desmoplastic trichoepithelioma. The first type has been mapped to chromosome 9p21. In pathology, trichoepithelioma located in the dermis consists of nests of basaloid cells, hair papilla-like structures, and horn cysts. When compared to basal cell carcinoma, mitoses are uncommon in trichoepithelioma. In terms of therapy, the single lesion can be surgically excised or be treated with electrocautery, freezing and laser methods when papule is of minor size. Multiple skin lesions are lack of treatments, when skin grinding, CO2 laser, fractional laser and so on may be effective.

PO10-021

### **Lamellar ichthyosis: A case report**

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Lamellar ichthyosis (LI) is a severe autosomal recessive skin disorder characterized by large brownish plate-like scales in a generalized distribution. Transglutaminase 1 gene (*TGMI*) is not only the first gene found but also leading to severe phenotype. We report a patient who presented as large, grey or brownish thick scales on the whole body, palmoplantar keratoderma, ectropion, eclabium, alopecia, hypohidrosis and small joint deformities of hands with a novel missense mutation H129P which is in the N-terminal beta-sandwich domain of transglutaminase 1 (TGase 1).

PO10-022

### **A novel frameshift *SERPINB7* mutation in a Chinese case with Nagashima-type palmoplantar keratosis: case report and review of the literature**

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Nagashima-type palmoplantar keratosis (NPPK) is characterized by the appearance of diffuse mild palmoplantar hyperkeratosis with transgrediens on the dorsum of hands and feet. Loss of function mutation in *SERPINB7* gene was found to be responsible for NPPK. Here, we report an NPPK case with a novel frame-shift mutation in the responsible gene *SERPINB7* and give a review of confirmed NPPK cases with *SERPINB7* mutations.

PO10-024

### **A diagnostic algorithm of genetic reticulate pigmentary disorders**

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Reticulate pigmentary disorders are a group of disorders characterized by hyperpigmented and/or hypopigmented macules with varying sizes and amounts of pigment. Some of the disorders are heritable, such as Dowling-Degos disease, dyschromatosis universalis hereditaria, dyschromatosis symmetrica hereditaria and reticulate acropigmentation of Kitamura. Although, each condition possesses unique phenotypic characteristics and the prognosis for each is somewhat different, these disorders are highly overlapped and difficult to differentiate in the clinical setting. This updated review provides a clinical and molecular delineation of these genetic reticulate

pigmentary disorders and aims to establish a concise diagnostic strategy to allow clinical dermatologists to make an accurate diagnosis, as well as provide useful information for clinical and genetic counselling.

PO10-025

### Effects of DOCK8 deficiency on IL-10 producing regulatory B cells

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*Children's Hospital of Chongqing Medical University*

**Background** Dedicator of cytokinesis 8 (DOCK8) deficiency is characterized by recurrent infections, increased serum IgE levels, eosinophilia, and a significantly high risk of allergic and autoimmune manifestations. DOCK8 is a regulating factor of actin cytoskeleton proteins involved in the development and differentiation of B cells. Regulatory B cells (Breg) are potent negative regulators of antigen-specific inflammation and T-cell-dependent autoimmune diseases mainly through producing inhibitory cytokine interleukin-10 (IL-10). The precise signaling mechanisms required for Breg functions remain unknown. We sought to elucidate the effects of DOCK8 deficiency on Breg function in patients and DOCK8KO mice.

**Methods** We measured the percentage and numbers of IL-10<sup>+</sup>Breg in DOCK8 deficient patients or healthy controls and DOCK8KO and WT mice after sensitization of OVA by flow cytometry. We used DOCK8KO-WT bone marrow chimera mice to detect the defects of Breg was DOCK8 deficient intrinsic, and adoptive transfer of *DOCK8*<sup>-/-</sup>CD4<sup>+</sup> naïve T cells to CD4KO mice to detect the defects of Breg was caused by *DOCK8*<sup>-/-</sup>CD4<sup>+</sup>T cells. We also detected the restoration of Breg after administration of recombinant IL-21 in DOCK8KO mice.

**Results** DOCK8 deficient patients (*n*=3) have decreased percentage of IL10<sup>+</sup>CD19<sup>+</sup>regulatory B cells compared with healthy controls. In DOCK8KO mice, the percentage and number of IL-10<sup>+</sup>CD19<sup>+</sup>regulatory B cells were reduced compared with WT mice after induced by OVA. In DOCK8KO-WT bone marrow chimera mice, it showed the decreased number of Breg, but for DOCK8KO-μMT (B cell deficient mice) bone marrow chimera mice showed the normal number of Breg. Adoptive transfer of *DOCK8*<sup>-/-</sup>CD4<sup>+</sup> naïve T cells to CD4KO mice exhibited decreased Breg percentage. Finally, In vitro and in vivo administration of recombinant IL-21 could restores the percentage of Breg, it might be caused by LPS-driven, but not IL-21-driven, STAT3 phosphorylation was defective in DOCK8KO mice.

**Conclusions** DOCK8 deficiency causes Breg intrinsic defect, as a result of abnormalities of IL-21-producing CD4<sup>+</sup> T cells in DOCK8 deficiency.

PO10-026

### First male infant with incontinentia pigmenti and a deficiency in the NEMO pathway in China

Jing Zhang, Min Lin, Meng-Ting Lin, Jin-Wen Huang, Chao Ji, Bo Cheng

*The First Affiliated Hospital of Fujian Medical University*

Incontinentia pigmenti is an X-linked dominant genetic disorder caused by mutations in the NEMO, its full name is "nuclear factor κB (NF-κB) essential modulator", except the skin involvement occurs in all patients, additionally, other ectodermal tissues may be affected such as the central nervous system, eyes, hair, nails and teeth. It usually affects females, as the male fetus does not survive. We present a case of a 3-month-old boy who was evaluated for an eruption that intermittently affected his trunk, legs, and arms, acrotarsium but his scalp and face are not affected. A biopsy specimen taken from the acrotarsium showed the presence of compact dyskeratotic cells scattered throughout the spinous and granular layer. Genetic testing had revealed that the patient had an absence in nuclear factor κB (NF-κB) essential modulator (NEMO). The diagnosis of incontinentia pigmenti was made. He was found as the first male infant with incontinentia pigmenti in China.

PO10-027

**A case report of scrotum steatocystoma multiplex**

Yan Li

*Inner Mongolia Medical University Affiliated Hospital***Purpose** A case report of steatocystoma multiplex in scrotum in order to increase awareness of the disease .**Method** To analyses the patients clinical situations**Results** There are 20 masses in a young man's scrotum. The masses are round, smooth, the diameter of which is from 1cm to 4cm. There is no contraindication. We excision and peel off about 12 once time. The pathology results of mass is "steatocystoma multiplex".**Conclusion** It occurs in teenage boys and young people and is an autosomal dominant inherited disease. The favorite location of steatocystoma multiplex is chest, sometimes scrotum involvement . We can diagnose the disease by clinic and pathology. Surgeon is the better way to cure it.

PO10-029

**Novel compound heterozygous mutations in GJB3 gene in a family with erythrokeratoderma variabilis et progressiva**

Yong-Qiong Deng, Xia Xiong

*Affiliated Hospital of South West Medical University***Background** Erythrokeratoderma variabilis et progressiva (EKPV) was is a group of a rare genodermatosis which mainly inherited in an autosomal dominant trait. Mutations associated with EKPV have been mapped in GJB3, GJB4 and GJA1 genes.**Objective** To identify the genotype and characterize the phenotype in a Chinese EKPV family.**Method** Family members were examined by physical examination and only patients underwent skin biopsy. The pedigree chart was described. Patients and unaffected members in the family were tested through exon sequencing. The genes of GJB3, GJB4, GJA1 and LOR were screened. The candidate mutations were validated in 100 normal Chinese individual.**Results** Our family pedigree corresponded to autosomal recessive mode of inheritance. There were three patients showing both stationary hyperkeratosis and migratory patchy, which was typical of EKPV. The study also identified novel compound heterozygous mutations in GJB3 gene of the patients as follows: two nonsense mutations in exon 2, c. 34 G>A (p.G12S) and c. 474 G>A (p.M158I). There were 2 unaffected family members harbored individually heterozygous mutations of c.34 G>A, which has been detected to cause the EKVP phenotype in previous study. The mutation of c. 474 G>A in our family is the first pathogenic mutation reported in the E2 domain of Cx31.**Conclusions** The novel compound heterozygous mutations in E2 domain of Cx31 caused EKVP in this Chinese family. The trait of inheritance and mutations were associated with races and regions.

PO10-031

**A case of collodion baby report**

Shi Gong, Qiao Liu, Qing-Shan Li

*Hainan Provincial Hospital of Skin Disease*

Collodion baby is always in danger because of hyperpyrexia, hypernatremic dehydration and the worsening dehydration, skin infection, septicopyemia, secondary pneumonia caused by the chapped skin. This example of patient is an example of collodion baby. At the premise of preventing complication, we use lots of humectant to the baby patient to make the baby patient survive.

PO10-033

**A case report of pachydermoperiostosis**

Jin Qing, Mei-Ping Huang

*First People's Hospital of Kunming*

Pachydermoperiostosis is also called Touraine Solente Gole, which the primary type of it is a rare euchromosome visible hereditary disease. It usually appears in infancy with puberty. A 16-year-old boy has the thickening skin of head and face, with acromegalia is reported. The histopathological examination of the skin specimens showed that hair follicle and sebaceous lobules are hyperplasia and enlargement in dermis. Now, the patient had the treatment of coronal incision rhytidectomy surgery.

PO10-034

**Eruptive pruritic papular porokeratosis: A case report and literature review**

Wanlu Zhang, Cheng-Rang Li

*Chinese Academy of Medical Sciences and Peking Union Medical College*

"Eruptive pruritic papular porokeratosis (EPPP)" or "Inflammatory disseminated superficial porokeratosis (Inflammatory DSP)" is a special variant of porokeratosis. In 1992, Kanzaki et al. reported that three patients with DSP developed acute exacerbation of their lesions, accompanied by severe pruritus. As described, the typical clinical course for patients consists of several years of asymptomatic DSP followed by the acute pruritic exacerbations, which then subside within several months spontaneously or by therapy. Histopathological examination reveals the characteristic cornoid lamellae. Here we report a case of EPPP in a 68-year-old Chinese man who has the similar clinical course without the typical porokeratosis-like lesions, but with typical parakeratosis column and make a review of 17 cases of the English-published literature including one reported. Demonstrated these patients, we found that EPPP might have some characteristics.

PO10-035

**A Chinese Hermansky–Pudlak Syndrome patient with two novel mutations on HPS4 gene**Teng Liu<sup>1</sup>, Ye-Feng Yuan<sup>2</sup>, Xiu-Min Yang<sup>1</sup>, Ai-Hua Wei<sup>1</sup>

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Hermansky–Pudlak syndrome (HPS; OMIM 203300) is a rare autosomal recessive and a genetically heterogeneous disorder characterized by oculocutaneous albinism, bleeding tendency and lysosomal accumulation of ceroid lipofuscin which may cause lung fibrosis, colitis, and cardiomyopathy. Patients with HPS often die in their middle ages.

The absence of platelet dense granules in whole-mount platelets under electronic microscope is the golden standard for the clinical diagnosis of HPS. Ten types of HPS (HPS-1 to HPS-10) have been identified in humans, and each type has specific manifestations. Eighteen mutations listed in the HGMD of *HPS4* belong to the patients coming from India, Japan, Spain, Pakistan and Sri Lanka, et al. We here report the first Chinese patient of HPS4 with two novel mutations, c.148C>T (p.Q50X) and c.1713+5G>C. The patient has typical oculocutaneous albinism with golden-yellow hair, white skin, pink iris, and remarkable for congenital nystagmus and photophobia. The color fundus photography showed hypopigmentation and underdeveloped foveas. We verified that the patient inherited a paternal mutation, c.148C>T(p.Q50X) and a maternal mutation, c.1713+5G>C of the *HPS4* gene by Sanger and NextGeneration Sequencing. Western blotting assays showed the destabilized HPS1 in our HPS4 patient. The whole-mount platelets under electronic microscope showed the absence of platelet dense granules. Our findings have

expanded the mutational spectrum of *HPS* genes in Chinese population, and it is important to provide identified diagnosis of HPS subtype for the patients' prognosis and interventions.

PO10-036

### Application of MLPA in the genetic testing of oculocutaneous

Ying-Zi Zhang, Da-Yong Bai, Zhan Qi, Su-Zhou Zhao, Xiu-Min Yang, Wei Li, Ai-Hua Wei

*Beijing Tongren Hospital, Capital Medical University*

**Background** Oculocutaneous albinism (OCA) is a rare genetic disorder associated with a variable hypopigmentation phenotype. OCA type 1 (OCA1) and OCA type 2 (OCA2) are the two most frequent types of OCA worldwide. The aim of this study was to investigate the application of multiplex ligation-dependent probe amplification (MLPA) in the genetic testing of oculocutaneous albinism (OCA).

**Methods** Twelve OCA patients who had only one pathologic point mutation in the *TYR* or *OCA2* gene detected by Sanger or Next Generation Sequencing. Genomic DNA was extracted from the blood samples. MLPA was employed to detect the *TYR* and *OCA2* genes in these OCA patients to screen the copy number variations (CNVs).

**Results** Eight gross deletions were detected (3 were found in the *TYR* and 5 were found in the *OCA2*), and the detection rate of mutations was 66.67% (8/12). All the mutations were graded as pathogenic variations. Among these, five of them were not previously reported and two of them were *de novo* mutations. These eight patients were diagnosed as OCA1 and OCA2, respectively.

**Conclusion** MLPA offers a useful diagnostic tool for the gene diagnosis and genetic counseling of OCA.

PO10-038

### Case series of neck accessory tragus

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We reported three cases of neck accessory tragus, which is the largest number of cases with dermatologists reported in China. Neck accessory tragus belongs to special accessory auricular anomaly. Case 1: A 5 year-old girl presented with a skin colored mass above her right clavicle since birth. Physical examination revealed a pea sized mass positioned above the right clavicle. Case 2 and case 3 were a 3 month-old female infant and a 4 month-old male infant respectively. Both of their parents complained that the mass gradually increased in front of neck. Histopathologically, all of the three cases showed cartilage beneath the subcutaneous tissue. All cases were diagnosed as cervical auricles.

PO10-039

### A rare splicing mutation of MVK gene in one family with facial porokeratosis

Hui Chen, Rui-Feng Sun, Wei Zhu, Shi Lian

*Xuanwu Hospital, Capital Medical University*

The paper stated a rare splicing mutation of MVK gene in one family with facial porokeratosis. This is the first time to report a novel MVK gene splicing mutation in facial porokeratosis patients. Fortunately, we find that the new MVK gene mutation has expanded the genetic databases of porokeratosis.

PO10-041

**Genetic diagnosis of one patient misdiagnosed with epilepsy: A case report**

Lin-Li Liu, Chun-Shui Yu

*Suining Central Hospital*

Tuberous sclerosis complex is an autosomal dominant disorder caused by mutations of *TSC1* and *TSC2* genes. If pathogenic mutation was detected in *TSC1* or *TSC2* gene, the patient can be diagnosed with TSC inspite of inadequate clinical manifestations. Here we collected a patient who has shagreen patches and accompanied with epilepsy merely. She was diagnosed as epilepsy for a long term, and the adequate treatment was given but turned out to be useless. Mutation analyses were performed and a pathogenic mutation was found ultimately. The patient can be diagnosed with TSC.

PO10-042

**Novel mutations in Chinese Han patients with tuberous sclerosis complex: case series and review of the literature**Li-Yun Zheng<sup>1,2</sup>, Min Gao<sup>1,2</sup>*1. Institute of Dermatology and Department of Dermatology of First Affiliated Hospital, Anhui Medical University**2. State key Laboratory Incubation Base of Dermatology, Anhui Medical University, Hefei, Anhui, China*

**Aim** Tuberous sclerosis complex (TSC) is a rare autosomal dominant genetic disease characterized by hamartomas in multiple organ systems. The study was designed to identify pathogenic *TSC1* or *TSC2* gene mutations in one familial and two sporadic cases. The correlations between genotype and phenotype were investigated in Chinese Han TSC patients.

**Methods** Mutation analyses of *TSC* genes were performed in one familial and two sporadic cases. By reviewed literatures, the correlations between genotype and phenotype were performed in Chinese Han TSC patients by paired chi-square tests.

**Results** 1. Two novel mutations were identified in *TSC1* exon 15 (c.1884\_1887delAAAG) and *TSC2* exon 42 (c.5266A>G). And two previously reported mutations were identified in *TSC1* exon 15 (c.1960G>C) and *TSC2* exon 34 (c.4258\_4261delTCAG). According to the result of cloning and sequencing, both mutations (c.1884\_1887delAAAG and c.1960G>C) were derived from the same allele in familial case. 2. The literature review showed that *TSC2* gene mutations were more frequent than *TSC1* gene mutations. Patients with *TSC2* mutations had a higher frequency of mental retardation ( $\chi^2=8.139$ ,  $P=0.004$ ) and familial inheritance ( $\chi^2=17.489$ ,  $P<0.05$ ) than *TSC1* gene mutations. There was no significant difference in the frequent of skin lesions and seizures.

**Conclusions** The identification confirmed the diagnosis of the 3 patients with TSC. And it was showed that *TSC2* gene mutations are more frequent than *TSC1* gene mutations with more serious clinical manifestations. The results confirmed the diagnosis of TSC and could guide individualized treatment and prognostic assessment of patients.

PO10-043

**CHILD syndrome with alopecia: the NSDHL gene and its role in hair follicle development**

Dan Wang, Sheng Wang

*Department of Dermatovenereology, West China Hospital, Sichuan University*

**Background** Congenital hemidysplasia with ichthyosiform nevus and limb defects (CHILD) syndrome is an X-linked autosomal dominant disorder characterized by unilateral congenital hemidysplasia with ichthyosiform erythroderma and ipsilateral limb defects caused by a mutation in the gene encoding NAD[P]H steroid dehydrogenase-like protein (NSDHL) at Xq28. Alopecia involves predominantly the affected side was infrequent skin

manifestation of CHILD syndrome. A few researches have revealed a possible correlation between alopecia and cholesterol biosynthesis deficiency.

**Methods** A 9-year-old Chinese girl presented with skin and limb defects involving the right side of her body. Furthermore, alopecia of the prefrontal and parietal area was also noted which mainly involves the right side of scalp. Clinical and laboratory evaluation was performed, including DNA sequence analysis of the NSDHL gene.

**Results** The diagnosis was confirmed by DNA screening analysis, that detected a missense mutation (c.727G>A; p.V243M) of exon 8 of the NSDHL gene.

**Conclusions** In this case report, we identified a heterozygous missense mutation of the NSDHL gene in a Chinese patient with CHILD syndrome. And more importantly, our study supported that NSDHL not only play an important role in maintaining skin barrier function, but also in hair growth.

PO10-044

### **A novel heterozygous missense mutation of the DSG1 gene in a Chinese family with diffuse non-epidermolytic palmoplantar keratoderma**

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**Background** Palmoplantar keratoderma (PPK) is a heterogeneous group of skin disorders. According to the clinical appearance, it can be classified into four types: diffuse, focal, punctuate, and striate. Diffuse PPK can be further subdivided into epidermolytic and nonepidermolytic forms depending on pathological changes. Diffuse non-epidermolytic palmoplantar keratoderma (DNEPPK: OMIM 148700) is comparatively rare and exhibits incredible genetic heterogeneity. Mutations in keratin 1, loricrin, aquaporin 5, and desmoglein 1 have been identified as the underlying cause. To date, only two cases with diffuse PPK with DSG1 mutations have been described.

**Methods** A 59-year-old female presented with slowly progressive thickening and fissuring of palms and soles since the age of 2 years. Her only son had similar lesions on palms and soles. Clinical and laboratory evaluation was performed, including DNA sequence analysis of the KRT1, LOR, AQP5, and DSG1 genes.

**Results** Both the proband and her son were found to carry a heterozygous missense mutation c.547G>A in the DSG1 gene.

**Conclusions** we identified a novel heterozygous missense mutation of the DSG1 gene in the Chinese family with DNEPPK. Our study expands the database on DSG1 mutations and emphasizes the key role played by Dsg1 in the structure and function of the epidermal desmosomes. Furthermore, we suggest a low threshold for DSG1 screening in DNEPPK.

PO10-045

### **Mutation analysis in a family with woolly hair**

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*2. Civil Aviation General Hospital*

**Objective** To study the pathogenic mutation in genes in a Chinese patient with woolly hair phenotype.

**Methods** Peripheral blood samples were obtained from the patient, two unaffected individuals in the family and 100 healthy human controls of Han nationality. Genomic DNA was extracted and subjected to PCR for the amplification of the entire encoding and flanking sequences of *LAPR6*, *LIPH*, *KRT25*, *KRT71*, *KRT74* gene, followed by DNA sequencing.

**Results** No mutation was detected in *LAPR6*, *KRT25*, *KRT71* and *KRT74* gene, while three heterozygous missense mutations, c.973C>T (p.P325S), c.614A>G (p.H205R), c.454G>A (p.G152R) were identified in the *LIPH* gene of the patient. The same nucleotide mutations were not found in the other two family members and 100 healthy controls.

**Conclusion** We report two heterozygous mutations c.614A>G (p.H205R) and c.454G>A (p.G152R), a new SNP,

c.973C>T (p.P325S), in the *LIPH* gene in a Chinese patient with woolly hair, may be responsible for the clinical phenotype of autosomal recessive woolly hair in this family.

## *PO11 Metabolic and Endocrine Disorders*

PO11-001

### **Investigation and analysis of humoral autoimmunity in the risk factors of pretibial myxedema**

Chang-Gui Lan

*China National Nuclear Corporation 416 Hospital*

**Objective** Its etiology and pathogenesis have been unclear. In order to demonstrate the risk factors of PTM and further confirm humoral autoimmunity exists in PTM, we performed a case-control study.

**Methods** 35 patients were collected from dermatology department and equal numbers of sex and age-matched internal controls and external controls at CNNC 416 hospital between January 2016 and July 2017. Internal controls were patients with Graves disease and without PTM. External controls are healthy persons. The data of demographic, clinical features, thyroid function and thyroid autoantibody were collected. Further, serum autoantigen TSHR, autoantibody subclasses (TSAb and TSBAb) and soluble MHC II molecules (sHLA-DP, sHLA-DQ, sHLA-DR) were measured with ELISA method. All data were statistically analyzed with SPSS 17.00 software.

**Results** The numbers of farmer occupation and trauma, and the serum concentration of TRAb were higher than those in the control groups. There were no statistically differences with thyroid function, TPOAb and TgAb among the 3 groups.

Serum levels of autoantigen TSHR, autoantibodies TSAb and TSBAb, and MHC II molecules (sHLA-DQ, sHLA-DR and sHLA-DP) in patients with PTM were higher than the internal and external control groups. The expression of autoantigen TSHR and MHC II molecules was positively associated with autoantibodies TSAb and TSBAb. Serum TSBAb had better predictive value than TSAb for diagnosis of PTM.

**Conclusion** Farmer occupation, trauma and TRAb are risk factors for PTM. PTM is a result of hyperactive humoral autoimmunity in Graves' disease. Serum TSBAb was better predictive value than TSAb for the development of PTM.

PO11-002

### **Pretibial myxedema presenting as elephantiasis**

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Elephantiasis is a symptom characterized by the thickening of the skin and underlying tissues. Pretibial myxedema (PTM) is a non-frequent manifestation of autoimmune thyroiditis, particularly Graves' disease. Lesions of myxedema occur most commonly on the pretibial surfaces, also develop at sites of previous injury or scars and other areas. A 48-year-old male presented with progressive bilateral lower limb swelling with thickening and induration of the skin over a span of 20 years. The physical examination revealed severe elephantiasis that was multiple verrucous nodules and cerebriform hypertrophic plaques on the both pretibial areas, dorsum of the feet, ankles and toes. Twenty years previously, he had received radioactive iodine treatment for thyrotoxicosis. He recalled that there was no trauma history.

Laboratory tests showed that the patient's thyroid function was normal, but the level of antithyroid-stimulating hormone receptor antibodies was very high (>40IU/L). PCR test for filariasis was negative. Histopathologic findings revealed collagen bundles were widely separated and fragmented with extensive deposition of mucin in the entire dermis. Alcian blue stain confirmed abundant deposition of mucin in the dermis. He was diagnosed with PTM. He referred to orthopedic for having a debulking surgery to remove massive proliferations of fibrous connective tissue and then intended to have topical and intralesional corticosteroid therapy.

Elephantiasic PTM is a severe form of the myxedema and few reported case. Although trauma is associated with development of myxedema, debulking surgery is recommended for treatment of severe elephantiasic PTM.

PO11-003

**Skin vegetations: a rare sign of primary systemic amyloidosis**

Meng-Hua Li, Li-Ming Wu, Zhang-Yu Bu

*Hangzhou First People's Hospital*

Mucocutaneous lesion appears in up to one-third of patients with primary systemic amyloidosis, the common manifestations are petechia, purpura, and ecchymosis. We reported a case of primary systemic amyloidosis that was presented as skin vegetation arranging in clusters or lines on buttock, abdomen and arms, besides typical mucocutaneous lesions. Histopathology of the tongue and abdomen showed evidence of Congo red positive abundant amyloid material. Skin biopsy of the vegetation showed some dilated lumen were in dermis, immunohistochemistry displayed that the D2-40 of these dilated lumen wall was positive. Primary systemic amyloidosis was diagnosed after thorough survey. To our knowledge, this is the first case of primary systemic amyloidosis presented as skin vegetations. We hope clinicians can link this skin lesion to primary systemic amyloidosis consciously, and then patients can be diagnosed and treated as early as possible.

PO11-004

**Primary system amyloidosis: a case report and review of the literature**Jia-Jia Xie<sup>1</sup>, Xiang Xie<sup>2</sup>, Kang Zeng<sup>1</sup>, Kai Cui<sup>2</sup>*1. Department of Dermatology and Venereology, Nanfang hospital, Southern Medical University, Guangzhou**2. Department of Cardiology, Nanfang hospital, Southern Medical University, Guangzhou*

**Objective** System amyloidosis is a rare disease characterized by organ deposition of misfolded protein fragments. Here we present a related case to help everyone make deeper understand.

**Material** We report the case of a 60-year-old man with heart failure and intractable pleural effusion. Cardiac magnetic resonance showed characteristically diffuse delayed post-gadolinium enhancement images of subendocardial layer. Besides, the NT-Pro-BNP was highly as 16173.00 pg/ml with amyloid SAA 109.8 mg/L. Immunofixation electrophoresis of serum showed that kappa light chains were 2.39 g/L, lambda 4.16 g/L and kappa / lambda was 0.57. Lip and tongue biopsy suggested interstitial amyloid deposition. The deposition was positive to Congo red staining as well. Immunohistochemistry further proved that kappa and lambda light chains were positive in the tissues.

**Results** In combination with medical history and laboratory tests, we considered primary systemic amyloidosis of this patient.

**Conclusions** Systemic amyloidosis with heart failure is a rare disorder with poor prognosis. Its diagnosis makes challenge due to the involvement of multiple organs. Thus, continued basic and clinical research efforts are needed to further improve the diagnosis and outcomes for these patients.

PO11-005

**Porphyria cutanea tarda**

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*Second people's Hospital of Chengdu*

A 61-year-old male presented with erythema and papules on head, neck and upper limbs for 7 years, and a two weeks of aggravation of blisters. Physical examination, immunofluorescence examination and 24 hour urinary total porphyr all proved the diagnosis. Symptoms were alleviated after intra-venous compound glycyrrhizin injection and oral hydroxychloroquine.

PO11-006

**Papular xanthomas with a destructive osteoarthropathy: A rare association**Pei-Mei Zhou<sup>1</sup>, Lin Wang<sup>2</sup>, Fan Li<sup>2</sup>, Si-Yu Chen<sup>2</sup>

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2. West China Hospital, Sichuan University

We reported the case of a 7-year-old girl who presented with xanthomatous lesions in periungual regions of both hands and the back of her tongue, associated with bilateral knee and shoulder joint swelling and pain for 6 months, which was clinically compatible with multicentric reticulohistiocytosis. However, histopathology of the xanthomatous lesions in the hands and tongue were more suggestive of papular xanthoma. She was treated with low-dose methotrexate. However, there was no improvement in skin lesions and arthritis symptom.

PO11-007

**Generalized erythematous papules, plaques and thereafter hardening of the skin**

Lu Gan, Hao Chen, Yi-Qun Jiang, Jian-Fang Sun

*Institute of Dermatology, Chinese Academy of Medical Sciences and Peking Union Medical College***Objective** To improve understanding of the clinical and histopathological features of Scleromyxedema.**Methods** We analyzed the clinical and histopathological features of our case who was a 46-year-old female presented with generalized erythematous papules, plaques and hardening of the skin for 2 years.**Results** Skin examination revealed numerous papules on the neck, trunk and limbs, partly in a linear arrangement, merging to patches and plaques and leading to induration and thickening of the skin on the face and hands. A skin biopsy of a back sample revealed mucin deposition in the dermis between thick and dissociated collagen fiber bundles. It also revealed perivascular and interstitial infiltrates. Alcian blue staining was positive. Thyroid hormones were normal and protein electrophoresis with blood and urine immunofixation was negative for a monoclonal component. A remedy of intramuscular injection of compound betamethasone, together with oral prednisone and MTX achieved partial response.**Conclusion** Scleromyxedema is a rare disease characterized by a generalized papular and sclerodermoid eruption, the histological triad of mucin deposition, fibroblast proliferation and fibrosis, monoclonal gammopathy, and absence of a thyroid disorder. Usually, treatment is unsatisfactory and systemic therapy may include melphalan, steroids, plasmapheresis, acitretin, immunoglobulin, thalidomide, methotrexate, cyclophosphamide, ciclosporin, and phototherapy. What's more, it is necessary to keep a long-term follow-up and always keep an eye on extracutaneous involvement and complications.

PO11-008

**Scleromyxodema: A case report**

Wen-Yuan Ding, Xin-Xiang Lyu

*Affiliated Hospital of InnerMongolia Medical University***Objective** To investigate the incentives and analyses the clinical pathology features and treatment of cutaneous scleromyxodema.**Methods** The patient, a 53 year old woman had presented with sclerosis of the skin and clusters of small lichenoid papules over her arms, legs, and back, with itching for 20 days. There is no sign of physical examination except skin feature, which initially presents with sclerosis of the skin and clusters of small lichenoid papules with a predilection for the face, neck, forearm, shoulder, belly, hands, and the legs. Progressively, the skin lesions can become more widespread and the induration of skin can result in a scleroderma-like condition with sdero-dactyly and microstomia.

Histopathologically, the epidermis is roughly normal, collagen in layer and middle of the dermal is loose, where there is a lot of bluish mucin deposit on.

**Results** The patient was diagnosed as scleromyxodema, and then treated by cortico-steroids and Hydroxychloroquine. No any special treatment was used except this. After two weeks, the general condition of the patient was fine and the papules decreased obviously. The follow-up to the patient is still going on now.

**Conclusion** It was obviously that the effect of Cortico-steroids and Hydroxychloroquine on scleromyxodema.

## PO12 Photodermatoses

PO12-005

### n-3 PUFA protect skin from ultraviolet induced acute injury on SKH-1 hairless mice

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**Objective** To explore the protective effect of dietary n-3 polyunsaturated fatty acids (PUFA) for ultraviolet induced skin acute injury on SKH-1 hairless mice.

**Methods** SKH-1 mice were fed with special diets (total 5 groups, n-3 PUFA content of 0%, 12.5%, 25%, 50%, and 100%. The remaining ingredients are the same as the normal experimental mice forage) for 8 weeks. The total amount of fat acid is same as normal diets. Eight weeks later, the mice were irradiated with solar ultraviolet to induce acute ultraviolet injury. Skin roughly reaction was observed with dermatoscope and skin tissue was acquired 24hs post UV. Histopathology was performed to detect intercellular edema and infiltration of inflammatory cells. Immunohistochemistry was used to observe the expression of inflammatory cytokines, including interleukin -1 beta (IL-1 beta), interleukin -6 (IL-6) and tumor necrosis factor alpha (TNF- alpha), and the level of these three factors in the tissue was detected by ELISA.

**Results** Acute ultraviolet injury reaction was milder in 25%, 50%, 100% n-3 PUFA groups than 0%, 12.5% n-3 PUFA groups. Histopathology showed less epidermal thickening, less intercellular edema, less infiltration of inflammatory cells in 25%, 50%, 100% n-3 PUFA groups. ELISA results in skin tissue showed IL-1 $\beta$ , IL-6, TNF- $\alpha$  inductions were restored in 25%, 50%, 100% n-3 PUFA groups ( $P < 0.05$ ).

**Conclusion** Dietary n-3 PUFA has protective effects against acute ultraviolet injury; the content of n-3 PUFA in fat should more than 25%. And stronger the protective effect was dose dependent.

PO12-006

### Knowledge, attitudes and practice about solar ultraviolet radiation between urban and rural residents in Beijing

Fen Peng, Man Li, Zhou Chen, Jian-Zhong Zhang

*Peking University People's Hospital*

**Objective** To survey the knowledge of the urban population and the rural population in Beijing on the awareness and the protection of ultraviolet radiation.

**Methods** A total of 400 subjects were surveyed with questionnaire; for asking the knowledge about the features of UV, the influence of UV radiation, the use of sunscreens and sunbed; skin type and skin aging symptoms especially senile lentigo.

**Results** Of the 400 populations, the average outdoor activity times were 2 hours per day. 16.8% had sunburn history. 32.5% adopted sunscreen for preventing sunburn. There are no significant differences between the sun protection and the two regions. However, the use of sunscreen is significantly associated with the education level. The higher education level is, the more likely to use sunscreen. To compare with the population in skin type IV, they are more

likely to use the sunscreen in skin type III. The use of sunscreen was associated with less senile lentigo

**Conclusion** There is a lack of knowledge about solar ultraviolet and sun protection among Chinese population in Beijing. Moreover, the education of sun protection is very important.

PO12-008

### **Voriconazole enhances skin tumor development by UVB through the mechanism its induction of inflammatory response**

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Voriconazole is an anti-fungal agent and used as a prophylactic measure, especially in immunocompromised patients. However, there have been several reports of its adverse reactions, namely photosensitivity with intense inflammatory rashes and subsequent skin cancer development. To assess the effects of photosensitizing drugs voriconazole and hydrochlorothiazide (HCTZ) on the enhancement of UV-induced inflammatory responses and UV-induced tumorigenesis, we utilized *Xpa*-knockout mice, which is DNA repair-deficient and more susceptible to UV-induced inflammation and tumor development than wild-type mice. Administration of voriconazole prior to broad-band UVB exposure significantly up-regulated multiple inflammatory cytokines compared with the vehicle- or HCTZ-administered groups. Voriconazole administration along with chronic UVB exposure produced significantly higher number of skin tumors than HCTZ or vehicle in *Xpa*-knockout mice. Furthermore, the investigation of UVB-induced DNA damage using embryonic fibroblasts of *Xpa*-knockout mice revealed a significantly higher 8-oxo-7,8-dihydroguanine level in cells treated with voriconazole N-oxide, a voriconazole-metabolite during UV exposure. The data suggest that voriconazole plus UVB-induced inflammatory response may be related to voriconazole-induced skin photo-tumorigenesis.

PO12-001

### **Degraded melanosomes are incompetent to protect epidermal keratinocytes against UV damage**

Tie-Chi Lei

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**Background** Melanosomes are membrane-bound intracellular organelles that are uniquely generated by melanocytes (MCs) in the basal layer of human epidermis. Highly pigmented mature melanosomes are transferred from melanocytes (MCs) to keratinocytes (KCs), and then positioned in the supra-nuclear region to ensure protection against ultraviolet radiation (UVR). However, the molecular mechanism underlying melanosome (or melanin pigment) transfer remains enigmatic. Emerging evidence shows that exo-/endo-cytosis of the melanosome core (termed melanocore) has been considered as the main transfer manner between MCs and KCs. As KCs in the skin migrate up from the basal layer and undergo terminal differentiation, the melanosomes they have taken up from MCs are subjected to degradation.

**Method** In this study, we isolated individual melanosomes from human MCs in culture and then induced their destruction/disruption using a physical approach.

**Results** The results demonstrate that the ultrastructural integrity of melanosomes is essential for their antioxidant and photoprotective properties. In addition, we also show that cathepsin V (CTSV), a lysosomal acid protease, is involved in melanosome degradation in calcium-induced differentiated KCs and is also suppressed in KCs following exposure to UVA or UVB radiation.

**Conclusion** Thus, our study demonstrates that change in the proportion of melanosomes in the intact/undegraded state by CTSV-related degradation in KCs affects photoprotection of the skin.

PO12-003

**Association of chronic sun exposure with distinct histone acetylation changes in human skin**

Shu Ding, Jing Chen, Qing-Hai Zeng, Ai-Yuan Guo, Jian-Yun Lu, Li-Na Tan, Jian Kang, Jin-Hua Huang

*Department of Dermatology, The Third Xiangya Hospital of Central South University*

**Objective** To analyse patterns of histone modification in sun-exposed and non-exposed skin, and identify photoaging-related genes modified by abnormal histones.

**Methods** Skin biopsies were collected both from the outer forearm (sun-exposed area) and the buttock (non-exposed area) in 20 healthy middle-aged female volunteers. Histone modification profile (global histone H3/H4 acetylation and H3K4/H3K9 methylation) were tested in sun-exposed and non-exposed skins with ELISA and western blot. Expression levels of HATs and HDACs were measured with RT-qPCR and western blot. ChIP-chip assay with anti-acetyl-histone H3 antibody in sun-exposed Pool (combining six sun-exposed skin samples) and non-exposed Pool (combining six non-exposed skin samples) was conducted to explore the abnormal histone H3 acetylation genes related to photoaging, then ChIP-qPCR was followed to verify the results of ChIP-chip.

**Results** We found that the level of histone H3 acetylation increased significantly in sun-exposed skin compared with non-exposed skin. The increased P300 and decreased HDAC1 and SIRT1 expression in sun-exposed skin might be the main cause. Further, compared with non-exposed skin, ChIP-chip assay results showed that 227 genes displayed significant hyperacetylation of histone H3, and 81 genes displayed significant hypoacetylation of histone H3 in sun-exposed skin. The mRNA level of PDCD5, ITIH5, MMP1 and AHR were significantly up-regulated in sun-exposed skin compared with non-exposed skin. Histone H3 acetylation at these genes promoter were positively correlated with the mRNA expression of the corresponding gene.

**Conclusion** Histone H3 hyperacetylation induced by chronic sun exposure may play a critical role in the pathogenesis of skin photoaging.

PO12-004

**Risk factors for rosacea in China: A retrospective case-control study**

Ben Wang, Ying-Xue Huang, Ji Li, Dan Jian, Hong-Fu Xie, Wei Shi

*Xiangya Hospital of Central South University*

**Aim** The risk factors for rosacea is lack of large-sample epidemiological data, especially in the Asian population. This study aimed to study risk factors for rosacea in China.

**Methods** Data from a population-based case-control study of 800 rosacea cases and 800 skin-healthy controls were collected through retrospective case-control study, and participants were queried for dietary habits, lifestyle habits and skincare habits using a questionnaire.

**Results** In multivariate analysis, rosacea patients had significantly higher chance to have imbalance skin type (dry, oily, or mixed) (OR=4.80, 5.00, 7.74; 95%CI 3.01–7.67, 3.14–7.93, 4.99–12.01,  $P < 0.05$ ), high greasy food and tea intakes (OR=1.99, 2.18; 95%CI 1.17–3.37, 1.05–4.55;  $P < 0.05$ ), too much sleeping (OR=1.52, 95%CI 1.08–2.14;  $P < 0.05$ ), sunburn (OR=3.4; 95%CI=1.88–6.18;  $P < 0.05$ ), using skincare products and facial mask excessively (OR=2.54, 1.3; 95%CI 1.71–3.78, 1.14–5.83;  $P < 0.05$ ) comparing with skin-healthy controls. Protective factors included milk intake (OR=0.10; 95%CI 0.03–0.37;  $P < 0.05$ ), better sleep quality (OR=0.81; 95%CI 0.77–0.86;  $P < 0.05$ ), use of sun protector (OR=0.46; 95%CI 0.30–0.69;  $P < 0.05$ ). There were no statistically significant differences either in alcohol drinking, smoking status, spicy food, coffee intake and sweat food between rosacea patients and controls.

**Conclusion** The results from this large-sample case-control study emphasize the role of skin barrier in the decreasing of rosacea. Maintaining good lifestyle, dietary and skin care habits is extremely important for the treatment and rehabilitation of rosacea patients.

PO12-007

**In vivo CLSM features of rosacea**Yu-Juan Xiao<sup>1</sup>, Qing-Chun Diao<sup>2</sup>, Kang Zeng<sup>2</sup>

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**Objective** To explore CLSM features of rosacea and compared with the volunteers.

**Methods** Clinical, dermoscopic, and CLSM image were obtained from 30 rosacea patients and 30 volunteers recruited in our outpatient department from July 2016 to April 2017. CLSM image included the lesion and peripheral lesion of 0.5 cm. Typical images and the thickness of stratum corneum were recorded, then compared with those of the volunteers.

**Results** Typical CLSM images of rosacea were as follows: the stratum corneum became thinner; intercellular edema, the capillary of dermal papillar expanded and infiltrated with inflammatory cells. Pigment disorders included the high diopter of hyperpigmentation and low diopter of hypopigmentation. In severe cases, Collagen fiber broken, coarse pore infiltrated with inflammatory cells, D. folliculorum could be detected by CLSM and presented as roundish or lengthy cone-shaped structures. The CLSM allowed the quantification of the thickness of stratum corneum and revealed significant differences ( $P < 0.05$ ): the mean thickness of stratum corneum was  $11.3 \pm 1.30 \mu\text{m}$  in the patients compared with  $11.3 \pm 1.30 \mu\text{m}$ , respectively, in the controls.

**Conclusions** CLSM represents a useful and noninvasive imaging tool to analyze the morphologic changes of acne rosacea.

PO12-009

**Observation of Colloid Milium by dermoscopy and Literature Review**

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We reported a 51-year-old female who was a farmer presented with yellowish asymptomatic papules on the bilateral zygomatic for 4 years. And her father also had the identical lesions. Dermoscopy revealed aggregated yellow amorphous structureless areas with angioectasis. Histologic exam revealed a sheet of deposition of pale eosinophilic amorphous material containing artifactual fissures in the upper dermis. Diagnosis: colloid milium. Finally we discussed the dermoscopic differential diagnosis of yellow amorphous structures, which may often be seen in colloid millium, nevus sebaceous and syringoma. Dermoscopy might be helpful to the diagnosis and distinguish of Colloid Milium.

**PO13 Pigmentary Disorders**

PO13-004

**Using reflectance confocal microscopy to observe in vivo melanolysis after treatment with the picosecond alexandrite laser and Q-switched Nd: YAG laser in melasma**Da Jung Jo<sup>1</sup>, In-Hye Kang<sup>2</sup>, Ji Hwoon Baek<sup>1</sup>, Min Jae Gwak<sup>2</sup>, Sang Jun Lee<sup>3</sup>, Min Kyung Shin<sup>2</sup>

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**Background** Melasma is an acquired type of hyperpigmentation that is characterized by the appearance of scattered

light- to dark-brown macules and patches on the face. Recently, several lasers have been proposed as treatment options for melasma. In particular, the picosecond alexandrite laser is an ideal laser for selective photothermal melanolysis. The aim of our study was to compare the effectiveness in melanolysis of a single treatment of the picosecond alexandrite laser with that of the Q-switched Nd: YAG laser using reflectance confocal microscopy imaging of the melasma lesions.

**Methods** We performed a split-face study using the picosecond alexandrite laser and Q-switched Nd: YAG laser in eight patients with melasma. Both melasma lesions and surrounding normal skin were examined under reflectance confocal microscopy 1 and 24 hours after treatment. The melanin intensity of each skin layer was investigated.

**Results** At baseline, melasma has irregular melanin distribution and a higher melanin density than surrounding normal skin under reflectance confocal microscopy. After a single treatment with either the picosecond alexandrite laser or the Q-switched Nd: YAG laser, both melanin-induced reflectance and melanin index decreased.

**Conclusions** It is necessary to assess the distribution of melanin by reflectance confocal microscopy and observe the melanolysis in melasma lesion after laser treatment. It can be applied to the treatment of melasma.

PO13-007

### Linearly distributed multiple melanocytic nevi on the right shin

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A 39-year-old woman presented with asymptomatic, multiple, linearly distributed brownish macules on the right shin for 5 years. The lesions increased in size and number over time. The patient had no history of any trauma or underlying disease. A punch biopsy specimen showed nests of melanocytes at dermal-epidermal junction at the tips of rete ridges with no cytologic atypia. Diagnosis of melanocytic nevus, junctional type was made by these clinical and histopathological findings. The patient refused further therapy. Linearly distributed multiple melanocytic nevi are very rare. A case of linear arrangement of melanocytic nevi on left calf was reported which was thought to be triggered by constant friction and pressure of a ski boot during skiing. Herein, we report a rare case of multiple melanocytic nevi, which are linearly distributed without any trauma history.

PO13-013

### Comparison of dermoscopic features between congenital and acquired acral melanocytic nevi in Korean patients

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**Background** Dermoscopic patterns of acral melanocytic nevi (AMNs) are crucial in differentiation from acral melanoma. Despite several studies regarding dermoscopic patterns of acquired acral melanocytic nevi (AAMNs), those of congenital acral melanocytic nevi (CAMNs) have rarely been reported. This study was purposed to compare the clinical and dermoscopic features between CAMNs and AAMNs.

**Methods** This study included 44 CAMN and 40 AAMN patients. We reviewed medical records, clinical and dermoscopic findings of the two groups retrospectively.

**Results** CAMNs were more asymmetric than AAMNs ( $P=0.002$ ) and presented more frequently as a comma shape ( $P=0.005$ ). Regarding dermoscopic findings, globular pattern (56.8%) was the most common feature in CAMNs, followed by parallel furrow (47.7%), and crista dotted (31.8%). In AAMNs, parallel furrow (47.5%) was the most common finding, followed by fibrillar (35%), and lattice-like (30%). Parallel ridge, fibrillar, globular, crista dotted and blue-white veil were statistically different between the both groups ( $P<0.05$ ). Also, CAMNs showed melanoma

specific dermoscopic patterns such as parallel ridge (20.5%) and blue- white veil (25%).

**Conclusions** In this study, dermoscopic patterns of CAMNs and AAMNs were quite different from each other. The result of this study could be helpful when encountering CAMNs. To our knowledge, dermoscopic patterns of CAMNs have not been studied in Korea.

PO13-019

### **Psychological and neurological effects in the onset, development and prevention of vitiligo**

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Vitiligo is an acquired depigmenting disorder, presenting as white patches, and involves the exposed body parts, such as face, trunk, and hands. It can be cosmetically disfiguring and can lead to serious psychological problems in daily life. The pathogenesis of vitiligo still remains uncertain. It is raised by neuro-endocrine-immunologic pathogenesis that nervous system regulates immune response by secreting neuropeptides. This paper reviews the psychological and neurological effects in the onset, development and prevention of vitiligo, aims to provide more treatment methods for clinicians, and improves the quality of life in patients of vitiligo.

PO13-023

### **Incontinentia pigmenti in a Japanese female infant with a novel frameshift mutation in the *IKBKG* gene**

Min Li

*Nippon Medical School Affiliated Hospital*

Incontinentia pigmenti (IP) is a rare X-linked dominant genodermatosis with skin lesions along Blaschko lines started in the neonatal period and evolved in four stages. The gene, inhibitor of kappa light polypeptide gene enhancer in B cells, kinase gamma (*IKBKG*)/nuclear factor-kappaB (NF- $\kappa$ B) essential modulator (*NEMO*), located in X28, is responsible for IP. A common exon 4-10 deletion of *IKBKG* occurs in about 80% of IP cases. Our case of a Japanese IP female manifested the typical skin, hair and dental symptoms with a novel frameshift mutation (c.921\_934del CTACAAGCGGACT) in exon 8 of *IKBKG* (p.Y308PfsX3). The variability in IP phenotype is related to the X-inactivation and the function of NF- $\kappa$ B.

PO13-024

### **Repigmentation of vitiligo-associated leucotrichia with traditional Chinese medicine**

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**Background** Leucotrichia in vitiligo is a significant negative predictor to treatment response. In addition, even after successful repigmentation of vitiliginous skin, leucotrichia may remain depigmented. Although there are few reports of successful repigmentation in leucotrichia using various surgical treatments, there has been no report of leucotrichia repigmentation by non-surgical treatments including topical therapy, systemic medicine or phototherapy. This study aimed to share our interesting observation of repigmentation of vitiligo-associated leucotrichia with traditional Chinese medicine (TCM).

**Methods** Vitiligo patients with associated leucotrichia were treated with standard regimen of combination therapy of

oral TCM compound capsule named BDF capsule and topical TCM compound solution named BDF solution.

**Results** We report five cases of vitiligo-associated leukotrichia that achieved significant repigmentation with TCM combination therapy. Interesting, apart from leukotrichia repigmentation, increase in hair density was also observed in some cases.

**Conclusions** This is the first report of repigmentation in leukotrichia achieved by non-surgical treatment. Our TCM combination therapy may represent a therapeutic option for repigmentation of vitiligo-associated leukotrichia.

PO13-025

### **Ashy dermatosis with positive patch test to gold sodium thiosulfate, cobalt chloride and carba mix**

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*Hirosaki University Graduate School of Medicine*

Ashy dermatosis is a disorder of pigmentation, the lesions usually occur on the trunk and extremities of non-Caucasians. The typical clinical findings show small erythemas initially and gradually change to ash-colored or grayish-blue pigmentation. Some cases are associated with Itchnng, but the asymptomatic cases also are present. The pathogenesis of ashy dermatosis remains unknown, but partial cases are proposed to be caused by some drugs including omeprazole, benzodiazepines and oral antibiotics, metal allergy and thyroid disease. There are not effective treatment methods. We report a case of a 53 year-old Japanese woman presented with seven months' history of asymptomatic and grayish-blue macules on her trunk and extremities. Histopathological examination of the left arm lesion revealed edema, lymphocytes infiltration with melanophage of the upper dermis and slightly vacuolar degeneration of the basal layer. Patch testing was performed according to Japanese standard allergens, positive reactions were defined as gold sodium thiosulfate, cobalt chloride and carba mix. As she had dental work done using dental metals contain much gold, we requested the dentist to remove the dental metals and the removals have been going on.

PO13-027

### **Involvement of Dickkopf-related protein 1 in melanogenesis: focus on solar lentigo lesion**

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**Background** The aims of the study were firstly, to determine the cellular level of Dkk1 on hyperpigmented skin including solar lentigo; secondly to conduct a comprehensive investigation of the mechanisms underlying this lesion.

**Methods** *In vitro* models that mimic the *in vivo* environment were used: fibroblasts isolated from solar lentigo and peri-lesional biopsies, and normal fibroblasts embedded in 3D collagen gel and exposed to repeated doses of UVA.

**Results** Q-PCR and ELISA techniques showed that fibroblasts from solar lentigo and fibroblasts irradiated to UVA, express low level of Dkk1. Immunohistochemical studies revealed a strong staining of bcatenin and melanin in solar lentigo skin, which indicates an activation of Wnt/bcatenin signaling and melanocyte function. Our previous data demonstrated the senescent-like phenotype of fibroblasts from solar lentigo with particularly a high secretion of TGF- $\beta$ 1, suggesting its role in the development of the lesion. Fibroblasts should respond to many inflammatory mediators released during hyperpigmentary disorder by increasing TGF- $\beta$ 1 secretion. TGF- $\beta$ 1 is known to suppress the expression of Dkk1 in a p38-dependent manner.

**Conclusions** Our hypothesis was that TGF- $\beta$ 1 mediates development of solar lentigo by reducing Dkk1 expression in fibroblasts through the p38 MAP kinase pathway, which leads to an activation of the Wnt/bcatenin signaling cascade. This process may result in an uneven distribution of active melanocytes, with areas of hyperpigmentation in the skin.

PO13-001

**Dermal nevus cells from congenital nevi or acquired pigmented nevus can penetrate the dermis when seeded on the de-epidermized dermis alone**

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**Background** This study aimed to culture nevus cells, and construct tissue-engineered skin with nevus cells on de-epidermized dermis (DED) *in vitro*, and we would research the migration of nevus cells without the control of keratinocytes in the reconstructs.

**Methods** 1. Two step digestive treatment for isolation and cultivation of human nevus cells. The epidermis was separated from the dermis, tissues were shaken vigorously, and get rid of epidermis. Single-cell suspension was obtained by treating the benign nevus with 0.2% collagenase IV, then nevus cells were cultured by medium254 supplemented with 1% Human melanocyte growth supplement (HMGS). 2. The third passage of nevus cells was seeded on the cell microscopic glass, and cultured for 24 hours. Immunocytochemical staining of S-100 and NSE were used to observe the nevus. 3. A human de-epidermized dermis (DED) was prepared with some elements of basal membrane (BM).The third passage of nevus cells were seeded onto the surface of the DED and maintained at the submerged culture for 3days culture. Subsequently, the constructed tissue-engineered skin was examined with HE, S-100 and NSE immunohistochemical staining.

**Results** 1. There were a large number of nevus cells, and the nevus cells were bipolar or dendritic. Immunohistochemical staining showed positive for S-100 and NSE. 2. The nevus cells were located in the basal layer or migrate into the dermis in the artificial epidermal skin. Immunohistochemical staining showed positive for S-100 and NSE.

**Conclusions** It can be received a large number of nevus cells, and the third passage nevus cells seeded on DED can construct tissue engineered skin with nevus cells composition *in vitro*. Dermal invasion and nests were observed in the reconstructs. This model may mimic the formation of nevus *in vitro*.

PO13-002

**Oxidative stress enhances CD8<sup>+</sup>T cells activation and cytotoxicity in vitiligo via upregulating IL-15 expression through activating the NFκB pathway in keratinocytes**

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**Background** This study aimed to investigate the role of IL-15 in the pathogenesis of vitiligo and identify the mechanism of oxidative stress-induced immunologic destruction in vitiligo.

**Methods** IL-15 expression and distribution in vitiligo lesions were assessed by immunohistochemistry and immunofluorescence. IL-15 level in serum and culture supernatants were detected by ELISA. The expression of IL-15 in keratinocyte cell line (HaCaT) was detected by qRT-PCR, western blot and flow cytometry. Peripheral blood CD8<sup>+</sup>T cell were analyzed by flow cytometry. The destruction of melanocyte was analyzed by ELISA and flow cytometry.

**Results** IL-15 expression was markedly up-regulated in both lesions and serum of vitiligo. *In vitro*, IL-15 expression was significantly increased in both cell membrane and culture supernatants of HaCaT cells with H<sub>2</sub>O<sub>2</sub> treatment. And the mechanism was that H<sub>2</sub>O<sub>2</sub> can activate the NFκB pathway, which is an important nuclear factor for IL-15 transcription. Furthermore, IL-15 can dramatically enhance the expression of CD69a and the production of IFN-γ and Granzyme B of CD8<sup>+</sup>T cell. Besides, IL-15 can promote the proliferation and the expression of CXCR3, CXCR6 and CD49a on CD8<sup>+</sup>T cell. Compared with control group, CD8<sup>+</sup>T cell stimulated by IL-15 significantly aggravated destruction of melanocytes.

**Conclusions** We demonstrated that overexpression of IL-15 induced by oxidative stress activated CD8<sup>+</sup>T cell-mediated autoimmune destruction of melanocytes, thus inhibition of IL-15 may be a potential novel therapeutic target for vitiligo treatment.

PO13-003

**Clinical application exploration of VISIA in nursing of patients with chloasma**

Shi-Qin Tao

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**Background** This study aimed to analyze the skin conditions of patients with chloasma by VISIA complexion analysis system and guide the patients' daily skin care.

**Methods** Totally 40 patients with chloasma were selected to be analyzed the percentiles of 8 items including skin spots, wrinkles, texture, pore, UV spots, porphyrins, brown spots, red zone and the age difference by VISIA. Skin care and patient education plans were made based on the results of the study.

**Results** Most patients' percentiles of spots, wrinkles, UV spots, brown spots, texture and red zone are less than 50%. VISIA skin age of 70% patients are older than the true age.

**Conclusions** Patients with chloasma are more likely to look older. Using cosmeceuticals regularly and sun protecting correctly are the important measures for skin care of patients with chloasma. VISIA analysis results can be more objective to guide skin care and improve patient compliance.

PO13-005

**A pilot study of oral tranexamic acid and glycyrrhizin compound in the treatment of recalcitrant Riehl's melanosis**

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**Background** Riehl's melanosis is an acquired pigment disorder characterized by the development of hyperpigmented lesions on the forehead, temporal and zygomatic regions. Up till now, there is no standardized treatment strategy for this challenging disease. This study aimed to evaluate the efficacy and safety for a novel combination therapy of oral tranexamic acid and Glycyrrhizin compound for recalcitrant Riehl's melanosis.

**Methods** Ten patients with Riehl's melanosis were recruited. After eliminating contraindications, all enrolled patients were treated with oral tranexamic acid 500 mg/day and oral Glycyrrhizin compound 150 mg/day for 6 months. Lesions were imaged by reflectance confocal microscopy (RCM), dermatoscopy and VISIA monthly. Mexameter was used to examine melanin index and erythema index. Clinical outcome score and patient satisfaction score were also examined.

**Results** Among ten patients, seven of them received "marked improvement" grade by both physicians and patients themselves; two of them received "moderate improvement"; one of them received "minimal improvement" at final visit. Mean melanin index and erythema index were also significantly decreased compared with baseline. RCM and dermatoscopy confirmed the improvement of pigmentation and erythema with decreased pigment granules and telangiectatic vessels.

**Conclusion** Oral tranexamic acid in combination with Glycyrrhizin compound is an effective option for Asian patients having recalcitrant Riehl's melanosis.

PO13-006

**TRPM2-dependent NLRP3 inflammasome activation exacerbates the oxidative stress-driven immune response in patients with vitiligo**

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*Department of Dermatology, Xijing Hospital, Fourth Military Medical University*

**Background** This study aimed to explicate how oxidative stress activates NLRP3 inflammasome in keratinocytes

and its contribution to vitiligo development.

**Methods** Skin and serum samples from vitiligo patients were used to observe the activation of NLRP3 inflammasome in vitiligo, with the specimens from healthy donors used as control. Primary human keratinocytes and HaCaT cells were treated by H<sub>2</sub>O<sub>2</sub>, and then the expression of NLRP3 inflammasome components and the intermediated signaling pathway were examined. CD8<sup>+</sup> T cells were collected from the blood samples of vitiligo patients and then incubated with the culture supernatants of HaCaT cells with indicated treatments to evaluate the effect of NLRP3 inflammasome on CD8<sup>+</sup> T cell response in vitiligo.

**Results** NLRP3 and IL-1 $\beta$  expressions were increased in serum and perilesional of vitiligo patients, and serum IL-1 $\beta$  was correlated with disease activity and decreased after effective treatment in vitiligo patients. Furthermore, H<sub>2</sub>O<sub>2</sub>-induced NLRP3 inflammasome activation in keratinocytes was dependent on the mitochondrial Ca<sup>2+</sup> influx mediated by TRPM2 channels. Moreover, the activation of NLRP3 inflammasome in H<sub>2</sub>O<sub>2</sub>-treated keratinocytes up-regulated chemotaxis-related proteins, and promoted the activation and IFN- $\gamma$  production of CD8<sup>+</sup> T cells derived from vitiligo patients through IL-1 $\beta$ /IL-1R signaling.

**Conclusions** Our study demonstrated that TRPM2 mediates NLRP3 inflammasome activation induced by oxidative stress in keratinocytes, which aggravates CD8<sup>+</sup> T cell response and thereby contributes to dysregulated autoimmunity in vitiligo.

PO13-009

### Clinical research of 308 nm excimer lamp combined with 830 nm infrared light in the treatment of vitiligo

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**Background** This study aimed to observe and evaluate the efficacy of the combined therapy using 308 nm excimer lamp and 830 nm infrared light in the treatment of vitiligo.

**Methods** Totally 33 patients with vitiligo were recruited from our department in the randomized self-controlled study. Lesions in the symmetrical or adjacent areas (three lesions) were randomly divided into three groups including the 308 nm excimer lamp group, 830 nm infrared light group and the combined treatment group. Lesions were treated twice a week, and the clinical therapeutic efficacy was analyzed after 12 weeks.

**Results** 30 patients completed the study and 90 lesions were treated, including 27 lesions on the face and neck, 33 lesions on the trunk, 12 lesions on the limb, 18 lesions on the acral skin. After 4 weeks of treatment, the repigmentation rate of the combined treatment group (43.3%) was significantly higher than those of 308 nm excimer lamp (16.7%) and 830 nm infrared light group (0) ( $P < 0.05$ ). After 12 weeks of treatment, the total effective rates were respectively 90%, 83.3% and 40.0% in the combined treatment group, the 308 nm excimer lamp group and the 830 nm infrared light group. There was no significant difference between the combined treatment group and the 308 nm excimer light group ( $P > 0.05$ ). Significant differences of the effective rate were observed between the combined treatment group and the 830 nm infrared light group ( $P < 0.05$ ).

**Conclusion** The combined therapy of 308 nm excimer lamp with 830 nm infrared light is more effective in the treatment of vitiligo.

PO13-010

### Association analysis revealed one susceptibility locus associated with vitiligo in the Chinese Han population

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**Background** Vitiligo is a common acquired or generalized skin depigmentation disease caused by the disappearance

of melanocytes in the skin, but the mechanism is not yet clear and may be related to the interaction of immune, hereditary and acquired environment. GWAS is widely used in the field of vitiligo gene research. So far, there are many vitiligo-related genes and loci derived from GWAS studies. There are differences in vitiligo-related genes among different nations and races. Recent studies have found some new risk loci in the European and American patients with vitiligo, including rs6583331, rs41342147, rs1031034, rs35161626, rs6059655, rs231725, rs6012953, rs12421615, rs16843742, rs8083511, rs4807000, rs11079035, rs4308124, rs78037977. The aim of this study is to validate these new loci (rs6583331, rs41342147, rs1031034, rs35161626, rs6059655, rs231725, rs6012953, rs12421615, rs16843742, rs8083511, rs4807000, rs11079035, rs4308124, rs78037977) of vitiligo in Chinese Han people with vitiligo.

**Methods** We selected and genotyped 14 single nucleotide polymorphism (SNPs) in an independent cohort including 1472 cases and 1472 controls using the Sequenom MassArray iPLEX1 system. Bonferroni adjustment was used for multiple comparisons and  $P$  value  $<0.0036$  ( $0.05/14$ ) was considered statistically significant. Using genetic models to analyze the significant loci.

**Results** The T allele of rs6583331 located in FBXO45-NRROS were observed to be significantly associated with vitiligo ( $OR = 1.22$ , 95%  $CI$ : 1.10–1.36,  $P = 0.0001$ ). The T allele of rs6583331 has the advantage of dominant mode inheritance in the Chinese han vitiligo population.

**Conclusions** The study revealed that rs6583331 is associated with vitiligo in the Chinese Han population. In order to further explore the relationship between rs6583331 and vitiligo laid the foundation. At the same time, it has brought new enlightenment to the study of the relationship between FBXO45-NRROS gene region and vitiligo.

PO13-011

### **Dermoscopy evaluation the efficacy of isotretinoin treatment of confluent and reticulated papillomatosis**

Xin Zhou

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**Background** Confluent and reticulated papillomatosis (CARP) is an acquired keratinization disorder of characteristic clinical signs. However, the distinction from similar pigmented dermatoses is sometimes challenging, especially in case of atypical location and whom reluctant biopsy examination. There are currently no standard treatments as well. The present study describes the dermoscopic features of CARP, and its evaluation for the efficacy of isotretinoin treatment in order to facilitate the noninvasive diagnosis of dermoscopy in this rare disease.

**Methods** A 32-year-old male patient presented with brown papules and plaques on the neck and trunk for the last 14 years. Dermatological examination, dermoscopy test, direct mycological examination and skin biopsy were performed for the diagnosis.

**Results** Dermatological examination showed brown, warty flat papules and plaques converging centrally and with a peripheral reticulate pattern. Dermoscopy evidenced a brownish pigmentation with poorly defined borders, covered with fine white scales and a pattern of 'sulci and gyri'. Direct mycological examination of the lesion was negative. Histopathology of the dorsal lesion demonstrated mild parakeratosis, compact hyperkeratosis, hyperpigmentation of the basal layer, papillomatosis and superficial perivascular mononuclear infiltrate. Correlations between dermoscopic and histopathological findings was speculated, white scales due to parakeratosis and compact hyperkeratosis, and 'sulci and gyri' pattern due to papillomatosis. Diagnosis of confluent and reticulated papillomatosis was established. The patient responded well to the use of oral isotretinoin (20 mg/d) and topical 0.1% Tretinoin Cream twice daily, and his lesions almost cleared completely after four weeks. Reexamination of dermoscopy showed the characteristic 'sulci and gyri' pattern disappeared.

**Conclusions** Dermoscopic findings of whitish scaling and brownish pigmentation with 'sulci and gyri' pattern is the characteristic diagnosis features of CARP. The combination therapy of oral isotretinoin and topical Tretinoin Cream appeared to be clinically effective in this present case of CARP.

PO13-012

**A case report of pigmented pityriasis rosea in child**

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Pigmented pityriasis rosea is a special type of the pityriasis rosea, characterized by inflammatory pigmentation spots on the trunk and extremities, with the same axis and dermatoses. It is a relatively rare dermatological disorder, need to distinguished with drug rash, syphilis, lichen planus pigmentosus, urticaria pigmentosa, Riehl melanosis, erythema dyschromicum perstans. We here report a case of a 7 year-old male who presented with pigmented pityriasis rosea over his trunk and extremity. On histopathological examination Mild deratization of the epidermis, slight thickening of the spinous layer of the focal area, the increase of pigment in the basal lamina, the liquefaction and degeneration of the focal basal cells, the sparse lymphocytes surrounding the superficial dermis, and the infiltration of more phagocytic cells were found.

PO13-014

**A case of facial nevus depigmentosus getting remarkable repigmentation by treatment with 308-nm excimer laser**Qing-Hai Zeng<sup>1</sup>, Qi Shi<sup>2</sup>, Jin-Hua Huang<sup>1</sup>, Jian Huang<sup>1</sup>, Zhen Tang<sup>1</sup>, Cai-Yun Xi<sup>1</sup>, Jing Chen<sup>1</sup>*1. Department of Dermatology, Third Xiangya Hospital, Central South University**2. Department of Dermatology, Second Liling Hospital, Liling*

A six-month-old girl presented to our hospital with a five-month history of hypopigmented lesion on her right face. The patient was found to have an irregularly-shaped hypopigmented lesion on her right face only one month after her birth, which had caused no scratches, irritability, or other discomforts. During the preceding five months, the lesion color gets paler with no alterations in size. Inspection of the lesion suggested a pale color with no clear boundaries. The lesion and its surrounding areas were red after rubbing. Wood's light examination revealed a grayish white lesion. The skin reflectance confocal microscopy (RCM) examination suggested a significant reduction of melanin in basal cell layer. Therefore, Nevus depigmentosus (ND) was diagnosed. Treatment with a 308-nm excimer laser was started once a week at 300 mJ/cm<sup>2</sup>, which was increased by 50-100 mJ/cm<sup>2</sup> in each subsequent session until posttreatment erythema occurred. After 10 treatments, repigmentation in the lesion was obvious. The skin RCM results showed significant increase of melanin particles and visible basal cell rings in basal cell layer, suggesting remarkable repigmentation and recovery of melanocyte functions in the lesion. Follow-up observation for one month suggested no significant change in lesion color.

This case shows that skin RCM can effectively assist the diagnosis and efficacy evaluation of ND. 308-nm excimer laser may be a good choice for the treatment of ND.

PO13-015

**A Case of Laugier-Hunziker syndrome with platelet reduction misdiagnosed as multiple hairpins**

Chun-Yang Zhang, Xue-Li Li, Zhen-Lu Li, Qi Zhang, Hong Chen

*Henan Provincial People's Hospital*

A 53-year-old female patient had multiple hyperpigmentation for more than two years in the finger and toe nails, and had pigmentation in the lips, buccal mucosa, tongue and gums for 2 years. Platelets 70×10<sup>9</sup>/L, no abdominal symptoms, fecal occult blood test (-), gastroscopy and colonoscopy without exception. Department of Dermatology: Lips, buccal mucosa, lingual and gingival brown pigmentation spots, part of the finger (toe) longitudinal lines brown pigmentation spots. The buccal mucosa histopathology showed an increase in melanin in the basal layer, dermal

papilla pigment incontinence, and a small amount of melanocytes. The histopathology of the nails showed that the basal cells in the epidermis increased melanin, the basement membrane was intact, and the superficial dermis pigment incontinence. The diagnosis was: Laugier-Hunziker syndrome.

PO13-016

### Effects of PINK1 on melanocyte damage induced by oxidative stress

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*Peking University People's Hospital*

**Background** To detect the expression and effects of PINK1 in H<sub>2</sub>O<sub>2</sub>-treated cultured human normal melanocyte cell line PIG1.

**Methods** To detect the expression of PINK1 in PIG1 melanocytes, RT-qPCR and WB analyses were performed respectively. Cultured melanocytes were treated with various concentrations of H<sub>2</sub>O<sub>2</sub> for 24h, and analyzed for cell viability. PINK1-siRNA was used to downregulated PINK1 expression in PIG1 melanocytes. The melanocytes were then analyzed under oxidative stress conditions for cell morphology and viability, as well as morphology and function of mitochondrion.

**Results** The expression of PINK1 was identified by RT-qPCR and WB analyses. As detected by RT-qPCR, a downregulation of PINK1 model was established with PINK1-siRNA3. Compared with control group, transient transfection of PINK1-siRNA knockdown the expressing level of PINK1 could aggravate viability decrease, apoptosis,  $\Delta\Psi_m$  decrease, ROS generation, MPTP opening increase, and mitochondrial morphology change of H<sub>2</sub>O<sub>2</sub>-induced PIG1 melanocytes (P<0.01).

**Conclusions** It is the first time that the expression and function in defense oxidative damage of PINK1 was identified in normal human melanocyte in our study. The melanocytes are more susceptible to apoptosis or death with an increase of mitochondrial pathway apoptosis after downregulation of PINK1.

PO13-017

### Regulation of miRNA-211 by MMP9 affects the adhesion ability of epidermal melanocyte to basement membrane

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**Background** Micro RNA-211 (miR-211) is significantly expressed in melanocytes (MCs) and exerts pleiotropic effects on cell growth and movement. The alteration of miR-211 in UVB-exposed MCs may affect the expression of matrix metalloproteinase 9 (MMP-9), which has been identified as a predicted target gene for miR-211. In this study, we investigated whether miR-211 change the migration ability of MCs by regulating MMP9 expression and activity.

**Methods** The primary MCs were isolated and cultured from human foreskin tissues. The protein and mRNA levels of P53, TRPM1, MMP9 were examined using RT-PCR and western blotting. The activity of MMP9 was measured using a gelatin zymography assay. The hsa-miR211mimic and anti-hsa-miR211 reagents were purchased from Santa Cruz Biotech Co, and transfected MCs using Lipofectamine 2000.

**Results** The levels of P53 and MMP9 in mRNA and protein were increased in MCs exposed to UVB radiation in comparison with un-exposed cells, whereas, the levels of TRPM1 and miR211 were decreased significantly. After transfection hsa-miR211 mimic into melanocyte, the level of MMP9 was lower than that in untreated control, the ability of migration was also reduced.

**Conclusions** The P53/TRPM1/miR-211/MMP9 pathway is critical in UVB-induced MC migration, activation of such pathway seems to be helpful to enhance the repigmentation in vitiligo patients.

PO13-018

**Vitamin C and its derivatives suppress melanogenesis through acidification in melanocytes**

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**Background** Melanosome (MS) is an acidic organelle enveloped by the monolayer plasma membrane. The intraluminal pH of melanosomes is approximately 4-5. However, the optimal pH for tyrosinase has been shown at 6.8. Modulation of intraluminal pH in melanosomes seems to be helpful to screen reversible skin-lightening agents. Vitamin C ((L-ascorbic acid) has been clinically proven to be effective in the treatment of melasma, but the mechanism underlying skin-lightening remains undefined. In this study, we investigated whether VC and its two derivatives, magnesium ascorbyl phosphate (MAP) and 3-o-ethyl-L-ascorbic acid (VCE), could acidify melanosomes and inhibit melanogenesis.

**Methods** Melan-a cells were treated with VC, MAP and VCE. Dot-blotting assay was carried out to determine tyrosinase activity. Acridine orange and LysoSensor Green DND-189 stainings were used in combination with a confocal fluorescence microscopy to measure the pH change in the treated or/ untreated melanocytes. Concanamycin A and NH<sub>4</sub>Cl were supplemented into cell culture medium to neutralize intracellular acidic organelles besides lysosomes. Subsequently, tyrosinase activity and melanin content were examined again.

**Results** Fluorescence microscopy imaging analysis revealed that the pH in the melanocytes treated with VC and its two derivatives was much lower than that in the untreated control. Concanamycin A and NH<sub>4</sub>Cl could reverse the inhibition of melanogenesis induced by VC and its derivatives through further alkalization of melanosomes.

**Conclusion** Vitamin C and its derivatives inhibit tyrosinase activity and melanogenesis likely due to the acidification of melanosomes.

PO13-020

**Metformin: ameliorate the melanocyte of vitiligo by inducing autophagy through AMPK/mTOR signal pathway**

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**Background** This study aimed to explore whether metformin can ameliorate the melanocyte of vitiligo by inducing autophagy through AMPK/mTOR signal pathway.

**Methods** MTT was used to assay the proliferation of the MCs of vitiligo treated by varying concentrations of metformin. The changes of ultrastructure of MCs after metformin treatment were detected by electron microscope. The expressions of p-AMPK, p-mTOR, LC3 and p62/SQSTM1 were determined by Western blot Method.

**Results** We found that metformin could improve the proliferation of MCs, ameliorate the internal ultrastructure of MCs, induce autophagy through AMPK/mTOR signal pathway and consumed p62/SQSTM1.

**Conclusions** Metformin can ameliorate the melanocytes of vitiligo and improve their proliferation *in vitro*. It can be speculated that the effects of metformin may be induced by the activation of autophagy of MCs of vitiligo.

PO13-021

**Melanotic lupus erythematosus: A report of two cases and literature review**

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**Background** This study aimed to improve the level of diagnosis and differential diagnosis of facial hyperpigmented diseases and the awareness of melanotic lupus erythematosus (LE) among dermatologists.

**Methods** Two cases of melanotic LE were presented, with the discussion of the clinical manifestation, etiology, diagnosis and treatment by a literature review.

**Results** Case 1 was a 65-year-old male presented with 6-month-history of hyperpigmented patches on the left cheek and gradually developed on the right cheek. ANA test was negative. Case 2 was a 71-year-old female presented with 2-year-history of itchy hyperpigmented patches on the bilateral cheeks and upper limbs, and complained about thirsty for six years. Laboratory examinations showed SSA antibody (+) and Ro-52 (+), ESR 57 mm/h, Schirmer's test (+) and lymphocytic foci found in tongue biopsy. Skin biopsies of hyperpigmented lesions of both cases were similar showing follicular plugging, basal cell vacuolization, pigment incontinence, dermal mucin, perifollicular and perivascular infiltration of lymphocytes and a few plasma cells. Immunofluorescence tests were both negative. Based on the clinical, laboratory and pathological examinations, the diagnoses of melanotic LE were made in accordance with the rare published literature on both cases and case 2 was complicated with Sjogren syndrome. The treatment of hydroxychloroquine showed great improvements on hyperpigmentation in both cases.

**Conclusions** Discoid LE is a common variant of chronic cutaneous LE, while it rarely presents as hyperpigmented patches without scaling, atrophy or telangiectasias commonly on face which is called melanotic LE. Other causes of facial pigmentation, such as melasma, Riehl melanosis, lichen planus pigmentosus, drug-related pigmentation and pigmented contact dermatitis should be considered in the differential diagnoses. Histopathological and immunofluorescence examinations are essential for the correct diagnosis and treatment of suspected patients.

PO13-022

### **Clinical observation on the treatment of vitiligo with carbon dioxide fractional laser together with topical medication**

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**Background** This article aimed at observing the clinical effects and adverse responses of the joint treatment of vitiligo by Carbon dioxide (CO<sub>2</sub>) fractional laser together with topical medication.

**Methods** A total of 235 skin defects were collected from 100 patients with vitiligo from January 2016 to January 2018. These patients were divided into five groups, including control group and four treatment groups. Patients in each group used CO<sub>2</sub> fractional laser and diprospan topically once a month, but patients in treatment group1 also used 1% pimecrolimus; group 2: 1% pimecrolimus, tacalcitol; group 3: tacalcitol, eloson/Sicorten; group 4: tacalcitol, 1% pimecrolimus, weialu. These creams should be used 2 hours after the laser treatment and the frequency was 1-2 times once a day. Besides, all patients were prescribed medications simultaneously. After the last treatment, we observed the clinical efficacy, adverse responses, and repigmentation results.

**Results** Compared to the control group, the treatment group showed better improvement in clinical efficacy after 2-10 months. Among the treatment groups, group 4 showed the best improvement than group 1, group 2, group 3. However, there were no statistical significance between group 2 and group 3. There were five cases of adverse responses (2 case formed blister and 3 cases formed erythema). The above adverse reactions can be tolerated and self-relief without any treatment.

**Conclusions** CO<sub>2</sub> fractional laser combined with topical medication treating vitiligo showed better clinical efficacy and safety, especially for CO<sub>2</sub> fractional laser, diprospan, tacalcitol, 1% pimecrolimus, weialu.

PO13-026

### **Dowling–Degos disease: uptodate progresses in research**

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Dowling-Degos disease (DDD), as a rare genetic pigment disorder, also called Reticulate pigmented anomaly of the flexures (RPAF). Mutations in KRT5, POFUT1, and POGLUT1 are established to be involved in this disease. The

pathogenesis of NOTCH signaling pathways related remains an unsolved problem. Recent years, evidences have witnessed that PSENEN mutation carriers may be caught in DDD and the amount of coexistence between DDD and AI (acne inversa) is constantly increasing. Concerning PSENEN mutation carriers in DDD companied with/without AI or in AI companied with/without DDD from most case reports, the hypotheses from related authors, such as a defect of the epithelial proliferation in the external sheath leads to its rupture and occlusion, which is the underlying common condition in DDD and AI and a history of obesity or nicotine use could prompt an increased susceptibility to comorbid acne inversa, are completely distinct. In addition, related clinical data was profusely explored and a concluded correlation between genotype and phenotype was revealed. These findings towards gene mutations offer more backing for the idea that phenotypic variations in DDD are regularly linked to various mutations.

PO13-028

### **Characteristics and clinical significance of dermoscopy and reflectance confocal microscopy in children with hypopigmented diseases**

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**Background** This study aimed to compare the characteristics and specificities of dermoscopy and reflectance confocal microscopy (RCM) in children with hypopigmentation disorders such as vitiligo, amelanotic nevus, pityriasis alba, postinflammatory hypomelanosis, naevus anemicus, piebaldism; and to explore the clinical significance of dermoscopy and RCM in children with vitiligo.

**Methods** Totally 300 children with hypopigmented skin disorders were observed by dermoscope and reflectance confocal microscopy, including 67 cases of vitiligo, 120 cases of amelanotic nevus, 57 cases of pityriasis alba, 33 cases of postinflammatory hypomelanosis, 19 cases of tinea versicolor, 2 cases of naevus anemicus and 2 cases of piebaldism. The characteristics of dermoscopy and RCM were statistically analyzed using spss21.0. The percentages, composition ratios, and chi-square tests were used to describe and analyze the characteristics. The clinical significance of the two methods for the diagnosis of hypopigmented skin diseases in children was discussed.

**Results** The manifestations of dermoscopy in children with vitiligo include white background, neopigment island, perifollicular pigmentation and marginal hyperpigmentation. The main performances of amelanotic nevus are light white background and fuzzy boundary. The main performances of postinflammatory hypomelanosis are light white background, fuzzy boundary and a little of vascular structures. The main performance of pityriasis alba under dermoscopy are light white background, white scaly surface and fuzzy boundary. The main performances of tinea versicolor are pale background, linear vascular structure and white scales on the surface. The specific manifestations of reflectance confocal microscopy in children with vitiligo are partial or complete deletion of the pigmented ring on the basal cells. The pigment rings in the basal layer which markedly reduced is mainly exist in the vitiligo, sometimes can be seemed in the pigmented nevus and white pityriasis. The cuticle mycelium is specific in tinea versicolor under *in vivo* reflectance confocal microscopy. And nevus pigmented, postinflammatory hypomelanosis, pityriasis alba, two of which are identified by each other, the *in vivo* reflectance confocal microscopy can be identified. In the 300 cases, the number of the diagnosis with vitiligo by which has the partial or complete deletion of the basal layer of pigment compared with the number of diagnosis with vitiligo by which has more than two types manifestations of the four types manifestations including white and porcelain white background, pigment residue around hair follicles, pigment island, and marginal hyperpigmentation, there is a significant difference in the diagnosis of vitiligo between the dermoscopy and reflectance confocal microscopy ( $P < 0.001$ ).

**Conclusions** Dermoscopy and reflectance confocal microscopy can be used as means for the diagnosis and differential diagnosis of children with vitiligo and other hypopigmentation diseases. The accuracy of reflectance confocal microscopy in the diagnosis of vitiligo in children is higher than that in dermoscopy.

## PO14 Psoriasis

PO14-003

### **IL17F rs763780 polymorphism is associated with psoriasis and increases serum levels of interleukin-17F**

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**Background** Interleukin-17 (IL-17) plays an important role in the pathogenesis of psoriasis. In our previous study, we found a locus associated with psoriasis for the *IL17F* gene, one of the IL-17 family: *IL17F* rs763780 (His161Arg) T/C variant. This study aimed to elucidate the association between this *IL17F* polymorphism and psoriasis and to determine its effect on serum cytokine levels.

**Methods** A total of 116 patients with psoriasis who visited our dermatology clinic and 97 healthy volunteers were recruited. Genotyping was performed using quantitative polymerase chain reaction, and serum cytokine analysis was performed using a multiplex immunoassay.

**Results** The *IL17F* His161Arg variant was significantly associated with psoriasis based on both genotype (odds ratio = 2.2;  $P = 0.041$ ) and allele (odds ratio = 2.18;  $P = 0.032$ ) analyses. Psoriasis patients harboring the mutant allele had significantly increased serum levels of IL-17F ( $P = 0.014$ ).

**Conclusion** The results suggest that the *IL17F* His161Arg polymorphism increases the susceptibility of psoriasis through a direct effect of increasing IL-17F production.

PO14-004

### **A case of psoriasis vulgaris developed in an epidermolysis bullosa simplex patient**

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*National Medical Center*

Epidermolysis bullosa (EB) refers to a heterogeneous group of genetic skin diseases characterized by blistering triggered by minor trauma. Epidermolysis bullosa simplex (EBS) is the most common type of EB and shows a cleave plane at the level of basal keratinocytes. EBS is mostly inherited in an autosomal dominant fashion and approximately 75% of EBS cases are caused by mutations in the *KRT5* and *KRT 14* genes. A 48-year-old man visited our outpatient clinic presenting with erythematous plaques with silvery scale on his trunk, arms and legs and a blister on his foot. The lesions were aggravated 2 months ago. And he was diagnosed with epidermolysis bullosa 28 years ago. Skin biopsy assessment taken from the scaly plaque showed a parakeratosis, acanthosis, rete ridge elongation, subepidermal cleft in the epidermis and perivascular lymphocytic infiltration and neutrophil infiltration in the papillary dermis. And another skin biopsy specimen obtained from a blister revealed a subepidermal blister with infiltration of inflammatory cells composed largely of lymphocytes and eosinophils. He was treated with NB-UVB therapy and topical medication and the psoriatic plaques were improved. We report a rare case of psoriasis vulgaris occurred in an epidermolysis bullosa simplex patient.

PO14-005

### **Disseminated tuberculosis after adalimumab therapy in psoriasis patient**

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Recently, biologic therapy has become a major advance in the management of moderate-to- severe psoriasis.

Although the overall safety profile of biologics is favorable, primary infection or reactivation of latent tuberculosis (TB) is the major concern in the settings of tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ) inhibitor therapy. Individuals with latent TB infection (LTBI) at risk of developing active TB must be identified for appropriate prophylactic treatment. Herein, we describe a very rare case of disseminated TB in psoriasis patient during adalimumab therapy despite the chemoprophylaxis of TB. A 27-year-old woman has been treated with adalimumab due to psoriasis. As latent TB was detected by the QuantiFERON TB gold test before adalimumab therapy, she was treated with prophylactic isoniazid for 6 months. After 22 times injection of adalimumab, she visited emergency department due to fever and back pain for 2 weeks. Abdominopelvic computed tomography (CT) revealed multiple nodular lesions on the peritoneal wall, mesentery and spleen with ascites. In ascitic fluid, adenosine deaminase (ADA) was increased to 96.4U/L and mycobacterium tuberculosis grew in acid-fast bacilli culture. Chest CT also showed multiple nodular lesions on both lungs. She was diagnosed as disseminated TB. After stopping adalimumab and treating with conventional TB medication, symptoms were improved.

PO14-010

### **Beneficial effect of Montecatini thermal water upon various enzymes including NADH dehydrogenase in modulation of epidermal keratinization.**

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*MTG Co., Ltd*

**Background** Today, the curative use of thermal water at the medical centre of Montecatini Terme, Italy is operated with insurance coverage, and further research is needed to fully understand components of enriched mineral and its works by medical team. As a result, remarkable clinical studies have been conducted and it is proven the Montecatini thermal water is also effective on human skin problems such as psoriasis and atopic dermatitis. Meanwhile, further research on biological mechanism of epidermal keratinization is required more than ever. In this research, the influence to enzymatic mechanism on the epidermal keratinization by Montecatini thermal water was analyzed.

**Methods** Montecatini thermal water was applied on human face skin four times a day for four weeks. The subject's skin condition was assessed by enzymatic activity was measured using NADH dehydrogenase, which is one of the enzymes related to keratinization, and kallikrein-7 were extracted from those stratum corneum. At the same time, the enzyme activity of Caspase-14 was evaluated.

**Results** Montecatini thermal water increased water content of stratum corneum and enhanced the enzymatic activity of NADH dehydrogenase and Bleomycin Hydrolase present in stratum corneum. It turned out that it works for normalizing corneocytes exfoliation and retention of moisture level by the action of this enzyme activity.

**Conclusions** This result gives a new perspective on psoriasis treatment mechanism by Montecatini thermal water, which is related to improvement of the multilayer exfoliation state of the stratum corneum, and activation of NADH dehydrogenase and Bleomycin Hydrolase.

PO14-018

### **Good response to secukinumab in patient with palmoplantar pustulosis resistant to other biologics**

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Palmoplantar pustulosis (PPP) is characterized by sterile pustules with hyperkeratosis, erythema, scaling and fissuring on the palms and soles. PPP is a complex disease that is often recalcitrant to single-agent therapy. Biological agents are highly effective in moderate-to-severe psoriasis vulgaris, but only a few case reports have been published in support of their possible therapeutic efficacy in PPP. A 65-year-old man was diagnosed with severe PPP 10 years ago. Initial palmoplantar pustular psoriasis area and severity index (PPPASI) was measured as 51.6. Previous treatment interventions included topical steroids/calcipotriol fixed combination, narrow-band ultraviolet B therapy,

cyclosporine and combined oral acitretin, but all failed to provide improvement. To improve the current disease severity, we prescribed 45mg ustekinumab according to the psoriasis standard schedule. After 8 weeks of treatment with ustekinumab, 75% to 90% of the disease improved. Despite his initial response, the palmoplantar inflammation worsened again after 16 weeks. After 6-month of switching from ustekinumab to secukinumab, the patient obtained 90% clearance and has remained clear for more than 5 months. No adverse effects occurred. Herein, we report a case of PPP treated with secukinumab, which appears to be an effective and safe therapeutic option in PPP.

PO14-019

### A case of interstitial lung disease and autoimmune thyroiditis associated with ustekinumab

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Ustekinumab is a fully human, monoclonal antibody that binds to the interleukin (IL)-12/IL-23 p40 subunit. It has been increasingly used to treat moderate to severe psoriasis due to its effectiveness and safety profile. There are several reports of anti-TNF- $\alpha$  agent induced interstitial lung disease and autoimmune thyroiditis. However, there was only one case of interstitial lung disease associated with ustekinumab. Furthermore, ustekinumab induced autoimmune thyroiditis has not been reported yet. A 68-year-old woman presented with a 7-year history of psoriasis. She had been consecutively treated with methotrexate, cyclosporin and narrow band UVB (NB-UVB) for 2 years, however PASI score remained above 12. Then, ustekinumab was started and PASI score dramatically reduced to less than 4 after 3 injections. After 5 injections, the patient complained of dyspnea, so she was referred to a pulmonologist and chest CT was performed. The patient was diagnosed with interstitial lung disease and enlargement of thyroid gland was also found on chest CT. The patient was diagnosed with Graves' disease through further thyroid function tests including autoantibodies, thyroid ultrasonography and scanning. After discontinuation of ustekinumab, respiratory symptoms were improved and thyroid hormone levels were also normalized. These findings suggested that interstitial lung disease and autoimmune thyroiditis were associated with ustekinumab. Herein, we report a case of ustekinumab induced interstitial lung disease and autoimmune thyroiditis. As little is known regarding the mechanism of ustekinumab induced autoimmune diseases, further studies will be needed.

PO14-020

### Down-regulation of LncRNA RP6-65G23.1 inhibits cell proliferation by p-ERK/p-AKT pathway

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**Background** Long non-coding RNAs (lncRNAs) play an essential role in kinds of disease including skin disease. LncRNA-RP6-65G23.1 has been found upregulated in psoriasis. However, the expression pattern and regulatory mechanism in keratinocytes remained unclear.

**Methods** We detected the expression of RP6-65G23.1 in HaCaT cell treated with M5 by real-time PCR. RP6-65G23.1 was downregulated or upregulated using siRNA or lentivirus in HaCaT cell to explore whether it influenced cell proliferation and apoptosis by CCK8 assay and flow cytometry. Western blotting was added to examine the expression of some proteins associated with cell apoptosis and signalling pathway.

**Results** RP6-65G23.1 was significantly increased in HaCaT cell treated with M5 compared with untreated cell. Down-regulation of RP6-65G23.1 inhibits HaCaT cell proliferation and promotes cell apoptosis. The expression of Bcl-XL and Bcl2 proteins was decreased in RP6-65G23.1-down-regulated cells. The opposite result was observed in RP6-65G23.1-up-regulated cells. In addition, the expression of p-ERK and p-AKT were declined when RP6-65G23.1 was silenced, but AKT and ERK have no changes.

**Conclusions** These data suggested that LncRNA RP6-65G23.1 was involved in keratinocyte proliferation and apoptosis via regulating the expression of p-ERK and p-AKT. We speculate that RP6-65G23.1 may play an important role in pathogenesis of psoriasis.

PO14-034

**Development of pemphigus vulgaris in a patient with erythrodermic psoriasis: because of virus?**

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In this case, the 49-year-old man had a history of psoriasis for more than 20 years, after antibiotics and hydrotherapy steam therapy in another hospital, he appeared to cause high fever (above 39 degrees Celsius), erubescence. After admission, the patient presented with repeated uncontrollable hyperthermia, elevated eosinophils, atypical lymphocytes and promyelocytic cells in peripheral blood, lymphadenopathy, abnormal liver function, increased Epstein-Barr virus And cytomegalovirus antibody titers. Skin pathology examinations were performed twice within two months. The first time it met "psoriasis," the second showed epithelial blisters, DIF showed Interstitial acanthocyte IgG fluorescence deposition, IIF and Dsg1, Dsg3 were all positive, diagnosed as "pemphigus vulgaris" After combination therapy of methylprednisolone and mycophenolate mofetil, the patient was improved. So in conclusion, we consider the occurrence of drug hypersensitivity syndrome (DRESS) in patients with psoriasis, and then trigger autoimmune disease - pemphigus vulgaris. Psoriasis and pemphigus are different in the type of immune response, psoriasis is a typical TH1 type, while pemphigus TH2 type. It is currently believed that psoriasis with bullous disease is caused by UV therapy or high blood pressure medications, but at least one third of those who have been converted to pemphigus have not received phototherapy. So in this case, we hypothesize if viral infections and drug-induced DRESS provide intermediate effects? There are many reports of autoimmune diseases such as type I diabetes, autoimmune thyroiditis, SLE, Sjogren's syndrome, vitiligo induced by DRESS, so the role of virus in the disease process deserves further reflection and exploration.

PO14-044

**A case of generalized pustular psoriasis with incremental administration of infliximab and granulocytapheresis in response to weak effect of secukinumab**

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A 73-year-old man was diagnosed with pustular psoriasis psoriasis around 60 years old. Although he was treated with etretinate oral administration and prednisolone oral treatment, skin symptoms have deteriorated. After the treatment of sekinin mab was started, it became PASIclear once, but relapse of erythema was seen more than at the 7th administration, and administration was discontinued. Although it was relieved when it was changed to infliximab, since the erythema recurred gradually from the 4th dose, it was increased from the fifth time to 6 mg/kg and shortened to the interval of 4 weeks. Since there was no improvement trend thereafter, it changed to GCAP and lightened. Maintaining relief with infliximab 10 mg/kg increased in dosage to 8-week interval.

PO14-048

**Secukinumab decreases the serum KL-6 level in psoriasis patients with elevated serum KL-6 level**

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Tumor necrosis factor (TNF)- $\alpha$  inhibitors such as infliximab and adalimumab (ADA) have demonstrated dramatic efficacy for psoriasis, while several papers reported that TNF- $\alpha$  inhibitors induced interstitial pneumonia (IP) in

patients with rheumatoid arthritis. Furthermore, psoriasis patients receiving TNF- $\alpha$  inhibitors have an increased serum level of Krebs von den Lungen-6 (KL-6). Serum KL-6 is also elevated in patients with IP. To date, only one paper reported a psoriasis patient who developed IP while receiving an IL-17 inhibitor. We here retrospectively investigated the changes in serum KL-6 levels in psoriasis patients receiving SEC in addition to patients receiving ADA. In agreement with the previous literature, our data also demonstrated that psoriasis patients receiving ADA had significant increases in serum KL-6 levels at three months and six months after the start of treatment. In contrast, SEC significantly reduced the serum KL-6 level at three months and six months after the start of treatment in patients with elevated KL-6 level before treatment. Our results suggest that psoriasis patients with elevated serum KL-6 level may have slight pulmonary inflammation and/or fibrosis potentially induced by IL-17A, and that SEC may ameliorate it and reduce the serum KL-6 level by blockage of IL-17A.

PO14-051

### **Increased risk of atherosclerotic cardiovascular disease among the patients with psoriasis in Korea: a 17-year nationwide prospective cohort study**

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**Background** Psoriasis is a chronic inflammatory skin disorder which has been reported to be associated with cardiometabolic comorbidities in Caucasians. However, the association between psoriasis and risk of atherosclerotic cardiovascular disease (ASCVD) among Asians is largely unclear yet.

**Methods** Totally 1,733,620 Koreans who received health insurance from the National Health Insurance System and had a medical evaluation every two years between 1997 and 2000 were prospectively followed.

**Results** The point prevalence of psoriasis was 0.42% and 0.35% among Korean men and women, respectively and there was an age-dependent increase in psoriasis prevalence among men. In Cox proportional hazard analyses, the individuals with psoriasis had a higher hazard ratio (HR) for incidence of ASCVD (HR = 1.18 95% CI = 1.09-1.27) compared to controls during the observational period. The increased risk for ischemic heart disease was only observed among male psoriatic patients (HR = 1.33, 95% CI = 1.08-1.74), indicating that there are gender-dependent atherosclerotic comorbidities affecting Korean patients with psoriasis.

**Conclusion** In conclusion, psoriasis is associated with the long-term risk of ASCVD in Korean

PO14-054

### **Prevalence of nonalcoholic fatty liver disease diagnosed by ultrasonography in psoriasis patients with abnormal liver function test**

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**Background** Psoriasis is a chronic inflammatory disease mainly involving the skin and joints. Recent findings in psoriasis research have shown that psoriasis is not just a skin disease but frequently associated with systemic comorbidities. Several recent studies have indicated an increased prevalence of nonalcoholic fatty liver disease (NAFLD) among patients with psoriasis. However, it is difficult to examine ultrasonography for diagnosing NAFLD in all psoriasis patients who visit clinics. The purpose of this study was to determine the prevalence of NAFLD in a population of Korean patients with psoriasis and abnormal liver function test results.

**Methods** We evaluated the laboratory results of patients with psoriasis who visited the Department of Dermatology, National Medical Center, from September 2012 to March 2015. We selected patients with abnormal liver function test

results, and we consulted a hepatologist for the diagnosis of NAFLD.

**Results** In total, 251 patients with psoriasis took liver function tests, and 38 patients had abnormal liver function results. After abdomen ultrasonography, 27 patients had a diagnosis of NAFLD. Thus, 10.7% of psoriasis patients were diagnosed with NAFLD. All NAFLD patients had not abnormal liver function results. In the study of Abedini et al., among psoriasis patients with NAFLD, only 16.4% had abnormal liver function results.

**Conclusions** Although liver function results can be normal in psoriasis patients, such patients need to be carefully observed, and ultrasonography is recommended. If liver function results are abnormal in psoriasis patients, a hepatologist should be consulted, and ultrasonography should be examined for fatty liver.

PO14-001

### Pathological actors of surgical wound healing in psoriasis

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**Methods** We observed patients with psoriasis and skin neoplasms who received skin biopsy and a second excision surgery at the same place 1, 2 or 4 weeks later. Wound tissue obtained from the second surgeries were evaluated histopathologically and compared between psoriatic lesions and paraneoplastic normal skin.

**Results** The surgical wounds of psoriatic lesions showed earlier epithelial restoration. The surgical wounds of psoriatic lesions showed severer and longer inflammatory reactions, with more cells and less fibrous tissue within the wound bed. The granulation tissue of psoriatic wounds presented mucinous degeneration and blue stain in AB-PAS, indicating prominent glycoprotein genesis during the first 2 weeks of healing.

**Conclusion** Psoriasis has a better wound healing potent for quick wound closure and less fibrosis.

PO14-002

### Study on the role of RIPK3 in the pathogenesis of psoriasis

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**Background** Psoriasis is a chronic inflammatory dermatosis characterized by abnormal epidermal hyperplasia and inflammatory infiltration. RIPK3 is a member of RIPK family. In this research, we studied in the role of RIPK3 in the pathogenesis of psoriasis.

**Methods** *In vivo*, we collected human psoriasis lesions and constructed imiquimod-induced psoriasis model in wild-type mice. Western blot was used to detect protein expression levels of RIPK3. *In vitro*, we used M5 (IL-1a, IL-17a, IL-22, TNF-a and OSM) to stimulate HaCaT cell to construct the psoriasis model of cells. The mRNA and protein expression levels of RIPK3 and inflammation factors in the HaCaT cells were detected by q-PCR and Western blot respectively. We knocked down the mRNA expression levels of RIPK3 by siRNA, and detected the mRNA expression levels of inflammatory factors related to psoriasis.

**Results** The protein expression levels of RIPK3 in human and mice psoriasis lesions were increased. *In vitro*, the protein and mRNA expression levels of RIPK3 were all increased in psoriasis model of cells compared to the control group, and the mRNA expression levels of inflammation factors were increased to varying degrees. In siRNA-treated HaCaT cells, the mRNA expression levels of RIPK3 and inflammatory factors were significantly lower than those in control group.

**Conclusions** RIPK3 gene is abnormally expressed in psoriasis lesions and contributed to the inflammatory response by promoting the expression of inflammatory cytokines in the psoriasis model constructed by HaCaT cells.

PO14-006

**A case of inflammatory polyarthritis in a patient with psoriasis-psoriatic arthritis or rheumatoid arthritis**

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A 55-year old man was admitted in our hospital with the chief complain of erythema and scales over the body for 10 years, accompanied with multiple joint pains for 6 months. The erythema and scales were first found on his scalp 10 years ago. A few months later, similar lesions spread to the trunk, arms and legs, accompanied by severe itching. The patient's symptoms can be partially relieved by corticoid cream and body lotion, but the condition often relapsed during winter. The swelling and pain of wrist joints and hands started 6 months ago, and gradually involved his bilateral shoulders, knees and ankles. He was diagnosed as rheumatoid arthritis and given indometacin orally which reduced his arthralgia partially. Physical examination revealed multiple scaly erythematous plaques over his trunk and limbs, with negative Auspitz's sign. Swollen and painful joints were detected asymmetrically, involving his shoulders, wrists, knees and ankles. The lesion biopsy found epidermal acanthosis, hyperkeratosis, parakeratosis and Munro's microabscesses. The joints ultrasound showed both knees joints effusion, thickening of synovial hyperplasia of double wrist and right metacarpophalangeal joints. X-ray scanning showed osteoporosis of multiple joints, including bilateral shoulders, wrists, hands, and knees joints. Laboratory findings revealed most of serological indexes are positive, including ESR, CRP, RF, anti-CCP, anti-MCV. The AKA and HLA-B27 screening were negative. It is difficult to differentiate PsA from RA when the RF and Anti-CCP Ab are double positive. The patient with polyarthritis was eventually diagnosed with psoriatic arthritis other than rheumatoid arthritis.

PO14-007

**Intradermal and topical bioavailability of a vasodilator in normal and psoriatic skin**Yue Zheng<sup>1</sup>, Wei Lai<sup>1</sup>, Howard Maibach<sup>2</sup>*1. Department of Dermato-Venereology, The Third Affiliated Hospital of Sun Yat-sen University**2. Department of Dermatology, University of California San Francisco, San Francisco*

**Background** Epidermal and dermal differences in the skin of psoriatics compared with non-psoriatics and compared the bioavailability of a vasodilator, methylnicotinate, administered topically and intradermally (ID) to psoriatics and non-psoriatics subjects.

**Methods** Subjects were categorized into three groups: non-psoriatics (NP), involved skin of psoriatics (Pin) and uninvolved skin of psoriatics (Pun). The pharmacodynamic response (in MV) to the drug, measured by Laser Doppler Velocimetry (LDV), was used as an index of bioavailability. Skin blood-flow changes in eight psoriatics and seven non-psoriatics were also assessed. Area under the response-time curve (AUC) was the parameter used to describe the time course and extent of the pharmacodynamic response.

**Results** Topically, a significant difference ( $p < 0.02$ ) between AUC for NP when compared with both Pin and Pun was found, with values of  $5428 \pm 1504$ (NP),  $1131 \pm 452$  (Pin) and  $902 \pm 3524$ (Pun). Significant differences were not found between the two psoriatic groups. Intradermally, no significant differences were found between the groups. Furthermore, no significant difference in AUC was found by varying the mode of drug administration in NP or Pin, but there was a significant difference (Intradermal > topical,  $P < 0.03$ ) in Pun.

**Conclusions** The significantly higher topical (but not intradermal) AUC in NP over psoriatics suggested an apparent reduced topical bioavailability in psoriatics and an epidermal, rather than dermal (capillary), causality. The nonsignificant difference in both topical and intradermal AUC between Pin and Pun implied an apparent equivalency in the bioavailability of drug regardless of the route of administration or of the level of psoriatic involvement.

PO14-008

**IL-22 downregulates Cx43 expression and decreases gap junctional intercellular communication through activating JNK pathway in psoriasis**Jing-Yao Liang<sup>1</sup>, Ping-Jiao Chen<sup>2</sup>, Chang-Xing Li<sup>2</sup>, San-Quan Zhang<sup>1</sup>, Ru-Jun Xue<sup>1</sup>, Jian-Qin Wang<sup>1</sup>, Xi-Bao Zhang<sup>1</sup>

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The roles of interleukin-22 (IL-22) in the pathomechanism of psoriasis have been well demonstrated. Gap junctional intercellular communication (GJIC) is widely known for its involvements in multiple biological and pathological processes such as growth-related events, cell differentiation, and inflammation. To understand whether IL-22-mediated the pathogenesis of psoriasis is possibly through regulating GJIC, GJIC responses in the IL-22 induced conditions were studied *in vitro* and *in vivo* here. We found that IL-22 significantly decreased GJIC and down-regulated Cx43 expression in HaCaT cells, which can be partially blocked when cell line was pretreated with a JNK inhibitor SP600125, but not with NF- $\kappa$ B inhibitor BAY11-7082. Similar findings were observed in a mouse model of IL-22-induced psoriasis-like dermatitis. These results suggest that IL-22 suppresses GJIC through activating JNK signaling pathway that down-regulates Cx43 expression, a possible pathomechanism of cutaneous inflammation and keratinocyte hyperproliferation of psoriasis.

PO14-009

**Long-term safety and efficacy of continuous acitretin monotherapy for three children with different severe hyperkeratotic disorders in China**Jing-Yao Liang<sup>1</sup>, Ping-Jiao Chen<sup>2</sup>, San-Quan Zhang<sup>1</sup>, Xin Tian<sup>1</sup>, Xi-Bao Zhang<sup>1</sup>

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Long-term systemic treatment with acitretin for severe hyperkeratotic disorders is needed to maintain quality of life of afflicted patients, but treatment has been limited owing to its potential side effects including skeletal malformations, particularly for children during their growth and development. A retrospective investigation was conducted with three children afflicted with a severe hyperkeratotic disorder, namely Darier disease, bullous ichthyosiform erythroderma, or lamellar ichthyosis, who were continuously maintained on 0.2–0.3 mg/kg/day acitretin for more than 12 years after an initial period at a larger acitretin dose to bring each disease under control. The patients had good responses to acitretin treatment, which was assessed for safety, skeletal abnormalities, growth retardation, and other potential side effects. Acitretin monotherapy was an effective treatment for these children, and maintenance doses were well tolerated with no skeletal or other observable side effects during the course of the study.

PO14-011

**Waist-to-hip ratio) and body mass index: The comparison of the predictive value of the severity of psoriasis**

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**Background** People with psoriasis are more likely to get obesity than the normal population. A large number of observational studies have shown that psoriatic patients with obesity have higher risk to turn to severe, refractory psoriasis, and to get metabolic diseases such as hypertension or diabetes. However, previous studies have not determined an appropriate obesity-related index to predict the severity of psoriasis. This study aimed to examine the correlation between WHR, BMI and the severity of psoriasis, and to compare their predictive value for the severity of

psoriasis.

**Methods** A cross-sectional survey was conducted from October 2014 to March 2018 in Xiangya Hospital, Hunan province, China. 831/1078 patients were selected and consented to complete the questionnaire and physical examination for data acquisition. The correlation between WHR, BMI and Psoriasis Area and Severity Index (PASI), Body Surface Area(BSA) were analyzed through linear regression. Area under the ROC(AUC) was used to assess the accuracy of prediction in severity of psoriasis.

**Results** WHR had significant linear association and correlation with PASI and BSA ( $p=0.001$ ), while BMI had no relationship with PASI and BSA. The AUC of WHR and BMI in predicting severe psoriasis ( $PASI \geq 10$ ) was 0.590 (95%CI 0.548–0.632,  $p<0.05$ ) and 0.507 (95%CI 0.462–0.552,  $p=0.752$ ) respectively.

**Conclusion** Waist-to-hip ratio (WHR) has better predictive value for the severity of psoriasis compared to Body mass index (BMI).

PO14-012

### Microbiome community analyses identify propionibacterium and corynebacterium as psoriasis-specific taxa

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Microorganisms have been implicated in the pathogenesis of psoriasis. Here, we assayed cutaneous bacterial communities of psoriasis patients and individuals of Chinese population using high-throughput sequencing on the variable V3–V4 regions of 16S rRNA gene. Psoriatic lesions showed less taxonomic diversity and greater intragroup as well as intergroup variability compared with unaffected and control groups. There was an imbalance between *Propionibacterium* and *Corynebacterium* in psoriatic lesions. *Propionibacterium* exhibited less abundance in psoriatic lesions than unaffected and control groups; comparatively, increased *Corynebacterium* was observed in psoriatic lesions to unaffected and control groups. Receiver operating characteristic curve (ROC) analysis identified the ratio of *Corynebacterium* to *Propionibacterium* (CR/Pa+CR) as a signature for distinguishing lesion from unaffected and healthy control groups (AUC>0.70). Significant correlation was found between *Propionibacterium* abundance and abnormality of skin capacitance (CAP) as well as transepidermal water loss (TEWL); while *Corynebacterium* were associated with severity of lesions by PASI score. In summary, our findings presented profile of cutaneous microbiota in Chinese psoriasis patients and described the correlations of psoriasis-specific taxa with disease characteristics. Our work suggests a pathogenic role of microbiota in psoriasis, by interacting with disease microenvironment.

PO14-013

### A new risk polymorphism rs10403848 of CARD8 significantly associated with psoriasis vulgaris in northeastern China

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**Background** Caspase recruitment domain family member 8 (CARD8) is an adaptor molecule that negatively regulates nuclear factor- $\kappa$ B (NF- $\kappa$ B) activation, interleukin (IL)-1 $\beta$  secretion and apoptosis. These play important roles in the pathogenesis of psoriasis. Genetic variants of CARD8 have been associated with an increased risk of several inflammatory diseases and psoriasis in Europe. However, nothing is known about the association of the polymorphisms of CARD8 and psoriasis vulgaris (PsV) in the Han population of northeastern China. This study aimed to investigate the potential association of the genetic polymorphisms on CARD8 with the occurrence of PsV in the Han population of northeastern China.

**Methods** Four selected single nucleotide polymorphisms (SNPs) of CARD8 were genotyped using the improved multiplex ligation detection reaction (iMLDR) method. This was a case–control study with 540 cases and 612 healthy

controls. A model-based single SNP frequentist-test and haplotype association studies are performed to carry out the association between SNPs and PsV.

**Results** The additive model and the heterozygous model test of the intron SNP rs10403848 showed significant association with PsV (additive model  $P=0.0418$ ,  $P^*=0.0411$ ; heterozygous model  $P=0.0164$ ,  $P^*=0.0159$ ;  $OR=0.847-1.405$ ).

**Conclusions** We found that the polymorphism rs10403848 in CARD8 is significantly associated with PsV risk in the Han population of northeastern China. CARD8 may be involved in PsV in this population, as in the European population, but a different genetic process should be considered for the heterogeneity of risk loci.

PO14-014

### Circular RNA expression profile and analysis of their potential function in psoriasis

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**Background** Circular RNAs are evolutionary conserved circular non-coding RNAs that play a role in several diseases by sponging microRNAs. However, their role in psoriasis remains unclear. In the present study, we investigated the expression of circRNAs and analyzed their potential functions in psoriasis.

**Methods** The SBC human ceRNA array V1.0 was used to analyze circRNA expression in psoriatic lesions and normal skin tissues. Functional analyses were performed using Gene ontology (GO) and Kyoto Encyclopedia of Genes and Genomes (KEGG) pathway analysis. Putative miRNA response elements (MREs) were identified using miRNA target prediction software. Six upregulated circRNAs were verified by quantitative real-time reverse transcription polymerase chain reaction in psoriatic lesions and normal skin tissues.

**Results** A total of 4956 circRNAs (3016 upregulated and 1940 downregulated; fold change  $\geq 2$  and  $P < 0.05$ ) were identified as differentially expressed in psoriasis. Furthermore, 4405 MREs were identified among the differentially expressed circRNAs. hsa\_circ\_0061012 was upregulated in psoriatic lesions compared with normal healthy skin tissues. The top five MREs of hsa\_circ\_0061012 were hsa-miR-7157-5p, hsa-miR-4769-3p, hsa-miR-6817-5p, hsa-miR-4310, and hsa-miR-6882-3p. GO analysis was carried out to investigate the biological functions enriched among the upregulated targets of five miRNAs in psoriasis. The GO analysis identified that most of top 30 of GO enrichment are related to psoriasis.

**Conclusion** hsa\_circ\_0061012 might be a candidate biomarker for psoriasis. The results provide a new perspective for a better understanding of ceRNA-mediated gene regulation in psoriasis, and provide a novel theoretical basis for further studies on the function of circRNA in psoriasis.

PO14-015

### Depression and anxiety among patients with psoriasis: a hospital-based study

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**Background** Psoriasis is a chronic inflammatory skin disease and has been regarded as a comorbidity of many systemic diseases. It has been reported that psoriasis is associated with behavioral disorders; however, its association with psychological disorders has not been well understood. We investigated the association in a hospital-based study.

**Methods** The case of psoriasis was derived from in a prospective cohort study of patients with psoriasis established in 2015 and followed up in 2018 through questionnaire survey and clinical examination. The Patient Health Questionnaire (PHQ-9) and Generalized Anxiety Disorder Assessment (GAD-7) were employed to measure depression and anxiety. Psoriasis severity was evaluated by the Psoriasis Area and Severity Index (PASI).

**Results** The proportion of anxiety ( $GAD-7 > 5$ ) and depression ( $PHQ-9 > 5$ ) in patients with psoriasis was 33% for anxiety and 46% for depression. The severity of depression and anxiety were significantly associated with PASI

(Pearson's correlation  $r=0.353$  for depression and  $r=0.257$  for anxiety, both  $P<0.005$ ). After adjustment for demographic information (age, gender, educational level, and the average income), waist-to-hip ratio, and blood pressure, mental disorders were significantly associated with PASI (regression coefficients were 0.287 for anxiety and 0.361 for depression, both  $P<0.05$ ).

**Conclusion** The severity of psoriasis measured by PASI was significantly associated with the severities of anxiety and depression. For psychological morbidities, both psychiatric intervention and therapy towards psoriasis might be effective.

PO14-016

### **A randomized, double-blind, controlled clinical study on the curative effect of Huaier on mild-to-moderate psoriasis and an experimental study on the proliferation of Hacat cells**

Feng Zhang

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**Background** The anti-tumor effects of Huaier have been revealed. However, there is no research on the effects of Huaier on keratinocyte proliferation and for the treatment of psoriasis. To investigate the effect of Huaier and the underlying molecular mechanism.

**Methods** Hacat cells were treated with different concentrations of Huaier for different times. The effects on cell proliferation and on the cell cycle was detected. Patients with mild-to-moderate psoriasis were randomized and divided into two groups in a double-blind manner. The experimental group was administered sugar-free Yinxie granules and Huaiqihuang(HQH) granules, and the control group was administered sugar-free Yinxie granules and placebo. After 4 weeks, various therapeutic indexes were compared.

**Results** Huaier significantly inhibited Hacat cell proliferation, suppressed vitality, and blocked the cell cycle in the G1 phase compared with the control group ( $P < 0.01$ , respectively). After treatment for 4 weeks, there was no difference between the two groups in the number of patients that experienced a 50% reduction in the Psoriasis Area and Severity Index (PASI 50) or PASI 75. However, PASI 90 was significantly different ( $P < 0.01$ ). The body surface area (BSA) affected by psoriasis and static physician's global assessment (sPGA) was significantly reduced ( $P < 0.01$ ); additionally, a significant improvement in the Dermatology Life Quality Index (DLQI) ( $P < 0.01$ ).

**Conclusions** Huaier effectively inhibited the proliferation and vitality of Hacat cells and induced cell cycle arrest in the G1 phase. Huaier was effective for the treatment of patients with psoriasis. Huaier may represent a promising new anti-psoriasis drug.

PO14-017

### **Comparison of efficacy and factors affecting relapse after drug withdrawal of two biologics in treatment of moderate to severe psoriasis**

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**Background** To compare two biological agents adalimumab and ustekinumab in treatment of moderate to severe plaque psoriasis, in terms of efficacy, relapse rate after drug withdrawal and to analyze the possible association between demographic characteristics /clinical factors and drug effectiveness.

**Methods** (1) Comparison of therapeutic endpoints of two clinical studies of biologics in treatment of moderate to severe plaque psoriasis carried out in Department of Dermatology, Ruijin Hospital, Shanghai, China (2) follow-up at 12 weeks  $\pm$  7 days (3 m), 24 weeks  $\pm$  7 days (6 m), 36 weeks  $\pm$  7 days (9 m), 48 weeks  $\pm$  7 days (12m) after the drug withdrawal, severity of disease were assessed using psoriasis area and severity index (PASI) score and number of patients achieving PASI100, PASI90, PASI75 and PASI50 response rates at each visit were compared between biologics. (3) Analysis of the time to relapse after drug withdrawal for both biologics and its relation to the demographic and clinical features at baseline.

**Results** (1) At the end of treatment there were no significant differences in the PASI100, PASI90 and PASI75 response rates between the two biological agents. (2) However at 12, 24, 36 and 48 weeks after the drug withdrawal there was significant difference in the PASI75 response rate between the biologics, 74.51%, 39.22%, 17.65%, 9.80% respectively in adalimumab group whereas 100%, 84.21%, 68.42%, 31.58% respectively in ustekinumab group ( $P \leq 0.05$ ). (3) Analysis of drug effectiveness after drug withdrawal showed following relation with patient's clinical features: In ustekinumab group, type of skin lesion, previous psoriasis treatment, psoriasis worsen after stress, psoriatic arthritis and HTN were found to be associated with effectiveness outcome after drug withdrawal; whereas in the adalimumab group, we found that with prolonged withdrawal time, patient's loss of the corresponding PASI response were found to be related to the color of lesions, the degree of pruritus, BSA, and the previous psoriasis treatment.

**Conclusions** The efficacy of two biologics in treatment of moderate to severe plaque psoriasis is defined. At the end of treatment, the PASI75 response rate was 92.16% (adalimumab) and 100% (ustekinumab) respectively, no significant difference was seen; however after discontinuation of treatment, with prolonged drug withdrawal, the loss of PASI75 was more significant in adalimumab group than in ustekinumab group. Moreover after discontinuation of adalimumab the loss of corresponding response rates may be associated with color of lesion, degree of pruritus of the skin lesions, body surface area at baseline and previous psoriasis treatment; the loss of response rates at 48 weeks after the discontinuation of ustekinumab was lower compared to adalimumab, its loss of response rates were related to type of lesion, previous psoriasis treatment, psoriasis worsen after treatment, psoriatic arthritis and hypertension.

PO14-021

### Association of *NLRP1* and *NLRP3* polymorphisms with psoriasis vulgaris risk in northeastern China

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**Background** This study aimed to clarify the association between the single nucleotide polymorphisms (SNPs) in the *NLRP1* and *NLRP3* and Psoriasis Vulgaris (PsV) in northeastern China.

**Methods** We genotyped eight SNPs, four from *NLRP1* (rs8079034, rs11651270, rs11657747, and rs878329) and *NLRP3* (rs7512998, rs3806265, rs10754557, and rs10733113) each in 540 patients with PsV and 612 healthy controls in the Chinese Han population using an improved multiplexed ligation detection reaction (iMLDR) method. The genotype and haplotype frequencies were analyzed using a case-control study design.

**Results** We identified two SNPs, rs3806265 and rs10754557, in *NLRP3* that were significantly associated with PsV. The genotype distribution of the rs3806265 SNP was significantly different between cases and controls ( $p = 0.0451$ ;  $OR = 0.791$ ; 95%  $CI = 0.627-0.998$ ). In the recessive model, the genotype distribution of the rs10754557 SNP was significantly different between cases and controls ( $P = 0.0344$ ;  $OR = 1.277$ ; 95%  $CI = 0.987-1.652$ ). The haplotype analysis of rs3806265 and rs10754557 also presented a significant association of TA haplotype with PsV ( $\chi^2 = 4.529$ ;  $P = 0.033$ ).

**Conclusion** *NLRP3* may play a role in PsV susceptibility in the Chinese Han population.

PO14-022

### Expression and function of CGRP and 5-HT in the mouse psoriasis model with depression

Hong-Mei Wang, Hui Wang

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**Background** To investigate the expression and function of the neurotransmitter calcitonin gene-related peptide (CGRP) and serotonin (5-HT) in the serum and hippocampus of a mouse psoriasis model with depression.

**Methods** BALB/ c female mice were randomly divided into four groups, control group, psoriasis group, depression group, dual-mode groups (depression + psoriasis). Use the 5% Imiquimod Cream to establish the mouse model of

psoriasis and chronic mild unpredictable stress (CUMS) method to develop the mouse model of depression. Both methods were applied together to establish the dual-mode group. The mice were weighed, underwent sucrose water test, opening field test, forced swimming test, tail suspension test and behavioral experiments, to determine if the depression model was successfully established. The mice were killed after 21 days. Immunohistochemistry was performed to detect the mouse hippocampal CGRP. Enzyme-linked immunosorbent assay (ELISA) method was performed to detect the content of serum serotonin.

**Results** 1. Successfully established the mice model of psoriasis and depression. 2. Hippocampal CGRP expression: CGRP stain of hippocampal nerve cells showed positive results, while the psoriasis group showed significantly fewer cells with positive results. The depression group and the dual-mode group showed a negative result with CGRP stain, and with cells in disorder. Cells in depression group showed signs of pyknosis and under stained nucleus. 3. 5-HT expression: The expression of plasma 5-HT in the psoriasis group, the depression group, and the dual-mode group is higher than that of the control group. The plasma 5-HT expression in the dual-mode group is higher than that of the depression group. All differences among groups are statistical significance ( $P < 0.01$ ), which indicates the correlation between 5-HT expression and psoriasis.

**Conclusion** The neurotransmitter CGRP and 5-HT are essential factors in the pathogenesis of psoriasis. The emotional element - depression is affecting the development of psoriasis by these factors.

PO14-023

### Successful treatment of three cases refractory psoriasis with infliximab

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*The Second Hospital of Jilin University*

We reported three cases of refractory psoriasis with infliximab. Case 1: An 8-year-old boy presented with recurrent papules and pustules in the whole body accompanied by fever. The diagnosis was pustular psoriasis. Skin lesions and fever were improved after treatment with acitretin and methotrexate. But it caused elevation of hepatic transaminases. After two times treatment with infliximab, the skin lesions almost regressed. Complete regression was achieved after 3 times treatment with infliximab. Case 2: A 32-year-old male complained with a half-year history of psoriasis. The treatment effect of acitretin was not good. Ciclosporin induced hypertension. He achieved PASI 75 in 20 days after treatment with infliximab. The skin lesion was aggravated one month after the third treatment. So the fourth treatment was advanced a month. At present, the treatment is once every two months and he achieved PASI 95. Case 3: A 35-year-old male presented with a history of psoriasis for 12 years. He used to take nostrum and got arsenic keratosis. He took acitretin for two years, but the effect was not obvious. He refused to apply the immunosuppressant. The skin lesions almost regressed and he achieved PASI 75 within six weeks with infliximab. He was injected once every 3.5 months. Now, he achieved PASI 100 basically.

**Conclusion** Infliximab is effective in the treatment of pustular psoriasis. It is safe for children. 2. Therapy could be individualized. the interval of treatment and dosage should be dependent on personalized effect.

PO14-024

### Enhanced Cyr61 levels in patients with psoriasis vulgaris

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**Background** Cysteine-rich protein 61 (Cyr61), also known as CCN1, a multifunctional non-structural protein found in the extracellular matrix (ECM), is a pro-inflammatory cytokine, which can amplify inflammatory microenvironment by inducing TNF- $\alpha$ , IL-6 and IL-8 in many types of autoimmune diseases. This study is to investigate the association of Cyr61 in the pathogenesis of psoriasis vulgaris (PV).

**Methods** The serum levels of Cyr61 in patients with PV and controls were measured by ELISA. The mRNA expression of Cyr61 in PBMCs and skins from PV patients and controls were observed by Real-time PCR and

Immunohistochemistry. The CYR61 expression in HaCaT cells treated with EGF or PBS. The effects of Cyr61 on the expression of cytokines, such as IL-6, IL-17, IL-8, IL-4, IL10, IFN- $\gamma$  and TNF- $\alpha$ , were evaluated in PBMCs and CD4<sup>+</sup> T cells from PBMCs of PV patients.

**Results** Our data indicated that serum Cyr61 levels were significantly elevated in patients with PV when compared with those in atopic dermatitis (AD) patients and control group. Moreover, the expression of Cyr61 in PBMCs and skin from PV patients were also higher than those in control group. Furthermore, Cyr61 up-regulated the mRNA expression levels of IL-6, IL-17 and IFN- $\gamma$  in PBMCs from PV patients. In addition, Cyr61 enhanced the IFN- $\gamma$  and IL-17 expression on the CD4<sup>+</sup> T cells from PBMCs of PV patients.

**Conclusion** This study provides first observations on the association of Cyr61 and PV, and showed the elevated Cyr61 levels. We suggest that Cyr61 may play a role in the pathogenesis of PV.

PO14-025

### Enhanced serum interferon-lambda 1 interleukin-29 in patients with psoriasis vulgaris

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**Background** Interferon (IFN)- $\lambda$ 1, also named interleukin (IL)-29, is a new member of Type III IFN or IFN- $\lambda$  family. IL-29 plays an important role in the pathogenesis of many types of autoimmune and inflammatory diseases. This study aimed to study the role of IL-29 in the pathogenesis of psoriasis vulgaris (PV).

**Methods** We detected the serum levels of IL-29 in patients with PV and controls by sandwich enzyme-linked immunosorbent assay (ELISA). The effects of IL-29 on the expression of cytokines, such as IL-6, IL-17, IL-8, IL-4, IL10, interferon (IFN- $\gamma$ ) and tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ), in PBMCs and HaCat cells were determined by real-time quantitative PCR.

**Results** Our data indicated that serum IL-29 levels were significantly elevated in patients with PV when compared with atopic dermatitis (AD) patients and control group. Moreover, Serum levels of IL-29 were closely associated with the severity of PV. Furthermore, IL-29 up-regulated the mRNA expression levels of IL-6, IL-17 and TNF- $\alpha$  in PBMCs from PV patients. In addition, IL-29 enhanced the IL-6 and IL-8 expression from the HaCat cells.

**Conclusion** This study provides first observations on the association of IL-29 and PV, and showed the elevated IL-29 serum levels. We suggest that IL-29 may play a role in the pathogenesis of PV.

PO14-026

### A case of generalized verrucous planus lichen combined with thymoma and cirrhosis

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Patient was a 61 year old woman, The oral cavity repeatedly broke down, erosion and the pain of 5+ years, the whole body appear itch erythema, papules and plaques with 3 + years. The patient was diagnosed with thymoma five years ago, During the same period, the oral mucosa breaks down, and the wound is not easy to heal. After the operation of "thymoma", the rupture of the oral cavity is still occurring, the mucosa is slowly healed and then atrophy, and the appetite decreases. 3 + years ago in our hospital diagnosed as "cirrhosis of the liver (hepatitis b)", Gradually from the limbs to the whole body the size of the red spots, papules, plaques, accompanied by itching. Now we have a dermatoscope and histopathological diagnosis of "flat moss". After treatment with external glucocorticoid, the condition improved.

PO14-027

**Research progress of traditional chinese medicine treatment for psoriasis vulgaris**Wen-Zhao He<sup>1</sup>, Hua Du<sup>2</sup>1. *Gansu University of TCM*2. *The PLA Lanzhou General Hospital of Lanzhou military command*

Psoriasis is an immune-mediated polygenic hereditary systemic dermatosis, which is one of the most important diseases in the prevention and treatment of dermatological diseases because of its chronicity, repetitiveness and persistence. Chinese medicine called it "white peony", the clinical classification is common type, joint type, pustular type, red type. The typical lesion is scaly erythema. This article reviews the treatment principles of psoriasis vulgaris in the treatment of psoriasis in recent years.

PO14-028

**PD-1 targeted therapies rebalance T-cell activity to erect autoimmunity in psoriasis**Shiguang Peng<sup>1</sup>, Mei Cao<sup>1</sup>, Xin Li<sup>2</sup>, Hong-Shen Wang<sup>3</sup>, Sheng-Cai Qi<sup>4</sup>, Yan-Ling He<sup>1</sup>1. *Department of Dermatology, Beijing Chao-yang Hospital*2. *Department of Dermatology, Yueyang Hospital of Integrated Traditional Chinese and Western Medicine*3. *Department of Orthopedic, Longhua Hospital Longhua Hospital*4. *Department of Oral and Maxillofacial Head and Neck Oncology, Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine*

**Background** Inhibition of the programmed cell death 1 (PD-1) immune checkpoint receptor on autoreactive T-cells can aggravate psoriasiform dermatitis, but the precise molecular mechanisms through which PD-1 blockade exacerbates psoriatic inflammation are incompletely understood. This study aimed to investigate how PD-1 pathway regulate psoriatic inflammation and contribute to psoriasis development.

**Methods** We used human samples and murine models to characterize PD-1 as a prominent regulator of psoriatic inflammation and demonstrate that PD-1 repression is a crucial step in psoriasis development.

**Results** PD-1-Fc clustering with Keratin 13 (K13), which has been identified as an autoantigen in some psoriasis patients. By analysis psoriatic lesion from mouse model and co-culture assay, the PD-1-Fc treatment has been showed to significantly repress  $\gamma/\delta$  T Cells activation.

**Conclusion** Our results suggest a potential therapeutic treatment for psoriasis with PD-1-Fc through inhibiting psoriatic  $\gamma/\delta$  T Cells activation

PO14-029

**Efficacy and safety of infliximab in the treatment of the Chinese patients with psoriasis**

Jin-Zhu Guo, Wen-Hui Wang, Chun-Lei Zhang

*Peking University Third Hospital*

**Objective** To analyze the clinical efficacy and safety in the Chinese patients with psoriasis treated with infliximab.

**Methods** All treated inpatients at the Dermatology Department of Peking University Third Hospital were reviewed. The types of psoriasis, PASI score and clinical response were analyzed. Infliximab was given 5 mg/kg intravenous infusion at weeks 0, 2, and 6, followed by maintenance infusion every 8 weeks.

**Results** From 2015 to 2017, 27 of 98 cases of inpatients with psoriasis in our Department were treated with infliximab, including 18 males, 9 females, aged 21-71 (40.6 $\pm$ 13.7) years old. The history of psoriasis is 0.4-40 (17.6 $\pm$ 9.9) years. Twenty-two cases were plaque psoriasis, including 14 males and 8 females. The baseline PASI was 2.4-46.7 (19.0 $\pm$ 11.4). The plaque psoriasis baseline PASI was 2.4-46.7 (17.8 $\pm$ 10.7). Most patients received 3 to 7

times of infusion. Fourteen patients including 11 plaque psoriasis strictly accorded to the therapeutic schedule before 14 weeks. In all 14 at least 14 weeks therapy strictly accorded to the therapeutic schedule, the average PASI score declined from 18.7 to 2.7 at the 14th week. The percentage change from baseline in PASI reached 81 at the 14th week. In 11 plaque psoriasis at least 14 weeks therapy strictly accorded to the therapeutic schedule, the average PASI score declined from 16.7 to 1.8 at the 14th week. The percentage change from baseline in PASI reached 81 at the 14th week. 37% patients reached PASI 90, 55.5% patients reached PASI 75, 77.7% patients reached PASI 50. One aggravated and one not according to the therapeutic schedule before 14 weeks. Two patients could always keep PASI 90 for 10 months and 17 months. Seven patients could always keep PASI 75 and 16 patients including 13 plaque psoriasis could always keep PASI 50. One rebound after 6 months without any treatment. Six cases including 5 plaque psoriasis relapse, the improvement in the PASI score fell below 50% from the baseline PASI score. No one rebound in 3 months. Six of twenty-seven (22.2%) patients had adverse reactions such as aggravation, dizziness, shortness of breath, cold sweat, blood pressure decline, mild head distending pain, herpes zoster, slight chest distress, shortness of breath, low-grade fever. There were no severe adverse reactions.

**Conclusion** Infliximab has a good clinical response and is relatively safe in the treatment of the Chinese patients with psoriasis.

PO14-030

### Advanced findings of proteomic in psoriasis

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Psoriasis is a complex autoimmune disease with multiple genes and proteins involved in its pathogenesis. The global prevalence of psoriasis is approximately 0.09% to 11.43%. Psoriasis seriously harmed the life quality of patients, who are more likely with arthritis. Although researches on the pathogenesis of psoriasis have developed a lot, psoriasis has not been cured so far. Clinical therapies can only temporarily relieve symptoms in most cases. There is a big difference in response rate and efficiency of different treatments for patients. What's worse, gradually effective treatment may lose efficacy due to treatment resistance. Therefore, it is urgent to understand pathogenesis, to discover prognosis biomarkers and potential therapeutic target.

In recent years, more and more omics studies developed in psoriasis. The complex and delicate network regulations of psoriasis are revealed by genomics, transcriptomics, proteomics, and metabolomics. Sevimoglu et al. newly discovered and verified that the Elafin, PC4 and WIF-1 proteins are involved in the development of psoriasis through correlation analysis of genomics-transcriptomics. Through transcriptomic-proteomic correlation analysis skin tissues, Swindell et al revealed shifts in mRNA and protein abundance show modest correlation in the comparison between psoriasis lesions and uninvolved skin, discovered a large number of ribosomal proteins are differentially expressed proteins (DEPs). Schonhaler et al. performed proteomic analysis of psoriatic epidermis tissue by iTRAQ, found 214 DEPs, including the newly discovered S100A8 and S100A9 proteins that were highly expressed in the psoriatic epidermis, and elucidated the S100A8-S100A9 protein complex plays a role in psoriasis by regulating the expression of complement factor C3. Through high-throughput proteomic analysis of skin psoriasis patients without PsA (PsC) and PsA psoriatic skin tissue, newly discovered ITGB5 and POSTN can be used as early biomarkers for the diagnosis of PsA, and validated in serology as well. Proteins are the functional executors of gene. Proteomics studies in psoriasis help understanding the pathogenesis of psoriasis, and in particular provide a better explanation of the complex role that inflammatory pathways play in psoriasis, predict directions for targeted therapy. However, the current proteomics of psoriasis (including proteomics of circulatory and local tissue) still requires a lot of in-depth information mining and basic researches.

PO14-031

**MiR-20a-3p regulates TGF- $\beta$ 1/Survivin pathway to affect keratinocytes proliferation and apoptosis by targeting SFMBT1 in vitro**

Rong-Hua Li

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**Background** Evidence is rapidly accumulating for the role of microRNAs in psoriasis. Interleukin-22 (IL-22) plays vital role in T cell-mediated immune response by interacting with keratinocytes in the pathogenesis of psoriasis. The aim of our study was to explore the possible functional role of miR-20a-3p in psoriasis and in IL-22 induced keratinocyte proliferation.

**Methods** MiR-20a-3p mimics and inhibitor were transiently transfected into HaCaT cells to increase or decrease expression of the miRNA. CCK8 assay and 5-Ethynyl-2'-deoxyuridine (EDU) incorporation assay were used for cell proliferation. Annexin fuorescein isothiocyanate/propidium iodide assay was performed to detect cell apoptosis.

**Results** We found that miR-20a-3p was down-regulated in psoriatic lesions and in HaCaT cells (human keratinocyte cell line) treated by IL-22 stimulation. Functional experiments showed that overexpression of miR-20a-3p in HaCaT cells suppressed proliferation and induced apoptosis while its knockdown promoted cell proliferation and reduces cell apoptosis. Mechanistically, SFMBT1 was identified as the direct target of miR-20a-3p by dual luciferase reporter assay. SFMBT1 knockdown was demonstrated to inhibit cell growth and induced apoptosis, which was consistent with the function of miR-20a-3p upregulation in HaCaT cells. In addition, results of western blot analysis showed that miR-20a-3p upregulation or SFMBT1 knockdown changed the protein expression levels of TGF- $\beta$ 1 and survivin.

**Conclusions** Our findings suggest that miR-20a-3p play important roles through targeting SFMBT1 and TGF- $\beta$ 1/Survivin pathway in HaCaT cells, and loss of miR-20a-3p in psoriasis may contribute to hyperproliferation and aberrant apoptosis of keratinocytes.

PO14-032

**Investigation of the clinical and immunological characteristic of eczematous psoriasis**

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**Background** To analyze clinical manifestations of eczematous psoriasis(EP), to investigate the roles of multiple cytokines and B cell subsets in eczematous psoriasis.

**Methods** Six patients diagnosed eczematous psoriasis enrolled in the study, with 16 psoriasis vulgaris (PSV) and 8 atopic dermatitis (AD) as control groups. Electrochemistry was used to detect IL-1 $\beta$ , IFN- $\gamma$ , IL-4, IL-5, IL-13, IL-17A in the peripheral blood as well as in urine samples of the patients, PBMC (peripheral blood mononuclear cell) was desected by eleven-color cytometry immunoglobulin, CD19 and CD20 recognized as markers of B cells and IgD, CD27, CD24, CD38 were selected as markers to distinguish B cells based on phenotypes. Immunohistochemistry was used to detect B cell expression in the skin.

**Results** We found that there was significant difference in expression of serum IL-17A, IFN- $\gamma$  between EP and psoriasis vulgaris. Expression of these cytokines was not increased in EP, when Serum IL-4, IL-5 levels in eczematous psoriasis patients were significantly lower compared with psoriasis vulgaris. The expression of urine IL-5 in eczematous psoriasis was significantly higher in EP than those in AD as well as psoriasis vulgaris. And the expression of IL-13 was significantly lower in EP patients than those in AD patients. There was no difference among EP, AD and PSV found in the expression of IL-17, IL-4 and IL-1 $\beta$  in urine and IFN- $\gamma$  was not detected in urine. Proportion of CD19+ cells in peripheral blood was significantly lower in EP than in AD group, while the difference between PSV and AD was relatively more significant. Meanwhile, there was a significantly increase of CD20+ cells in skin lesions of EP patients, but there was no difference in B cell phenotypes.

**Conclusions** Cell balance of eczematous psoriasis is switched from Th1 to Th2, inducing increase of IgE or EOS in eczematous psoriasis, causing eczema-like change. To sum up, we may hypothesize that B cells play an important role in the pathogenic mechanisms of eczematous psoriasis.

PO14-033

**A case of psoriasis rupioides**

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**Background** Psoriasis rupioides is a rare kind of psoriasis which is characterized by erythematous with brownish-yellow crusts and looks like oyster shell. Ostraceous, rupioid, elephantine are the three kinds of hyperkeratotic types of psoriasis. We report a patient of psoriasis rupioides who was cured successfully by our treatment.

**Methods** The patient had a long history of psoriasis and the lesions aggravated and covered by the crusts after irregular treatment. He received standard treatment.

**Results** The lesions resolved completely with one month of treatment and there is no recurrence observed during the follow-up. Most of the hyperkeratotic types of psoriasis are generally resistant to topical therapy. The patients who is resistant to topical steroids could consider using immunosuppressive agents or biological agents.

**Conclusion** We suggest that the response to topical treatment is largely influenced by patient compliance.

PO14-035

**Local production of prolactin in lesions may play a pathogenic role in psoriatic patients and imiquimod-induced psoriasis-like mouse model**Hui Yang<sup>1</sup>, Xia Li<sup>1</sup>, Feng Xue<sup>2</sup>, Qun-Li Xia<sup>1</sup>, Xin Zhao<sup>1</sup>, Di-Wang<sup>1</sup>, Li-Hong Chen<sup>1</sup>, Hua Cao<sup>1</sup>, Han Xu<sup>1</sup>, Xiao-Yan Shen<sup>1</sup>, Wei-Ru Yuan<sup>1</sup>, Xiao-Qing Zhao<sup>1</sup>, Ruo-Fei Shi<sup>1</sup>, Jie Zheng<sup>1</sup>

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Human prolactin (PRL) is a well-known hormone for pituitary of lactation and reproduction, but it also has immunostimulatory effect in some inflammatory or autoimmune diseases including psoriasis, which has not been well elucidated. This study aimed to determine the relationship between PRL and psoriasis through clinical case-control studies, and explore the role of PRL in the pathogenesis of imiquimod (IMQ)-induced psoriasis-like mouse model. Serum from patients with psoriasis vulgaris (PsV), patients with erythrodermic psoriasis, and healthy controls (HCs) were collected for PRL test. Skin biopsies were collected for PRL, PRL receptors, cytokines mRNA level determination, PRL immunohistochemistry and PRL western blotting. Mice were divided into 4 groups: control group (CON), IMQ group, anti-PRL group and solvent group. Anti-PRL group and solvent group mice were treated with PRL antagonist and the solvent separately. Serum PRL level of PsV patients was higher than that of HCs ( $P < 0.001$ ). Compared with HCs, the mRNA levels of PRL and Th1/Th17 cytokines in skin lesions increased significantly ( $P < 0.05$ ), the PRL protein level was also significantly elevated in the epidermis and dermis of PsV patients. In psoriasis-like mouse model, the mRNA and protein levels of PRL in skin lesions were higher than CON group ( $P < 0.01$ ). Comparing to solvent group, serum PRL level, PRL and cytokines mRNA levels in lesions all decreased and skin inflammatory condition was alleviated significantly in anti-PRL group. This study suggests that local production of PRL is the main resource of PRL in lesions and may play an important role in psoriasis.

PO14-036

**Observation of the clinical efficacy in long-term infliximab treatment of psoriasis**

Xin Guan, Chun-Lei Zhang

*Peking University Third Hospital*

**Background** Psoriasis is a common chronic inflammatory skin disease affecting roughly 0.123% of the Chinese population. Tumor Necrosis Factor- $\alpha$  (TNF- $\alpha$ ) was found to play a key role in psoriasis development by triggering an immune response on the skin. Infliximab is a monoclonal antibody that blocks TNF- $\alpha$ . We sought to analyse the therapeutic efficacy of long-term infliximab treatment in patients with psoriasis.

**Methods** Psoriasis Area and Severity Index(PASI) scores were collected in 12 patients with moderate to severe plaque psoriasis treated with infliximab between March 2016 and January 2017.

**Results** Nine patients adhere to infliximab therapy for more than 1 year. 1 patient with PASI below 50, 2 patients with PASI50 and 2 patients with PASI 75, 3 patients with PASI90 and 1 patient with PASI100. 1 patient was aggravated with fever and pustules after 2 rounds of medication and the treatment ceased, 1 patient was dissatisfied with the curative effect and 1 patient had a transient wind reaction after the seventh infusion and stopped the treatment.

**Conclusions** The long-term infliximab treatment has a good clinical remission rate for psoriasis. However, some patients aggravated with fever or pustules. Considering the small sample size, further study is needed in the future.

PO14-037

**Progress of psoriasis and PD-1 correlation research**

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Psoriasis is a common immune-mediated disease, related to many factors such as heredity and metabolism. Its pathogenesis is still unknown at present. Nowadays, more and more researches prove that PD-1(Programmed cell death 1), which works as immune receptor expressed on the surface of T cells, plays an important role in psoriasis inflammation. Its ligand PD-L1 also expresses in psoriatic epidermis and it is closely related to the disease. This review mainly summarizes the pathogenesis of psoriasis and the progress of its corresponding treatment from the PD-1 signaling pathways.

PO14-038

**Study on the relationship between the TCM four diagnosis methods and the curative effect of psoriasis based on the four-element connection number**

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**Objective** To research the relationship between curative effect and the TCM treatment based on syndrome differentiation of "Observation, auscultation, interrogation and palpation" in psoriasis treatment ,and to investigate the applications of the four-element connection number coefficient.

**Methods** Firstly, mate the curative effects "recovery", "efficiency", "better" and "invalid" with "same", "partial same", "partial reverse" and "reverse" in the four-element connection number coefficient in set pair analysis theory, and establish four-element connection number of the curative effect of 16 TCM syndromes; Secondly, calculate the third order partial connection number in the four-element connection number coefficient of each curative effects. Give

ranks to each syndrome-related curative effects, from big to small, according to the partial connection number. In that case, a prior rank usually shows a better curative effect. Then put this rank in comparison to each syndrome of "total valid/invalid". If they rank the same, we define them as "same". If their ranks are quite close, then we define them as "partial same". If their ranks are relatively far, they are defined as "partial invalid". If their ranks are far apart, we define them as "invalid". Last but not least, combining with each syndrome dialectical medication situation, analyze the cause of similarities and differences between these two ranks.

**Results** Insomnia syndrome ranks the same in this two ways, both ranking 6, explaining that drug using on insomnia syndrome has its universality; Sweat reducing, thin coating of tongue, white coating of tongue, slippery pulse and string pulse belong to "reverse", since these five syndromes all rank differ from 8 to 11. It illustrates drug using on these syndromes with disease suits for a part of patients, not for all the patients to some extent. The two ranks of the remaining 9 syndromes differ from 1 to 4, which means drug using on these 9 syndromes can achieve a better therapeutic effect for different patients.

**Conclusions** Correct TCM four diagnostic methods including observation, auscultation, interrogation and palpation, along with its information processing technique can help to improve the effect of psoriasis treatment. The four-element connection number coefficient can be used for quantitative research of the relationship between observation, auscultation, interrogation and palpation syndrome and curative effect.

PO14-039

### Research progress of psoriasis and PRINS lncRNA correlation

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Psoriasis is a common immune-mediated disease associated with genetic, metabolic and other factors, and its cause is not clear yet. Psoriasis is characterized by significant scale, erythema and pruritus, even burning pain and other symptoms, seriously affects the patients' quality of life. So it has been listed as one of the twenty biggest problems in the United Nations health organization. The incidence of the disease has increased year by year, from 0.12% in 1984 to 0.72% in recent years. Lately, there is a growing number of studies shown that PRINS lncRNA, as a new type of long chain non-coding RNA, has high reactivity in psoriasis skin without damage. What's more, it participates in the signal transmission of G1P3 and the regulation of NPM protein, which can adjust inflammatory mediators and plays an important role in chronic inflammation. This review mainly discusses PRINS lncRNA and its functions in the pathogenesis of psoriasis and its research progress.

PO14-040

### Sexual function in psoriatic males

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**Background** Sex hormones may play a major role in psoriasis pathogenesis due to their biological and immunological effects on skin. Psoriasis also has a significant impact on patients' sexual function and thus their quality of life. In the present study we investigated serum sex hormones and erectile function in male psoriasis patients compared with healthy controls and correlated these findings with various disease parameters.

**Methods** Serum total testosterone and estradiol were measured by an ELISA technique in 50 male patients with psoriasis and 30 healthy controls. The erectile function of all subjects was assessed by the international index of erectile function version-5 (IIEF-5).

**Results** Patients with psoriasis showed significant lower serum level of total testosterone, higher level of estradiol and impaired erectile function relative to healthy controls.

**Conclusion** The detected hormonal disturbance in psoriasis male patients may be a cause of the associated erectile dysfunction beside the known effect of chronic systemic disease on patients' erectile function.

PO14-041

**Microbiota unbalance deteriorated psoriasiform dermatitis by T cell response**

Jing-Wen Deng, Ling Han, Chuan-Jian Lu

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Psoriasis is an immune-mediated inflammatory skin disease characterized by well-delineated red, scaly plaques, which affects approximately 2% of the world's population and has pathogenic effects with systemic impact. Environmental factors seem to induce psoriasis and affect its progression in individuals with underlying genetic susceptibility. Recently, the critical involvement of microbiota in inflammatory immune-mediated diseases is gaining attention. But influence of microbiota on psoriasis is incompletely understood. Here, we show here that BALB/c mice treated with amoxicillin which targeted Gram-positive bacteria deteriorated psoriasiform dermatitis induced by imiquimod, with increased IL-17 and TNF- $\alpha$  secretions by T cells. These findings suggest that gut microbiota impact imiquimod-induced psoriasiform dermatitis by altering the T cell response.

PO14-042

**Clinical application of Etanercept (Yisaipu®) to treat 5 patients with severe psoriasis**

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**Objective** To explore the method, efficacy and safety of application of Etanercept (Yisaipu®) to treat patients with severe psoriasis vulgaris in clinical practice.

**Methods** We applied etanercept (Yisaipu®) to treat 5 cases of severe psoriasis vulgaris in different conditions, with different dose and time interval, or combined with other medicine. The effectiveness and safety of patients are observed.

**Results** Case 1 was a middle-aged men with severe psoriasis vulgaris with arthropathica. When he had finished 24-weeks' adalimumab clinical trial with complete remission, etanercept was used as maintenance treatment for more than 4 years with satisfied disease control and without obvious adverse reaction(PASI score dropped more than 90%). Case 2 was a young female patients with severe psoriasis vulgaris. When she had used MTX for maintenance treatment for 3 years and the efficacy became poor, she transfered to receive 12 weeks' etanercept 50mg/w treatment and obtained satisfactory curative effect with no adverse reaction(PASI score dropped more than 75%). Case 3 was a young male patients with severe psoriasis vulgaris. Due to abnormal liver function, etanercept 100mg/w was applied for 12 weeks and the patient achieved complete remission with no adverse reaction (PASI score dropped more than 90%). Case 4 was a young male with severe psoriasis erythrodermic. When he had used acitretin treatment for 8 weeks with poor efficacy, etanercept 50mg/w was added to combine with acitretin for his treatment and obtained complete remission with no adverse reaction(PASI score dropped more than 90%). Case 5 was a middle-aged male patient with severe psoriasis arthropathica, recent hepatitis B virus latent infection, hypertension and renal insufficiency. When he discontinued a long-term use of acitretin and MTX combination therapy, etanercept 50mg/w was used for 2 weeks to successfully relieve the swelling pain and joint pain of lower extremity without any adverse effects on liver and kidney function(NRS decreased from 5 to1).

**Conclusions** In clinical practice, the application of Etanercept (Yisaipu®) with different dose and time interval, or combined with other medicine, can treat severe psoriasis patients in different conditions and can obtain well effect and safety.

PO14-043

**A young man with recurrent cough, fever, skin rash, headache, muscle and joint pain: SAPHO syndrome involving lung and dura mater**

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A 24-years male patient complained of recurrent cough, fever, skin rash, joint and musculoskeletal pain for 12 months. Sixteen months ago, the patient noted the onset of frontal-temporal headache with local swelling and fever. The skeletal scintigraphy showed abnormal accumulations in the lateral frontal and left temporal bone. He got partial response after taking antibiotics and NSAIDs three weeks later. In the past 12 months, he was admitted to hospital several times for recurrent cough, fever and joint pain. He was diagnosed as pneumonia based on the CT scan of patchy and nodular high density shadow on the left hilar region and posterior basal segment of lower lobe of left lung. He has a poor response to NSAIDs, antifungal agents and antibiotics and relapsed frequently in diverse degrees. He was referred to dermatologic department for recurrent palmoplantar pustules for 1 year and cellulitis on his left dorsum pedis for 1 week. The patient was febrile. Dermatologic examination revealed discrete, nonfollicular pustules on the palms and soles. There was a localized redness and swelling with tenderness in the right 5th metatarsal area. Blood routine test showed leukocytosis with mainly neutrophils. Skin biopsy from pustules revealed spongiform intraepidermal pustules and perivascular inflammatory infiltrates in the upper dermis. Skin biopsy from metatarsal area showed lobular panniculitis. Histologic findings from left main bronchial wall showed inflammatory infiltration with predominant neutrophils on mucosal lamina propria. Repeated microbiologic studies of the pustules, bronchial secretion, blood and biopsy tissues were all unrevealing. Repeated skeletal scintigraphy revealed intense uptake at the sternoclavicular, acromioclavicular, sacroiliac and several peripheral joints, sternum, middle of left fibula and the right 5th metatarsus.

The key clinical features are recurrent osteoarticular manifestations, palmoplantar pustulosis, fever, cough and local swelling over the affected areas mimicking cellulitis. The present case fulfilled SAPHO syndrome's diagnostic criteria described by Benhamou. SAPHO syndrome commonly involved the anterior chest, however spine, articulation sacroiliaca, peripheral arthritis as well as skull and dura mater involvement have also been reported. Aseptic bronchopneumonia, another characteristic manifestation in this case, was also identified to be associated with SAPHO syndrome for repeated negative microbiologic culture, similar microscopic appearance (neutrophils infiltration in mucosa) to the skin biopsy and poor response to antimicrobial agents treatment. Anti-inflammatory drugs such as nonsteroidal anti-inflammatory drugs (NSAID) and corticosteroids (intra-articular or systemic) are the most effective agents. Palmoplantar pustules, joint and musculoskeletal pain and fever disappeared 1 week after 40mg methylprednisolone was prescribed. Cellulitis-like lesion subside gradually in 2 weeks. Persistent cough and opacities in the lung parenchyma by CT scan decreased or disappeared 1 month later. Five to ten mg MTX was added in order to taper the dosage of corticosteroid. The patient is still in follow-up and no relapse was observed.

PO14-045

**Enhancement of Epidermal Function Delays Relapse of Psoriasis: A Pilot Self Controlled Trial**Li Ye<sup>1</sup>, Jeong Sekyoo<sup>2</sup>, Jongmi Lim<sup>3</sup>, Wenhai Luo<sup>4</sup>, Chengzhi Lv<sup>1</sup>, Zhen Wang<sup>5</sup>, M. Elias Peter<sup>6</sup>, Mao-Qiang Man<sup>6,7</sup>

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**Background** While psoriasis is generally considered as an immunological disorder, a pathogenic role of epidermal dysfunction is also well appreciated. We hypothesized that enhancing epidermal function could prevent relapse of

psoriasis.

**Methods** Two cohorts included 30 and 60 subjects, respectively. All subjects were in remission and with a history of psoriasis on both forearms for 2+ consecutive years prior to trials. One cohort was treated topically with an in-house-prepared emollient twice-daily to one forearm for 20 days while the contralateral arm was left untreated. One arm of the other cohort was treated topically with a commercial cream twice-daily for 30 days. Based upon each patient's history, treatment was started  $\approx 10$  days prior to expected lesion appearance. Epidermal function on both arms was assessed prior to and at the end of the trials.

**Results** In the first cohort, 55% of patients experienced delayed appearance of lesions during the trial. In the second cohort, 71% of patients showed delayed appearance of lesions during the trial. The preventive benefits of emollients correlated with improvements in epidermal function. The time of psoriasis relapse correlated with the extent of abnormalities in baseline epidermal function.

**Conclusion** Enhancement of epidermal function can prevent /attenuate the development of psoriasis.

PO14-046

### Urine squamous cell carcinoma antigen in psoriasis patients: the first pilot study

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**Background** This is the first pilot study to explore the level of urine squamous cell carcinoma antigen (SCCA) in psoriasis patients and its relationship with disease severity.

**Methods** Totally 15 psoriasis patients were treated with adalimumab. At different visits before and after treatment, quantitative body surface area (qBSA) was obtained from standardized digital body images of the patients, and psoriasis area severity index (PASI) was also monitored. Urine squamous cell carcinoma antigen (SCCA) was detected by using Microparticle Enzyme Immuno Assay. The urine SCCA was also tested in 20 healthy volunteers as normal control.

**Results** The urine SCCA level in the normal control group was  $11.7 \pm 25.1$  ng/ml, and was lower in the male than in the female control group ( $0.5 \pm 0.4$  ng/ml vs.  $19.1 \pm 20.8$  ng/ml,  $P < 0.05$ ). The urine SCCA level in psoriasis group was significantly higher than in the normal control group ( $31.2 \pm 22.9$  ng/ml vs.  $11.7 \pm 25.1$  ng/ml,  $P < 0.05$ ). A slightly higher but non-significant urine SCCA level was observed in the female psoriasis patients (vs. male patients,  $P > 0.05$ ). However, after treatment, the serum SCCA levels were not significantly decreased ( $P > 0.05$ ). And the urine SCCA level was not correlated to PASI or qBSA.

**Conclusion** Urine SCCA is elevated in psoriasis patients, but not correlated with disease severity or treatment response.

PO14-047

### Relationship between traditional Chinese medicine constitutional types with psoriasis vulgaris (winter type): an observational study

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**Objective** To investigate the distribution rule of constitution of Traditional Chinese Medicine (TCM) of patients with psoriasis vulgaris (winter pattern) in Beijing, and to provide new method of prevention and treatment psoriasis.

**Methods** This is a case-control study with questionnaire investigation method. To investigate respectively 660 patients aged from 18-65 years of old Han nationality with psoriasis vulgaris (winter pattern) and 660 patients in

Beijing with other skin diseases as control group. To analyze the constitution of Traditional Chinese Medicine (TCM), and contrast the correlation of the constitution of Traditional Chinese Medicine (TCM) with sexuality, age and other factors.

**Results** There is a positive correlation between the patients with psoriasis vulgaris (winter type) of Yin-deficiency with psoriasis.

**Conclusions** The predisposition with psoriasis vulgaris (winter type) belongs to Yin-deficiency. Drug intervention of patients of Yin-deficiency may play an important role in preventing the occurrence of psoriasis.

PO14-049

### Differentially expressed genes of psoriasis in Xinjiang by gene expression profile

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3. Infected Dermatology Department of the 11th Hospital of The People's Liberation Army

**Objective** To investigate the differential gene expression of patients with psoriasis vulgaris (Spleen deficiency dampness) and healthy population in Xinjiang Uighur autonomous region by gene expression profile.

**Methods** Four cases of blood samples are collected in our hospital treatment of Uighur and Han patients with psoriasis vulgaris (Spleen deficiency dampness), respectively, and 4 cases were healthy controls blood samples from the crowd, respectively. Through gene expression profile chip screening patients with ordinary psoriasis (Spleen deficiency dampness) and contrast of healthy crowd differential expressed genes, using real-time fluorescent quantitative PCR method to valid part large difference multiples gene.

**Results** The gene expression profile chip testing shows that between Uighur and Han patients with psoriasis vulgaris (Spleen deficiency dampness) have 124 differential expressed genes, up-regulated gene 58 (46.8%), down-regulated gene 66 (53.2%); These differential expressed genes mainly related to the skin barrier function, NFKB/IFN immune regulation, cell cycle and apoptosis, autophagy, cell energy metabolism, cell signaling, B cell activation, leukocyte antigen repair, angiogenesis and other functions. Real-time fluorescent quantitative PCR confirmed that Xinjiang Uighur patients with ordinary psoriasis (Spleen deficiency dampness) compared with Uighur healthy controls, the B cells CD19, CR2, JUN, BLNK gene expression significantly down-regulated ( $P < 0.05$ ) and SPRY1, SPRED1 two gene expression in JAK - STAT signal pathway significantly down-regulated ( $P < 0.05$ ).

**Conclusions** The gene expression profile chip screening of patients with ordinary psoriasis (Spleen deficiency dampness) and contrast healthy people have differential expressed genes, and provide reference for the research of Xinjiang region psoriasis research.

PO14-050

### Molecular mechanism of paeoniflorin regulating keratin 17 expression in the targeted therapy of psoriasis

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**Objective** To illustrate the effects and the underlying mechanism of paeoniflorin (PF) on the proliferation and immunological activity of keratinocytes in the treatment of psoriasis.

**Methods** We performed cell experiments and Cell Counting Kit-8 (CCK8) to evaluate the proliferation rate of keratinocytes with PF treatment. And the mRNA and protein levels of K17 were detected by RT-PCR and western blot. In addition, we used IMQ mouse model to verify the effective treatment of PF in psoriasis-like dermatitis, and its functions on the expression of K17 in vivo.

**Results** The results showed that PF could inhibit the proliferation of keratinocytes induced by cocktail stimulation (TNF- $\alpha$ , IFN- $\gamma$ , IL-17A, and IL-23) in a dose-dependent manner. Besides, among these four critical cytokines, IFN- $\gamma$

up-regulated the K17 expression most, which could be inhibited by PF. In addition, PF reduced the phosphorylated level of NF- $\kappa$ B in keratinocytes that activated by cocktail cytokines. In vivo, the erythema scales, the thickness of the epidermis, and the number of infiltrated immune cells of the mice were significantly attenuated by topical treatment of PF on back skin, and this therapeutic effect of PF was dose-independent. Meanwhile, the highly expressed K17 in the epidermis of IMQ mouse was decreased correspondingly.

**Conclusions** PF inhibited the proliferation and activation of keratinocytes by targeting K17, thereby attenuating the inflammatory responses of psoriasis. Considering the treatment effects of PF in patients with psoriasis and the effect of PF in IMQ psoriasis-like mouse model, externally applied PF on skin provides a novel therapeutic approach in the treatment of psoriasis.

PO14-052

### Self-management system for psoriasis patients based on artificial intelligence technology

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2. Shenzhen Yi-yuan Intelligence Tech. Co., LTD

**Background** Psoriasis is a chronic, inflammatory skin disease characterized by patches of abnormal skin which affects 2-3% of the population. Psoriasis affects skin, knees, scalp, nails and complicates with metabolic syndrome and cardiovascular disease. Most patients are first diagnosed in young ages. As there is no known cure, the life quality of a patient with psoriasis is often diminished because of the appearance of their skin and long-lasting treatments. Because of the complexity of psoriasis, the disease appears various different skin characteristics. It is of great necessity for symptoms controlling, prevention of recurrence and self-management of patients, but it barely attracts the attention of doctors in previous studies. We aim to develop an AI system to perform disease classification, severity measurement, treatment and diet guidance. Combining with related literature and expert experience, AI system would be helpful for the management of chronic disease.

**Methods** Totally 3,000 pictures of patients with psoriasis were collected and manually classified by dermatologists according to the appearance of the skin. Five types of psoriasis were classified: guttate, small plaque, large plaque, inverse, and nail joint involvement. While depending on the severity, five stages of the disease were divided: progressive, stable, mild, moderate and severe. Referring to literature, some diet or lifestyle recommendations were made.

**Results** Based on the data, AI algorithm models were built after iteratively training, which can automatically classify the type of psoriasis and the stages of each type. Some guiding views to the models were made referring to the literature and opinions of specialists. AI models could help to perform the evaluation and treatment plans.

**Conclusions** It is concluded that artificial intelligence technology can bring convenience for patients with psoriasis in tracking disease and providing effective treatment recommendation, which is superior to previous health education and chronic disease management.

PO14-053

### Efficacy of etanercept and acitretin on erythrodermic psoriasis

Feng Li

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**Objective** To compare the efficacy of etanercept and acitretin on erythrodermic psoriasis.

**Methods** Etanercept are injected at a dose of 50 mg/W (25 mg BIW OR 50 mg QW). Acitretin are taken at the dosage of 0.5~0.7 mg/ (kg.d). Patients are followed up at week 0, 4 and 12, some up to 24 weeks.

**Results** Etanercept group began to improve by week 2, and improved significantly by week 8~12. Acitretin group began to improve by week 2, and improved significantly by week 12~16.

**Conclusions** Etanercept exerts a better effect than acitretin by week 4, and no significant difference in efficacy in week 12. Long-term follow-up till week 24 reveals similar stability of both medicines.

## PO15 Sexually Transmitted Diseases

PO15-004

### Hisotogic and immunohistochemical analysis of secondary syphilis

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**Background** A number of studies demonstrated that Immunohistochemistry (IHC) was superior to silver staining in sensitivity and specificity, when detect the *Treponema pallidum* (TP) in tissue sections. The purpose of the study was to reseach the characteristics of distribution of TP in biopsies of secondary syphilis and to discuss the possible relationship between the distribution pattern of TP and its histopathologic,serologic and clinical features.

**Methods** We use a rabbit polyclonal antibody directed TP and streptavidin-peroxidase method to detect TP of 22 tissue sections from 21 patients of secondary syphilis.

**Results** Of 22 samples, 19 (86.36%) samples were positive for Immunohistochemistry.Higher density TP is presented in most secondary syphilis lesions, distributing in lower epidermis and around dermal vessels. The number of TP is paralleled with RPR titer, the number of neutrophils in the dermis but not plasma cells.

**Conclusion** Immunohistochemi stry for TP is helpful for histologic diagnosis and severity analysis of syphilis.

PO15-016

### Chronic syphilitic monoarthritis in a delayed diagnosis of the patient without lesion

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A 51-year-old man presented to our hostipal for an evaluation due to seven months history of left ankle joint pain without fever and lesion. Seven months prior to his visit, he had an acute onset of left ankle joint pain and swelling with decreased range of motion that was worsening with activity. He had no painless ulcer or rash on his penis and scrotum, urethral discharge, blurred vision or headache. He admitted engaging in several acts of un-protected heterosexual intercourse. Left ankle exam revealed swelling, warmth, redness and tenderness. TPPA was positive, RPR was negative and HIV was negative. Histopathological examination showed inflammation and perivascular infiltration containing lymphocytes, monocytes and numerous plasma cells. Immunohistochemical studies showed spiral and thread-like organisms highlighted by brown representing spirochetes were observed within synovial tissue. Syphilitic arthritis were diagnosed based on clinical features, histological and laboratory findings. We administered intramuscular benzathine penicillin 7.2MU, as three doses for 2.4MU each with a week apart and intravenous ceftriaxone for ten days. His ankle problem was completely resolved over the following one month. Although monoarthritis is rare in syphilis, our case highlights the fact that systemic involvement including acute arthritis may occur after a long quiescent phase if syphilis is undiagnosed and remains untreated.

PO15-022

### Epidermiological Investigation of HPV and Chlamydia trachomatis Co-Detection on cervical samples of women with external genital warts

Man-Li Qi, Lin Zhu

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**Objective** To investigate the prevalence of Chlamydia Trachomatis and cervical HPV genotypes, especially their co-infection among females with external genital warts.

**Methods** Females presented to our STD department,who were diagnosed as Condyloma acuminata and without any

other clinical symptoms were enrolled in the study. Samples of cervical exfoliated cells were collected for HPV genotype detection.

**Results** Totally 123 females were enrolled in the study, The prevalence of cervical HPV, Ct and co-infection among females with external CA was 88.6%, 22.7% and 22.7% respectively. 75.6% presented with cervical HR-HPV infection. 65.0% were multiple genotypes infection, 13.0% were single LR-HPV genotype and 10.6% were single HP-HPV genotype. HPV 16, 52, 18, 51, 58, 11, and 6 were the most common HPV genotypes.

**Conclusion** Females with external genital warts or a history of external genital warts carry an obvious high prevalence of cervical HR-HPV and CT infection, especially the co-infection. An active screening for timely treatment of CT infection and monitoring the cervical HPV regularly for this population are suggested in order to decrease cervical cancer incidence in a cost-effective manner.

PO15-027

### **CXCL13+ fibroblast-like cells and inducible skin-associated lymphoid tissue (iSALT)-like structures in secondary syphilis**

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Chronic inflammation induces ectopic accumulation of lymphoid cells in non-lymphoid organs. An example of such structures is mucosa-associated lymphoid tissue (MALT). Similarly, the concept of skin-associated lymphoid tissue (SALT) has been proposed. Recently, we identified inducible lymphoid structures composed of macrophages, dermal dendritic cells, and effector T cells in mice, which we termed inducible SALT (iSALT). However, it remains unknown if the concept of iSALT can be applicable to the human skin. To address this issue, we have studied various lesions of chronic inflammatory skin diseases by immunohistochemistry.

Here, we present the skin lesions of patients with secondary syphilis. We found that CD4+ T cells, CD8+ T cells, and B cells were densely infiltrated in the perivascular area in the upper dermis. Some blood vascular endothelial cells expressed PNA<sup>d</sup>, indicating differentiation toward high endothelial vessels (HEVs), a feature of lymphoid organs. We further found numerous CXCL13+ fibroblast-like cells in the upper dermis.

CXCL13 has at least two functions. Firstly, it recruits lymphoid-tissue inducer cells, which promotes the development of lymphoid tissues. Secondly, CXCL13 is involved in the development of B cell follicles by attracting B cells. In syphilitic lesions, CXCL13 may work as a lymphoid tissue-organizing factor, because we found few B cells co-localized with CXCL13+ fibroblast-like cells.

In conclusion, we speculate that the clusters of immune cells with HEVs in syphilis lesions represent a human counterpart of iSALT.

PO15-001

### **HIV associated cell death: necrosis enhances, while apoptosis restricts viral transmission**

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**Background** HIV remains a global pandemic and despite successful anti-retroviral therapy, a well-established cure remains to be identified. Viral modulation of cell death has a significant role in HIV pathogenesis. Here we sought to understand the major mechanisms of HIV-induced death of lymphocytes and the effects on viral transmission.

**Methods** Flow cytometry analysis of lymphocytes from acute HIV infected patients, and HIVIII<sub>B</sub> infected MT2 cells demonstrated both necrosis and apoptosis to be the major mechanisms of cell death in CD4+ and CD4-/CD8- lymphocytes.

**Results** Significantly, pro-apoptotic TNF peptide (P13) was found to inhibit HIV-related cell death and reduced viral transmission. Whereas pro-necrotic THF peptide (P16) enhanced HIV-related cell death and viral transmission.

**Conclusion** Understanding mechanisms by which cell death can be manipulated may provide additional drug targets to reduce the loss CD4+ cells and formation of a viral reservoir.

PO15-002

### Human papillomavirus-like particles activate Toll-like receptor signaling pathway and inhibit autophagy in dendritic cells

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**Background** Human papillomavirus-like particles (HPV-VLP) have been developed as vaccine for prevention of HPV infection. It is known that VLP activate in vitro generated dendritic cells (DC); however, the mechanism of this activation remains unclear. Toll-like receptors (TLR) serve as the major innate immune sensors for detection of specific molecular patterns on various pathogens. Autophagy is currently known to affect both of the immune defense and suppression of inflammatory responses. In this study, we will investigate the effect of HPV11-L1 based VLP on TLR signaling pathway and autophagy of DC.

**Methods** HPV11L1-VLP were produced by 293FT transfection and purified by ultracentrifugation. Bone marrow derived dendritic cells (BMDC) from C57BL/6 mice were differentiated from proliferating mouse bone marrow progenitors through induction with granulocyte macrophage colony stimulating factor (GM-CSF). Then DC were stimulated by HPV11 L1-VLP for 24 hours, followed by FACS analysis to determine the expression of CD80, CD86, and MHCII. The expression of TLR signaling and autophagy proteins of DC upon VLP stimulation was detected by western blot.

**Results** The expression of CD80, CD86, and MHCII of DC increased upon HPV11 L1-VLP stimulation. In DC, the levels of p-IRF3, p-TBK1, p-p38, p-4EBP1, and p62 were up-regulated and the ratio of LC3-II/I was down-regulated, after HPV11-L1 VLP pulse.

**Conclusions** Our study showed that HPV11 L1-VLP promote maturation and antigen presenting function of dendritic cells, maybe through the activation of TLR signaling. Meanwhile, autophagy was inhibited by VLP entry, suggesting HPV infection may compromise immune defense by autophagy blockage.

PO15-003

### Expression and significance of lncRNA RP11-1100L3.8 in condyloma acuminatum

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**Objective** To explore the expression of lncRNAs in condyloma acuminatum (CA) and their significance.

**Methods** Firstly, 3 pairs of CA and controls were detected using high-throughout sequencing for transcriptome and lncRNA profile, followed by 40 cases of CA and 20 cases of controls detected using RT-qPCR. Then the relationships between differential lncRNAs, especially *RP11-1100L3.8*, and clinical feature of CA were analyzed. Furthermore, enrichment analysis of target genes cis- or trans- regulated by *RP11-1100L3.8 in silicon* was performed using GO analysis.

**Results** Our lncRNA screening experiment led to identification of *RP11-1100L3.8*, whose expression was significantly decreased in CA specimens, valiated by following RT-qPCR experiments. Its expression was negatively associated with the number and duration of treatment for CA. The expression of *RP11-1100L3.8* in CA whose treatment duration  $\geq 3$  months was obviously lower than that in CA whose treatment duration  $< 3$  months, whereas no noticeable differences of *RP11-1100L3.8* expression were identified between the CA group and the control group in terms of gender, age, genotype of HPV or lesion location. Target genes *in silicon* by *RP11-1100L3.8* were enriched in pathway of keratinocyte differentiation, inflammatory response, innate immune response, positive regulation of angiogenesis, regulation of leukocyte chemotaxis and regulation of epithelial proliferation.

**Conclusion** The low expression of *RP11-1100L3.8* is related with recurrence and treatment-resistance of CA, and *RP11-1100L3.8* might participate in regulation of immune responses of virus infection.

PO15-005

**A comparative study of intestinal flora, short-chain fatty acids, and injury of intestinal mucosal in HIV-positive and -negative subjects**

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**Objective** We aimed to compare the short-chain fatty acid (SCFA) profile, intestinal microecology, and intestinal mucosal injury between patients with human immunodeficiency virus (HIV) (but not acquired immune deficiency syndrome) and healthy controls.

**Methods and Results** Rikenellaceae, Microbacteriaceae, Roseburia, Lachnospiraceae, Alistipes, and Ruminococcaceae were decreased, while Moraxellaceae and Psychrobacter were increased in HIV-positive patients. Butyric acid ( $P=0.04$ ) and valeric acid ( $P=0.03$ ) were reduced in HIV-positive patients. Colonoscopy revealed no visible damage in all subjects. However, intestinal mucosa biopsy showed mild inflammation in the intestinal mucosa of HIV-infected persons. There were no differences in I-FABP and D-lactic between groups. Butyric and valeric acids mainly positively correlated with Rikenellaceae, Ruminococcaceae, Alistipes, Roseburia, and Lachnospiraceae. CD8+ cells were positively correlated with Proteobacteria. CD4+ cells and CD4/CD8 were negatively correlated with acetic acid. CD8+ cells were positively correlated with valeric acid.

**Conclusion** The differences in the distribution of intestinal flora between HIV-infected and healthy individuals, especially some SCFA content, suggest that there is already a predisposition to intestinal mucosa damage in HIV-infected individuals.

PO15-006

**Clinical analysis of HIV/AIDS patients with solar dermatitis**

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*The First Affiliated Hospital of Kunming Medical University*

**Objective** To perform a complete descriptive analysis of 33 HIV-positive patients, to study the effects of different UV radiation spectrum in association with CAD and PMLE and to determine clinical differentiation points between HIV-positive and HIV-negative solar dermatitis patients.

**Methods** Data of 33 HIV-positive solar dermatosis patients was collected from The First Affiliated Hospital of Kunming Medical University from January 2008 till February 2017. Detailed clinical analysis and case-series of patients was reported.

**Results** All 33 patients ethnically Han were diagnosed with HIV and solar dermatitis, male to female ratio was 5: 1, patients diagnosed with PMLE accounted for 57%, Eosinophils were elevated in 2 cases, neutrophils were elevated in 1 case, TPPA, TRUST was positive in 1 case and mycosis examination for oral candidiasis was positive for 2 cases. Histopathological examination revealed "Hyperkeratosis, acanthosis, parakeratosis, with apoptosis of keratinocytes in the epidermis" as the classical findings of HIV-related Solar dermatitis.

**Conclusions** Solar dermatitis in HIV-positive individuals appears to be a manifestation of advanced disease, however less severe and acute photoeruptions represent early stages of HIV. CD4 count has non-significant association with HIV-related PMLE or CAD. HIV-positive Disparity between HIV-positive CAD and PMLE exists in, time of dermatosis formation, duration of disease, clinical picture and MED values. "Hyperkeratosis, acanthosis, parakeratosis, with apoptosis of keratinocytes in the epidermis" is the classical findings of HIV-related Solar dermatitis. Primary mode of treatment is sun avoidance and selection of treatment regimens depends upon clinical picture of SD.

PO15-007

**Clinical prediction and diagnosis of neurosyphilis in patients without human immunodeficiency virus infection**

Wu-Jian Ke

*Guangdong Province Dermatology Hospital*

**Objective** To explore the influencing factors of neurosyphilis and assess their diagnostic accuracy for the diagnosis of neurosyphilis.

**Methods** We retrospectively reviewed socio-demographic information, clinical symptom, and laboratory indicators among 100 syphilis patients (50 neurosyphilis and 50 non-neurosyphilis) who underwent lumbar puncture at the Dermatology Hospital of Southern Medical University between April 2013 and November 2016. Multivariate logistic regression was used to explore influencing factors, and ROC analysis was used to assess diagnostic accuracy.

**Results** Neurological symptoms ( $OR=59.281$ , 95%  $CI: 5.215-662.910$ ,  $P=0.001$ ), CSF TPPA titer ( $OR=1.004$ , 95%  $CI: 1.002-1.006$ ,  $P<0.001$ ), CSF protein ( $OR=1.005$ , 95%  $CI: 1.000-1.009$ ,  $P=0.041$ ), and CSF WBC ( $OR=1.120$ , 95%  $CI: 1.017-1.233$ ,  $P=0.021$ ) were found to be statistically associated with neurosyphilis diagnosis. In ROC analysis, CSF TPPA titer had a sensitivity of 90%, a specificity of 84%, and an AUC of 0.941. The diagnostic accuracy was much higher than other three predictors.

**Conclusions** CSF TPPA can potentially be considered as an alternative test for diagnosis of neurosyphilis. Combining with neurological symptoms, CSF protein, CSF WBC, the diagnosis would have a higher sensitivity.

PO15-008

**Successful treatment of Jarisch-Herxheimer reaction in a patient with neurosyphilis**

Xin Su, Ming-Ming Liu, Xiao-Wen Xue, Wen-Jun Liao, Gang Wang, Cui-Ling Ma

*Department of Dermatology, Xijing Hospital, Fourth Military Medical University*

**Objective** This article reports a case of successful treatment of Jarisch-Herxheimer reaction (JHR) in a 57-year-old woman with Neurosyphilis during the Penicillin therapy.

**Methods** The patient was rushed to our hospital for a sudden loss of consciousness, who was finally diagnosed with Jarisch-Herxheimer Reaction and Late Neurosyphilis: General Paresis. With Penicillin G and dexamethasone, accompanied by the reduction of intracranial pressure and protection of the nerves, her condition had been improving.

**Results** The treatments to prevent the JHR, like TNF- $\alpha$  antibodies targeting at cytokine production, or glucocorticoids, should be used prior to anti-syphilitic treatment.

**Conclusions** The Jarisch-herxheimer Reaction is rare in the treatment of anti-syphilitic for neurosyphilis but quite harmful, even life-threatening to patients, which requires the high-level attention of dermatologists, neurologists, general practitioners and doctors of all fields. Therefore, the combined efforts by doctors are imperative to relieve symptoms, restore functions and save lives.

PO15-009

**A novel nested real-time PCR for *Treponema pallidum* DNA in syphilis biospecimens**Xing-Dong Ye<sup>3</sup>, Yi Zhang<sup>2,3</sup>, Xiang-Nong Dai<sup>3</sup>, Ze-Fang Ren<sup>1</sup>, Hong-Da Lin<sup>1</sup>

1. School of Public Health, Sun Yat-sen University

2. Guangzhou medical university

3. Guangzhou Institute of Dermatology

**Background** Early diagnosis of *T. pallidum* infection is helpful for disease management, and the conventional test for *T. pallidum* DNA using PCR is suitable for tissue fluid swab specimens from the lesions of patients with probable early syphilis, We therefore describe herein a novel nested real-time PCR method (NR-PCR), a combination of nested

PCR and real-time PCR, which is sensitive to a minimum of 2 *T. pallidum* strain Nichols cells/mL. Available studies of *T. pallidum* DNA in the biospecimens of syphilis patients are limited.

**Methods** Lesion exudate swabs and samples of whole blood, serum, earlobe peripheral blood, and cerebrospinal fluid (CSF) were collected from syphilis patients before treatment. Specific primer sequences targeting *T. pallidum* gene *polA* were designed for use in NR-PCR.

**Results** Across all syphilis types, most samples assayed with NR-PCR returned a positive result, including earlobe blood (92.0%), CSF (90.2%), swabs (74.3%), serum (66.9%), and whole blood (64.2%). No significant differences were observed in number of positive samples for whole blood, serum, and swabs between primary and secondary syphilis ( $P > 0.05$  for all comparisons). However, with the exception of primary syphilis samples, significantly more whole blood samples from secondary syphilis patients tested positive than did whole blood samples from any other type of syphilis ( $P < 0.05$  for all comparisons). For neurosyphilis patients, significantly more earlobe blood samples tested positive than did whole blood samples ( $P < 0.05$ ), but there was no difference in the number of positive results for earlobe blood and whole blood in latent syphilis. Significantly more serum samples tested positive in latent syphilis patients with rapid plasma regain (RPR) titers  $\geq 1:8$ , as compared to those with RPR  $\leq 1:4$ .

**Conclusion** NR-PCR is a feasible method for *T. pallidum* DNA identification in various types of biosamples from syphilitic patients, especially earlobe blood.

PO15-010

### Detection and clinical significance of self-made HPV16 E7 polyclonal antibody in cervical lesions

Ling-Jing Chen, Hao Cheng

Sir Run Run Shaw Hospita of Zhejiang University School of Medicine

**Background** HPV16 E7 polyclonal antibody was used as a specific antibody. The expression of HPV16 E7 protein in HPV16-infected cervical epithelial cells and cervical cancer tissues was detected by immunohistochemistry. A retrospective analysis was performed to detect HPV DNA by fluorescence PCR. The diagnostic compliance rate was analyzed and its correlation with cervical lesion grade was analyzed. The diagnostic value of HPV16 E7 protein detection and TCT detection was compared. The clinicopathological parameters such as pathological type, tumor diameter, tumor stage, and lymph node metastasis of cervical cancer patients were analyzed retrospectively. The value of this antibody in clinical testing.

**Methods** The HPV 16 DNA-positive CIN and cervical cancer (experimental group) 182 paraffin-embedded tissues were collected from our hospital from 2009 to 2016, of which the pathological diagnosis was CIN1, CIN2, CIN3, and cervical cancer were 40, 43 respectively. 38, 61 cases; HPV genotyping test confirmed that there were 33 cases of chronic cervicitis paraffin-embedded tissues (control group) in which 15 types of HPV DNA were negative. The expression of HPV16 E7 protein in cervical tissue was detected by immunohistochemical method. The coincidence rate between HPV DNA and HPV DNA was analyzed. The correlation between HPV16 E7 protein expression level and cervical lesion grade was analyzed. The diagnostic value of immunohistochemistry and TCT was compared. Evaluation indicators to analyze clinicopathological parameters of patients with cervical cancer.

**Results** Using the self-made HPV16 E7 polyclonal antibody as a specific antibody, we performed immunohistochemical analysis on 182 cases of cervical cancer and cervical intraepithelial neoplasia. Immunohistochemistry showed that the positive expression of HPV16 E7 protein was located in the nucleus. In 40 CIN1 specimens, HPV16 E7 protein was positively expressed in 6 cases, 43 CIN2 specimens were positive for HPV16 E7 protein in 40 cases, 38 CIN3 specimens were positive for HPV16 E7 protein in 38 cases, and 61 cases of cervical cancer specimens were positive for HPV16 E7 protein in 61 cases. To separate CIN1, CIN2, CIN3, cervical cancer and CIN2+, the coincidence rate of immunohistochemistry and PCR detection was 15%, 93%, 100%, 100%, 97.9%, indicating that the antibody used for high-grade cervical lesions detection sensitivity and accuracy. Our study found that the percentage of positive HPV16 E7 protein expression was positive and the positive intensity increased as the grade of cervical lesions increased. This shows that the progression of cervical lesions is closely related to the level of HPV16 E7 expression. The study found that HPV multi-infection rate does not increase with the level of cervical lesions, indicating that the level of cervical lesions depends mainly on the ability of HPV subtypes of the disease, but not much related to the type of HPV infection. 33 cases of chronic cervicitis HPV16 E7 protein positive expression 0 case. There were 182 cases of CIN and cervical cancer, including 121 cases of abnormal TCT detection

and 61 cases of normal control; 33 cases of chronic cervicitis, of which TCT detection was abnormal in 2 cases and normal in 31 cases. There were 182 cases of CIN and cervical cancer, including 145 cases of positive HPV16 E7 protein expression and 37 cases of negative HPV16 E7 protein expression; 33 cases of chronic cervicitis, of which HPV16 E7 protein expression was positive in 0 cases and negative in 33 cases. In this study, self-made HPV16 E7 antibody was used for immunohistochemistry to detect cervical cancer HPV positive ratio, compared with TCT detection showed higher sensitivity, specificity, accuracy, positive predictive value, negative predictive value, area under the ROC curve, Youden index, which shows that the use of self-made HPV16 E7 antibody for immunohistochemical diagnosis is superior to TCT detection. Our results also showed that the positive degree of HPV16 E7 protein expression was not associated with the pathological type, differentiation, tumor diameter, lymph node metastasis, FIGO stage, and tumor thrombus in cervical cancer.

**Conclusions** 1. The HPV16 E7 protein polyclonal antibody independently developed and used for immunohistochemical detection of cervical lesions and fluorescent PCR method has a high coincidence rate, indicating that the positive expression of HPV16 E7 protein implies more possibility of malignant transformation of cervical lesions. 2. The use of self-made HPV16 E7 protein polyclonal antibody immunohistochemistry to detect CIN2 + has high sensitivity and accuracy. It can avoid overexamination and treatment, but will not miss the high-grade cervical lesions risk of high lesions (CIN2 +), and has clinical practical value. 3. Compared with the TCT detection method, the self-made HPV16 E7 polyclonal antibody immunohistochemical method in detection of CIN and cervical cancer has a higher accuracy, specificity and sensitivity, which means better clinical diagnostic value than TCT detection. The combined detection of HPV16 E7 protein has important significance for improving the accuracy of cervical cancer diagnosis. 4. The expression of HPV16 E7 protein increased with the grade of cervical lesions and could predict the progression and prognosis of cervical lesions. But the positive degree of HPV16 E7 protein expression was not associated with the pathological type, differentiation, tumor diameter, lymph node metastasis, FIGO stage, and tumor thrombus in cervical cancer. 5. HPV16 DNA-positive cervical lesions were detected by the self-made HPV16 E7 protein polyclonal antibody as the specific antibody. The advantages of this method are simple operation, mature detection technology, low equipment requirements, and economical price. It is expected to further promote the use of the clinical.

PO15-011

### **Autophagy activation is involved in HPV11 E6 transfected HaCaT cell via mTOR pathway**

Boya Zhang, Hao Cheng

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**Background** Human papillomavirus (HPV) is the most common sexually transmitted agent in the world. Autophagy is an intracellular, catabolic process that maintains cellular health. It is unknown whether the viral protein E6 affects autophagy. We want to explore the relationship between HPV11 E6 and autophagy.

**Methods** To address this question and gain insight into the role of autophagy during HPV infection, we established HPV 11E6-HaCaT stable cell line and checked the autophagy-related gene expression using Western blot and Immunofluorescence assay.

**Results** We found that the ratio of LC3II/LC3I was upregulated while the expression of p62 was declined in the HPV11 E6-overexpressing cells. Moreover, we analyzed the autophagic flux with mCherry-GFP-LC3B and GFP-LC3B fusion protein which confirmed our results above. We revealed that p-mTOR (ser2448) and the downstream of mTOR (p-70S6K and p-4EBP1) was suppressed in HPV11 E6 transfectants by western blot. We also found that the p-AKT and p-ERK1/2 were suppressed in the presence of HPV11 E6. Phosphorylation sites of ULK1 (Ser757) can be affected by mTOR signaling when nutrients are plentiful while the ratio of p-ULK1 (Ser757)/ULK1 was reduced as well. We use gene microarray to analyse the differentially expressed genes between control group and HPV11 E6 HaCaT. The differentially expressed genes from gene microarray involving autophagy was confirmed by qPCR and Western blot. The expression of ATG10 had significant increased in RNA levels and the protein level. We checked the expression of ATG5-ATG12 complex by Western blot and the expression of ATG5-ATG12 complex increase significantly in HPV11 E6-HaCaT.

**Conclusion** HPV11 E6 induce autophagy via mTOR pathway.

PO15-012

**Transcriptional regulation of genes in cervical epithelial cell line containing HPV16 E6**

Si-Yuan Sun, Rui Han, Hao Cheng

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**Background** The life cycle of human papillomaviruses (HPVs) is strictly linked to the differentiation of their natural host cells. The HPV E6 oncoproteins can delay the normal differentiation program of cervical epithelial cells. However, the exact mechanisms responsible for this are not so much clear currently. E6 protein encoded by HPV early genes plays an important role in HPV infection. The goal of this study was to investigate the effects of HPV16 E6 oncoproteins on the expression of genes in transfected H8 stable cell line. The differentially expressed genes may help us understand the infection of HPV16 more comprehensively and explore the specific role of E6 protein in this process.

**Methods** The expression profile of cervical epithelial H8 stable cell line containing HPV16 E6 gene was analyzed by microarray. Quantitative real-time PCR (qRT-PCR) was performed to confirm the microarray data.

**Results** A total of 2084 genes were identified to be expressed significantly differentially between HPV16 E6-H8 stable cell line and control cell line, among which 844 genes were up-regulated and 1240 genes were down-regulated with fold-changes  $N > 2.0$  between the two groups. The most significantly enhanced genes expression in HPV16E6-H8 cells were OLFML3, LUM, MAPK4 and EDA2R, while TDRD9 expression was down regulated obviously.

**Conclusions** The gene expression profile of HPV16 E6-H8 stable cell line may help us to better understand the role of E6 oncoprotein in the productive virus life cycle, and also in virus-induced carcinogenesis.

PO15-014

**Analysis of clinical features of asymptomatic neurosyphilis**

Cheng Zhan, Pei-Hong Sun

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**Objective** To understand the clinical characteristics of asymptomatic neurosyphilis,

**Methods** A retrospective analysis was performed on 45 patients who were discharged from our hospital from March 2013 to May 2017 diagnosed as asymptomatic neurosyphilis.

**Results** (1). Among the 45 patients, there were 23 females and 22 males. 24 patients were between 20 to 40 years old, in which 18 in 24 (75%) were female patients. 21 patients were over 40 years old, and in which 15 out of 21 were male patients. The average number of patients with asymptomatic neurosyphilis in our hospital in recent 4 years is about 12. (2). There were 31 patients with syphilis serum fixed. The serum RPR titer was less than or equal to 1: 4, their RPR titer of the cerebrospinal fluid was between 1: 1 and 1: 2. The serum RPR titer was 1: 8 and their titer of the cerebrospinal fluid RPR were between 1: 1 and 1: 8. Serum RPR titer was 1: 16 and their cerebrospinal fluid titer was between 1: 1 and 1: 4. The serum RPR titer was 1: 32 and their cerebrospinal fluid titer fluctuated were between 1: 1 and 1: 8. (3). In the routine examination of cerebrospinal fluid of 45 patients, the number of white blood cells increased was 13 (28.8%), and 28 cases of protein qualitative were positive (62.2%). After six months' treatment, 15 patients follow the lumbar puncture examinations, in which 7 patients were abnormal in protein qualitative, 4 cases were overcast. And 7 patients' CSF white cell increased, 6 cases were normal after treatment ( $\chi^2 = 1.4, P = 1.4$ ).

**Conclusions** (1). Asymptomatic neurosyphilis has a gender and age difference, and the new cases of asymptomatic neurosyphilis in our hospital have been relatively stable in recent years. (2). In patients with asymptomatic neurosyphilis, the proportion of serum fixed patients was higher (69%), and the proportion of serum RPR titer which is 1: 32 was higher, accounting for 35%. There was no significant correlation between serum RPR titer and RPR titer in cerebrospinal fluid. (3). In the routine examination of cerebrospinal fluid in patients with asymptomatic neurosyphilis, the positive rate of protein qualitative experiment (62.2%) was larger than that of white cells (28.8%). There was no significant difference in response to treatment.

PO15-015

**Expert Consensus: Determine and ermeasures on drug-resistance and persist infection of Chlamydia trachomatis genital Infection**

Man-Li Qi

*Tianjin Medical University General Hospital*

Chlamydia trachomatis (Ct) genital infection is the most common sexually transmitted disease in China and USA. The morbidity of Ct genital infection in China is increasing from 32.48 per 100,000 in 2008 to 37.18 per 100,000 in 2015. The major infection groups locate in Zhujiang Delta, Changjiang Delta, Minjiang Area and West China. The top amount of infection group is reach to 615.99 per 100,000 citizens. In USA, the reported infection cases are 1,441,789, which include 627.2 females and 278.4 males per 100,000 citizens. It has already occupied the top one of sexually transmitted diseases with an increasing rate of 22% in males and 6% in females. Ct genital infection always complicate with epididymitis, prostatitis, cervicitis, annexitis, infertility and atopic pregnancy. It becomes a great challenge for public health.

PO15-017

**Relapsing secondary syphilis of reintection: a case report**

Mei Yang

*No.2 Renmin Hospital Chengdu*

A 32-year-old man presented with a 6-months history of annular plaque all over scrotum. He reported a history multiple unprotected sexual encounters over the preceding 1 year. Six years ago, he had syphilis history, and he cured. No chancres or genital ulceration were observed. Syphilis toluidine red untreated serum test (TRUST) 1:16, and treponema pallidum haemagglutination assay (TPHA) positive. A biopsy specimen obtained from the patient's scrotum revealed a perivascular infiltrate with some plasma cells and lymphocytes. The endothelial cells swelled and blood vessels were occluded. A diagnosis of relapsing secondary syphilis of reintection was made. The patient was treated with intramuscular dose of 2.4 million units of penicillin G benzathine once a week for 6 times. The rashes vanished within 2 weeks. During 2 months-3 year follow-up, TRUST remained 1:4. The patient was sero-resistance.

PO15-018

**A systematic review of atypical cutaneous manifestations of secondary syphilis**

Xiao-Ke Liu, Jun Li

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A 53-year-old man presented for evaluation of nonpruritic skin lesions, which were dark erythematous plaques in round or oval patterns with relatively distinct borders, 0.5–3 cm in size. The plaques had appeared on his abdomen 4 months earlier and, over 1 month, had spread to his trunk and extremities (palms and soles are not involved). He denied any systematic symptoms such as malaise, fever, headache, arthralgia, night sweating, appetite loss or weight loss. This previously healthy patient had no prior history of medication, genital ulceration or flat condyloma before the plaques occurred. He had visited a non-sexual transmitted disease clinic, where he received a diagnosis of lupus erythematosus. A skin biopsy was performed on the abdomen and showed hyperkeratosis, pigmentation of the basal layer. Dermis showed a slight perivascular inflammatory infiltrate of lymphocytes, histiocytes and plasma cells, which didn't support the diagnosis. Although he denies any unprotected or high-risk sexual behavior, we still completed syphilis-related and HIV-antibody tests for him. Immunohistochemistry demonstrated numerous spirochetes in the epidermis and dermis. A rapid plasma reagin (RPR) test was positive, with a titer of at least 1:64, and a Treponema pallidum particle agglutination assay was reactive. A serologic test for infection with the human immunodeficiency

virus was negative. A diagnosis of secondary syphilis was made. Treatment was performed with a single intramuscular dose of benzathine penicillin (2,400,000 U). No adverse effects were observed following the treatment. Complete regression of all cutaneous lesions was observed within one month. The titer of RPR became 1: 8 at the 6-month follow-up. Given the increasing incidence of syphilis among the immunosuppressed patient population, recognition of atypical cutaneous manifestations is critical for adequate management. We review a range of cutaneous manifestations of secondary syphilis and the skin diseases it may mimic.

PO15-019

### **Papulonodular secondary syphilis presenting as pseudolymphoma of the skin**

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Secondary syphilis has diverse clinical presentations, such as papulonodular lesions. This presentation has rarely been reported in the literature over the past 20 years. We report a case of papulonodular secondary syphilis presenting as an atypical lymphoid hyperplasia suggestive of cutaneous lymphoma, who has presented treponema in immunohistochemical examination of the skin lesions. The case presented here is evidence that syphilis is still among us and is still “the great imitator.” Male patient, 48 years old, married, with a history of lesions disseminated over his body for tow weeks. His medical history was significant for seminoma. Physical examination revealed numerous thin plaques and papules, and papulonodules on the face/limbs/and trunk. No mucosal lesions were present. Palms and soles were free of lesions. Hair and nails were normal. Histopathological examination by HE revealed a dense, wedge-shaped infiltrate containing many medium-sized lymphocytes with oval or cerebriform nuclei, occasional large transformed cells with nuclei containing prominent nucleoli, numerous plasma cells, and eosinophils . Cell-marker studies showed the dense lymphoid infiltrate to be composed of nearly equal proportions of T and B cells. Immunohistochemical examination was performed using a specific polyclonal antibody for *T. pallidum*, which revealed the presence of spirochetes. The rapid plasma reagin was positive at 1: 64, and the treponema pallidum antibody test was positive. Diagnosis of secondary syphilis by clinical-serological-histological correlation was then verified.

PO15-020

### **Predictors for serofast state after treatment among patients with syphilis: A systematic review**

Xiao-Ke Liu

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There are an estimated 11 million incident cases of syphilis worldwide each year. However, a continuing challenge to determining the response to treatment of syphilis is exemplified by the substantial proportion of patients who fail to achieve serological cure and remain serofast, defined as a <4-fold (2 dilution) decline in nontreponemal antibody titers at 6–12 months or as persistently low titers after treatment. Therefore, we highlight some persistent challenges and emerging trends in the clinical management of syphilis with a particular focus on serofast state. The primary endpoint of the study indicated that the subtype of *T. pallidum*, age, baseline RPR titer, disease phase, HIV status, neurosyphilis, serum cytokines and treatment regimen were crucial factors associated with serofast state. We agree with current CDC guidelines, which recommend additional clinical and serological follow-up in serofast patients and retreatment if follow-up cannot be assured.

PO15-021

**Malignant syphilis in a HIV negative male patient**

Liu-Yuan Wang, Hong-Fang Liu, Bin Yang, Li-Gang Yang

*Dermatology Hospital, Southern Medical University*

Secondary syphilis is often called “the greater imitator” because it shows a variety of clinical manifestations. Malignant syphilis is a serious and infrequent manifestation of secondary syphilis, also known as lues maligna, in which necrotic lesions may be associated with systemic signs and symptoms. Generally it occurs in patients with HIV infection or other state of immunodeficiency (e.g. diabetes, malnutrition, chronic alcohol or illicit drugs use) but it might be observed among those who have normal immune response. We describe a 36-year-old HIV negative Asian male who presented with multiple painful ulcerative skin lesions, positive syphilis serology and histopathology suggesting diagnosis of malignant syphilis. The patient was successfully treated with procaine penicillin 800,000 units daily for 15 days.

PO15-023

**Molecular prevalence of 23S rRNA resistant mutation sites 2058G and 2059G in Xinjiang *Treponema pallidum***

Xiao-Dong Wang

*The First Teach Hospital Of Xinjiang Medical University*

**Background** 23S rRNA resistance gene mutation A2058G and A2059G in *Treponema pallidum* (Tp) can cause the failure of azithromycin and spiramycin in the treatment of syphilis respectively. There are also cases of treatment failure in Xinjiang syphilis patients, but it is not clear whether the Tp strain also has a drug resistance mutation. The aim of this study is to elucidate the prevalent status of Tp resistance to macrolide mutation sites 2058G and 2059G in Xinjiang local syphilis infected patients and to provide experimental evidence for revealing the reasons for the high prevalence of syphilis in Xinjiang and the clinical replacement therapy.

**Methods** The study sample from the clinical and laboratory diagnosis of syphilis infection in blood samples of 204 cases, RPR positive and serological indicators meet the titer of more than 1: 2 and TPHA positive. Cryopreservation samples. Samples were extracted genomic DNA, PCR amplification of Tp gene specific *polA* (377bp) Tp-DNA screening positive samples; 23S rRNA amplification of Tp gene in positive samples (491bp and 629bp), respectively by restriction endonuclease Mbo II and Bsa I of the amplified products were digested to identify 2058G (dual bands 191bp and 300bp) and 2059G (dual band 197bp and 432bp) mutation.

**Results** Among the 204 clinical samples collected, 27 cases of Tp DNA positive samples were screened out, the positive detection rate was 14%, 27 cases were amplified Tp 23S rRNA gene, the positive detection rate was 100%, 24 of which showed 2058G mutation (24/27 89%), 3 cases showed 2059G mutation (3/27 12%).

**Conclusions** The results of this study confirmed the existence of Xinjiang local Tp popular macrolide antibiotic 2058G and 23SrRNA mutations in 2059G for the first time, which is popular 2058G resistant mutants, suggesting the presence of azithromycin and erythromycin resistant strains of epidemic; exist at the same time a few 2059G mutant strains, Tp strains that currently spiramycin is sensitive.

PO15-024

**Clinical significance of abnormal expression of IL-21 inpatients of GH**

Shi Gong, Qiao Liu, Qing-Shan Li

*Hainan Provincial Hospital of Skin Disease*

**Objective** To explore abnormal expression of IL-21 in the role of GH and clinical significance in GH, in order to

provide a new clue for diagnosis and treatment of GH.

**Methods** Using ELISA to detect the level of IL-21 in all the subjects' serum. To apply T test to compare the difference of IL-21 between GH patients and normal people. To apply Pearson correlation to test the relation of IL-21 and T cell subpopulations and Immunoglobulin.

**Results** The average level of IL-21 in GH group is  $(26.75 \pm 7.38)$  pg/ml, and in normal group is  $(16.10 \pm 2.99)$  pg/ml. We can conclude that IL-21 in GH patients' serum is obviously higher than normal people. The difference between two groups has statistically significant ( $P < 0.01$ ). The Correlativity analyzing between the level of IL-21 and Immunoglobulin in GH patients' serum, and T cell subpopulations. Using Pearson correlation to find out the level of IL-21 correlated positively with the level of T cell subpopulations in GH patients' serum ( $P < 0.01$ ); IL-21 and Immunoglobulin have no correlation ( $P > 0.05$ ).

**Conclusion** IL-21 take part in the pathogenesis of GH and play important role. IL-21 and T cell subpopulations could have harmonious effects during pathogenesis of GH.

PO15-025

### Changes of the Serum IL-21 Levels in the patients with genital herpes before and after valciclovir joint thymopeptid enteric-coated tablets therapy

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**Objective** To study the cellular immunity function of genital herpes (GH).

**Methods** The levels of serum IL-21 in 30 cases of patients with GH before and after Valciclovir joint thymopeptid enteric-coated tablets therapy were determined by double antibody sandwich ELISA.

**Results** The patients with GH had lower serum IL-21 compared with those of normal control group. The serum IL-2 level after valciclovir joint thymopeptid enteric-coated tablets therapy was higher than that of before therapy.

**Conclusions** This study suggests that the cellular immunity function of GH might be decreased. Valciclovir joint thymopeptid enteric-coated tablets therapy might have some significant effect on the decreasing GH relapse and eliminating incubative infection of GH.

PO15-026

### Sensitive detection of *Treponema pallidum* DNA from the whole blood of patients with syphilis by the nested PCR assay

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**Objective** The aim of this work was to investigate the application of the nested polymerase chain reaction (PCR) assay for the detection of *Treponema pallidum* (TP) DNA from the blood of patients with different stages of syphilis.

**Methods** In this study, a nested PCR method targeting the *Tpp47* and *polA* genes (*Tpp47*-Tp-PCR and *polA*-Tp-PCR) was developed to detect TP-DNA in whole blood samples collected from 262 patients with different stages of syphilis (84 primary syphilis, 97 secondary syphilis, and 81 latent syphilis patients).

**Results** The PCR assay detected *T. pallidum* DNA in 53.6% and 62.9% of the patients with primary and secondary syphilis, respectively, which was much higher than the detection levels in patients with latent syphilis (7.4%) (both  $P < 0.001$ ). For primary syphilis, a low RPR (0-16) was correlated with a higher detection rate of TP-DNA, while for secondary syphilis, the higher detection rate of blood TP-DNA was correlated with higher blood RPR titers (at or beyond 32). For latent syphilis, TP-DNA was only detectable by PCR in the early phase of the latent infection. Thus, blood RPR titers were correlated with the blood *T. pallidum* burden, but the correlations varied with primary and secondary syphilis.

**Conclusions** Nested PCR is a sensitive method for detecting blood TP-DNA and is especially useful for detecting

early syphilis including primary syphilis and secondary syphilis. The findings also suggest that the PCR assay may be used to complement other methods to enhance the diagnosis of syphilis.

PO15-028

### Prevalence and genotype of Human Papillomavirus in different sites of condyloma acuminatum patients

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**Objective** To investigate the prevalence and distribution of HPV subtypes in different sites of condyloma acuminatum patients.

**Methods** Ninety patients diagnosed with CA were recruited, and exfoliated cells scraped from the lesion surface at different sites (perianal, anal canal, cervix, vagina, vulva, penis, urethra, glans, and scrotum) were tested for HPV types and loads.

**Results** A total of 168 sites were infected with HPV in the 90 CA patients. The highest infection rate was found in perianal (46.7%). Multi-site infections were predominated slightly (56.7%), especially in the perianal combined with other sites (43.3%), and penis was the most common single infection site (18.8%). Up to 4 types HPV infection was found in one patient's one site at the same time, the multiple HPV infections were prone to occur in perianal (9.5%), penis (6.5%), followed by anal canal, cervical, and glans (4.8%). Totaling 15 subtypes of HPV were detected in the perianal which was the most diverse, and LR-HPV detection rate was significantly higher than HR-HPV ( $P < 0.05$ ) in all sites. Besides, the initial loads of HPV in the glans were remarkably higher than other sites ( $P < 0.05$ ), followed by penis and perianal. After completion of three rounds ALA-PDT, the HPV loads were significantly lower than the initials ( $P < 0.05$ ).

**Conclusions** Multi-site and multi-genotype infections are the predominant incidence in CA patients, which have increased the difficulty of treatment and risk of recurrence. ALA-PDT can effectively reduce the viral loads, improve the prognosis of CA patients.

PO15-029

### Secondary syphilis presented with impetigo-like lesions: A rare case report

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A 25-year-old unmarried man referred to our department with a 4-week history of multiple, disseminated cutaneous pustules, erosions, and crusts on the face. Prior to our observation, the patient had been diagnosed with impetigo in grass-roots hospital and topical mupirocin had been applied without improvement for 5 days. On examination, there were multiple, disseminated pustules, erosions, and yellowish, impetigo-like scales on the face, and a mild diffused lymphadenopathy was appreciable. No other mucocutaneous lesions or systemic symptoms were observed. He admitted to multiple unprotected sexual contacts with his college girlfriend in the past 4 years. The initial diagnosis we considered was infectious diseases, such as impetigo, AIDS-associated penicilliosis marneffeii or cryptococcosis. Based on these considerations, Serum HIV and syphilis test, and pathogen culture of the skin tissue were performed. The results showed enzyme-linked immunosorbent assays for human immunodeficiency virus (HIV) and cultures for bacteria and fungus were all negative, but serological tests of treponema pallidum particle agglutination (TPPA) and rapid plasma reagin (RPR; titre 1: 16) were positive. Subsequently, a swab taken from the exudative lesion and tested with the nucleic acid amplification test for TP showed a positive result. On further questioning, the patient admitted he had unprotected sexual intercourse with a strange woman 3 months ago, and he developed one non-tender ulcers on the coronal rim of his penis 2 months ago which lasted 4 weeks and spontaneously resolved. A diagnosis of secondary syphilis was established, and a single-dose treatment of intramuscular benzathine penicillin G 2.4 million units was administered. We observed a rapid resolution of the skin lesions within 14 days. A RPR test administered at

3 months after treatment was negative. We performed two times of the dark-field microscopic examination of the exudative lesion before treatment but the results were negative. Maybe the topical antibiotic treatment caused false negative results or the technique had low sensitivity in extragenital lesions.

Syphilis, a prevalent sexually transmitted disease caused by *Treponema pallidum* subspecies *pallidum*, has the reputation of the “Great Mimicker” and secondary syphilis can present with a very extensive range of clinical features. Physicians will be required to deal with increasingly unusual presentations for diagnosis and effective management of the patients.

The most commonly observed cutaneous presentation for secondary syphilis is a generalized, non-pruritic, papulosquamous eruption varying from pink to violaceous to brown, with mucous membrane involvement. Palmoplantar lesions are a helpful finding as they suggest the possibility of secondary syphilis. Pustular lesions or impetigo-like lesions are less common and pose a greater diagnostic challenge. Pustular lesions more commonly affect individuals with poor health and malnutrition, and coinfection with HIV is frequent. We report a case of secondary syphilis presenting with impetigo-like lesions in a 24-year-old man. Our present case was malnourished with a height of 176 centimeters and weight 51 kg, but enzyme-linked immunosorbent assays for HIV were negative at the time of diagnosis and at 3 months after treatment. This case illustrates why syphilis earned the name of the “Great Mimicker”, and it is worth checking for syphilis in perplexing rashes such as impetigo-like lesions, especially one that fails to respond to standard therapy.

PO15-030

### Circulating microRNAs as potential biomarkers for the diagnosis of neurosyphilis

Kai-Qi Wu, Su-Fang Zhang, Ping-Yu Zhou

*Shanghai Skin Disease Hospital*

**Background** Syphilis is a chronic infectious disease caused by *Treponema pallidum*. If not promptly treated, it may cause irreversible neurological damage, which termed as neurosyphilis (NS). MicroRNA expression profiles in peripheral blood cells have been implicated for potential biomarkers in various diseases, but the feature of microRNA expression profiles in syphilis and neurosyphilis is largely unknown. As the diagnosis of neurosyphilis remains a great challenge, novel methods are urgently needed for improved diagnosis and treatment of the disease. Therefore, the goal of this study was to investigate the microRNA expression profiles in peripheral blood mononuclear cells (PBMC) of syphilis and neurosyphilis patients and to identify the candidate biomarkers to distinguish neurosyphilis and syphilis from healthy controls (HC).

**Methods** We performed miRNA microarray to analyze miRNAs expression profiles in PBMCs from 6 patients with neurosyphilis (NS), 8 patients with secondary syphilis (SS), and 5 HCs. The differently expressed miRNAs were further validated in 33 NS patients, 31 SS patients, and 30 HCs using taqMan miRNA real-time qPCR (qRT-PCR).

**Results** The results of the microarray assay showed that 39 miRNAs were differentially expressed in SS and NS patients compared with HC. We then randomly selected 13 miRNAs to validate their expression levels in the same samples used in microarray assay by qRT-PCR. All showed an upregulation trend in SS and NS compared with HC. We then evaluated the expression of the 13 miRNAs in cohort II (including 76 samples) using qRT-PCR. The results showed that the average expression level of 9 miRNAs were higher in SS than in NS, and the rest of 4 miRNAs expression were lower in SS than in NS. ROC curve analysis using related RNA expression levels of the 13 miRNAs in 76 samples showed that the AUC (area under the curve) value was 1.00 for HC and SS, 1.00 for HC and NS, 1.00 for HC and SS plus NS, and 0.968 (95% CI, 0.927 to 1.0) for SS and NS.

**Conclusions** This represents that identified differentially expressed miRNAs in PBMC of neurosyphilis patients compared with healthy controls, and the results suggest that miRNAs in PBMC may be used as novel noninvasive biomarkers for neurosyphilis diagnosis.

PO15-031

**HSV-2 related recurrent genital ulcerate disease: Where we are?**

Ping-Yu Zhou

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**Background** Herpes simplex virus-2 (HSV-2), the causative pathogen of Genital Herpes, is famous for its sexually transmitted and its leading cause of genital ulcerate disease (GUD) globally. As estimated, there were 417 million people aged 15–49 years worldwide with HSV-2-infected, equivalent to global prevalence of 11.3% in 1912. Though the global burden of HSV-2 is not clearly known, assuming 10–20% of HSV-2 infected people have symptoms, and most recurrent genital ulceration is related to HSV-2, an estimated 40–80 million people could have recurrent GUD worldwide.

**Methods** We systemically reviewed the published data of HSV-2 related recurrent genital ulcerate disease. And Patients infect with HSV-2 who with recurrent genital herpes and without recurrent genital herpes seen at the Shanghai Skin Disease Hospital were identified. The characteristics of these patients, laboratory findings were analyzed.

**Results** A total of 100 patients were involved in this study. Of those, 50 were with recurrent genital herpes and 50 without recurrent genital. The immune response seems play an important role in the pathogenesis of the recurrent genital herpes.

**Conclusions** The immune response seems play a important role in the pathogenesis of the recurrent genital herpes.

*PO16 Therapies*

PO16-010

**Comparison of micro-insulated needle radio frequency (RF) versus carbon dioxide (CO2) laser in the treatment of syringoma**

Mi-youn Park, Ji-young Ahn, Hye-jung Jung, Hong-lim Kim, Joo-yoon Bae, Jae-in Lee, Dong-hyek Jang

*National Medical Center*

Syringoma is a benign adnexal tumor derived from intradermal eccrine ducts, it predominantly occurs in women at puberty or later in life. Although syringoma is a common disease, treatment is difficult and unsatisfactory because of removal of lesion can lead to cosmetic defects such as hyperpigmentation or scarring due to epidermal damage. Herein, we report a case of eruptive syringoma treated with 2 lasers, microinsulated needle RF and CO2 laser. A 30-year-old woman presented with a 2-year history of syringoma on her neck. Patient was treated with two devices in a spilt manner. Left side lesions were treated with CO2 laser ablation 1 session, skin lesion showed improvement but some scars remained. Right side lesions were treated with microinsulated needle RF, 3 times, interval times between sessions were 1 to 2 months. After treatment, right side lesions showed a marked a marked reduction in the size and number of their lesions, they had no adverse effects such as scarring and hyperpigmentation related to epidermal damage. Treatment of syringoma with micro needles RF, which are insulated at the point of epidermal contact, has been shown to result in good cosmetic outcomes due to selective destruction of dermal lesions. Herein, we suggest that micro-insulated needle RF can be easy, safe, and effective therapeutic option for the treatment of syringoma, although further investigation and long-term follow-up are needed.

PO16-011

**Large steatocystoma multiplex of forehead successfully treated with a novel 1,927 nm diode laser**

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To treat steatocystoma multiplex (SM), a wide range of therapeutic attempts have been made. Aspiration techniques for large cysts have been used, but a high rate of recurrence may have been observed. Surgical excision had a limitation due to development of scarring. A novel 1,927 nm diode laser has been proven its clinical efficacy for the lipolysis according to relatively selective fat and water absorption. Herein, we present a case of SM successfully treated with a 1,927 nm diode laser which has not been reported in the literatures. A 41-year-old man presented with multiple skin-colored nodules and masses on forehead, neck, and trunk. The lesions have lasted 10 years without any subjective symptom. A biopsy specimen from the forehead lesion showed an irregularly shaped, large cyst in the dermis. The lining stratified squamous epithelium has sebaceous gland lobules within and close to it. From these findings, he was diagnosed with SM. For the facial SMs we performed the laser treatment with the novel 1,927 nm diode laser due to the numerous numbers, giant sizes, and site of lesions. After 5 sessions of treatment during 4 months, the facial SMs were clinically improved. Histopathologic examination of the laser-treated site revealed disappearance of cystic structures. He had no recurrence of the lesions at 4-month follow-up. Therefore, the 1,927 nm diode laser with a fiber-type laser emitting tip can be one of the treatment modalities of SM and further studies will be needed to validate better and consistent treatment effects.

PO16-012

**Hair growth-promoting effect of sphingolipid-mimetic compounds**

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**Background** Recently, it has been reported that sphingolipid-mimetic compounds have hair growth-promoting effect. These are expected to be applicable to patients with low response to conventional therapies. This study aimed to investigate the hair growth-promoting effect of sphingolipid-mimetic compounds.

**Methods** A total of 68 patients with pattern hair loss were enrolled in this double blind study and divided into two groups: one group as an experimental group using a newly developed sphingolipid-mimetic compound lotion containing 1% ceramide-HS and the other group as a control group using a simulacrum. Both groups applied each lotion on the scalp once a day for 6 months. We evaluated daily hair loss, hair density, hair thickness, and hair length in an interval of 3 months.

**Results** Fifty eight out of 68 subjects completed this study. The amount of daily hair loss amount in the experimental group showed a tendency to decrease more than the control group. Hair density and hair thickness revealed a tendency to increase in the experimental group compared to the control group. Hair length was found to be slightly longer in the experimental group than in the control group. There was no serious adverse event in this study.

**Conclusion** The newly developed sphingolipid-mimetic compound lotion is thought to help reduce daily hair loss, increase hair density and hair thickness, and grow hair length.

PO16-013

**Successful dose tapering of adalimumab by increasing interval between doses in treatment of psoriasis**Mi-youn Park<sup>1</sup>, Jai-il Youn<sup>2</sup>, Ji-young Ahn<sup>1</sup>, Hye-jung Jung<sup>1</sup>, Hong-lim Kim<sup>1</sup>, Joo-yoon Bae<sup>1</sup>, Jae-in Lee<sup>1</sup>, Dong-hyek Jang<sup>1</sup>

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During the past 2 decades, a more profound insight in the pathogenesis of psoriasis has led to the development biological treatments. Real-life clinical practice may require dose tapering as a therapeutic option to reduce the risk of drug-exposure and to increase cost-effectiveness and patient compliance. We report three patients managed successfully by dose tapering among patients with psoriasis who have been treated with adalimumab. Two patients of them were treated with adalimumab 40mg every other week for at least 22 times (44 weeks) from week 1 after an initial dose of 80mg at week 0. The other, who was just treated six times and then suspended for six months, got the retreatment with adalimumab for 12 weeks. The interval of injections gradually increased from three to six weeks in all of them. They have been maintaining almost clear state checked as the psoriasis area and severity index (PASI) and body surface area (BSA). We think that dermatologists need guidelines to make informed decisions about an optimal treatment regimen for an individual patient in consideration of drug-exposure risk, cost savings, and patient compliance.

PO16-014

**Two cases of wound healing by combining negative pressure wound therapy with noninvasive surgical skin closure device**

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Negative pressure wound therapy is a well-acknowledged treatment for stimulating granulation tissue growth and shrinkage of pocket lesions, but difficulty gaining horizontal wound size reduction remains a weakness of this method. Shoelace technique is a method which could speed up the horizontal wound size reduction process by advancing both sides of the wound towards each other using surgical staples and silicone rubber loops. Physicians can combine negative pressure wound therapy with this technique by placing dressing foams beneath the silicone rubber loops which are tied across the wound bed. However, pinning staples are often painful and tying loops are time-consuming. Therefore, we introduced a noninvasive surgical skin closure device consisting of hydrocolloid tapes and plastic straps as a substitute for the traditional shoelace technique. We will report two cases of successful wound closure with less invasive procedures, which were both accomplished by combining this new device with negative pressure wound therapy.

PO16-018

**A case of subungual wart invading the nail root successfully cured with surgery combined with photodynamic therapy**Min-Zhi Wu<sup>1</sup>, Liang Zhao<sup>2</sup>

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2. Institute of Dermatology, Chinese Academy of Medical Sciences

Subungual warts are common diseases caused by human papilloma virus infection. We aimed to investigate the

efficacy of surgery combined with photodynamic therapy in the treatment of subungual warts. Complete removal of skin lesion followed by 3 sessions of photodynamic therapy was performed in a patient with a relatively large subungual wart of 1.2\*0.8\*0.6 cm that invaded the nail root and was not cured by 11 sessions of cryotherapy. The wound healed after 35 days and the patient was followed up for 7 months. No recurrence was found. Surgery combined with photodynamic therapy is a good treatment method for relatively large subungual warts.

PO16-020

### **Fractional ultrapulse carbon dioxide laser ablation of xanthelasma palpebrarum: A case series**

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Xanthelasma palpebrarum is the most common type of xanthoma affecting the eyelids. It is characterized by asymptomatic soft yellowish macules, papules, or plaques over the upper and lower eyelids. Many treatments are available for management of xanthelasma palpebrarum. The most commonly used include surgical excision, carbon dioxide or erbium: YAG resurfacing lasers, nonablative Q-switched Nd: YAG laser, and trichloroacetic acid peels. Surgery and ablative resurfacing show good results with 1-2 treatments, but these methods have the disadvantage of a long down time.

We report cases of xanthelasma palpebrarum effectively treated with fractional ultrapulse carbon dioxide laser and thus the fractional ultrapulse carbon dioxide laser is an effective and safe therapeutic alternative in treatment of xanthelasma palpebrarum.

PO16-021

### **Mycobacterium Chelonae/abscessus complex infection of the limbs: a challenging clinical case**

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*Guangzhou Institute of Dermatology*

*Mycobacterium chelonae* (*M. chelonae*) and *Mycobacterium abscessus* are nontuberculous mycobacterium (NTM) with nonspecific symptoms. We present an interesting case of cutaneous *M. chelonae/abscessus* complex in a 26-year old female. The current disease began as two erythematous nodules with slight ulcer and pustules in the left lower limb which developed to abscess soon. After drainage with the abscess, the lesion presented with a five-month history of multiple painless cutaneous lesions at various stages of development: nodules, pustules and hemorrhagic crusts, as well as small erosions and ulcers distributed on the both lower limbs. Subsequent biopsy and culture studies were consistent with a mycobacterial infection. Culture of skin sample revealed *M. chelonae/abscessus* complex. The diagnosis of *M. chelonae/abscessus* complex is often difficult to establish without prior suspicion of the disease, but can be confirmed with culture. We will describe the symptomatology and diagnosis of this case.

PO16-026

### **Therapeutic observation and mechanism analysis of the lymphoplasma exchange therapy in refractory severe immune related dermatosis**

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**Objective** To discuss the clinical efficacy and adverse reactions of lymphoplasma exchange of refractory severe

immune related dermatosis such as Toxic epidermal necrolysis (TEN), DRESS syndrome, pemphigus vulgaris, bullous pemphigoid, paraneoplastic pemphigus and to analyze the potential mechanism.

**Methods** Clinical and laboratory data before and after lymphoplasma exchange(LPE) were collected from 8 patients, who were conventional therapy invalid or with multiple-organ function impaired, with different severe immune related dermatosis in the Department of Dermatology of Xiangya Hospital from May 2013 to October 2015, analyzed retrospectively, to evaluate efficacy of LPE and to observe the adverse reaction.

**Results** Symptoms had been significantly improved in six of eight patients and eventually recovered; one patient was resisted to high-dose glucocorticoids and immunosuppressive therapy and the rash was relieved during LPE but was repeated after treatment; the patient with bullous pemphigoid showed the explosive blister on the next day after LPE treatment; and we considered it as an allogeneic plasma allergic reaction.

**Conclusions** Lymphoplasma exchange (LPE) is effective for the treatment of severe autoimmune related dermatosis, especially for those patients who were resisted to high-dose glucocorticoids and immunosuppressive therapy. LPE can be chosen as the preferred treatment for patients who have diseases with predominantly cellular disorder accompanied by multiple-organ damaged. Furthermore, potential transfusion reaction and allergic reactions should be noticed.

PO16-035

### **Plum-blossom needling enhanced efficacy of ALA photodynamic therapy for the treatment of Bowen's disease**

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**Background** 5-Aminolevulinic acid photodynamic therapy (ALA-PDT) has been an effective treatment for Bowen's disease (BD). Plum-blossom needling may enhance topical drug delivery by creating vertical channels. This study aimed to evaluate the effect and adverse reactions of ALA-PDT with plum-blossom needling (PBN) on BD compared to ALA-PDT alone.

**Methods** Totally 43 lesions from 24 patients were randomly assigned into two groups. For the ALA-PDT-PBN group, PBN was used to tap the skin before 10% ALA cream topical application and irradiation with narrow band LED ( $633\pm 10$  nm, 100-200 J/cm<sup>2</sup>). For the ALA-PDT group, lesions were applied 10% ALA without pretreatment of needling prior to light irradiation.

**Results** There was a significant difference in the CR rate in 6 weeks ( $P<0.05$ ) but no difference in the recurrence rate between the 2 groups ( $P>0.05$ ). Fewer treatments sessions were required and higher PpIX fluorescence were observed for the group of ALA-PDT-PBN ( $P<0.05$ ). There was no difference of pain intensity numeric rating scale values between the 2 groups ( $P>0.05$ ). None of the lesions progressed to invasive carcinoma.

**Conclusions** The results suggested that compared with ALA-PDT alone, ALA-PDT with pretreatment of PBN can possibly achieve better efficacy by enhancing ALA delivery for the treatment of Bowen's disease.

PO16-038

### **Survey on usage and perception for acne patches and cosmetics advertised as effective against acne, compared with hospital treatments**

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*National Medical Center*

**Background** There are well established therapies for acne based on the severity of it. But patients also seek other ways to treat their acnes including acne patches and cosmetics advertised as effective against acne.

**Methods** We surveyed acne patient's usage and perception of acne patches and cosmetics advertised as effective against acne, compared with hospital treatments. We have surveyed patients who visited our dermatologic clinic for acne vulgaris. The survey was conducted by questionnaires.

**Results** Total 51 acne patients were analyzed. Approximately 61% of acne patients used acne patches. They used acne patches infrequently and usually applied them on the inflammatory lesions after self-extraction. About 71% of acne patients used the cosmetics. The most used types of the cosmetics were as follows: Toner Cleansing foam, Lotion. 84% of acne patients were improved after hospital treatment but only 45% and 17% were improved after using acne patches and the cosmetics, respectively. The patients who used acne patches rarely check what ingredients there are and 59% of the patients who used the cosmetics check the ingredients of the cosmetics. Overall satisfaction about hospital treatments was significantly higher than that of acne patches and the cosmetics. 65% and 43% of acne patients answered the cosmetics could replace topical medication and oral medication for acne, respectively.

**Conclusions** Acne patches and cosmetics advertised as effective against acne were less effective and favorable than hospital treatments. However, patients misunderstood about the cosmetics. Dermatologists need to educate patients to use the most appropriate products along with existing acne therapies.

PO16-039

### **ALA-PDT promotes IL-1 $\beta$ secretion and pyroptosis in SZ95 human sebocytes via activation of NLRP3 inflammasome**

Yu-Fen Zhang

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**Background** ALA-PDT (5-aminolevulinic acid mediated photodynamic therapy) is known to be an effective method in treating acne vulgaris. In this study, we investigated the mechanism of NLRP3 inflammasome and cell pyroptosis activation after ALA-PDT in human SZ95 sebocytes.

**Methods** Human SZ95 sebocytes were treated with ALA-PDT at different dosages. DCFDA was carried out to detect reactive oxygen species (ROS) production. Real-time PCR was implemented to observe the expression of NLRP3 and caspase-1 mRNA. ELISA was applied to detect cytokines release after ALA-PDT, and western blotting was used to analyze pyroptosis related protein target. To observe SZ95 cell survival after ALA-PDT, Annexin V-FITC/PI was used to detect cell death. To further note the impediments occurred after ALA-PDT, NAC antioxidants and ZVADFMK caspases inhibitor were also used in this study.

**Results** Increased in the dosage of ALA-PDT enhance the level of NLRP3, caspase-1 and IL-1 $\beta$  secretion. ROS generation was observed after ALA-PDT treatment. Conversely, NAC antioxidants and Caspases inhibitor down-regulate the level of NLRP3, caspase-1 and IL-1 $\beta$  secretion.

**Conclusion** The underlying mechanism of ALA-PDT on sebaceous glands *in vitro* inducing ROS generation, NLRP3, caspase-1, and IL-1 $\beta$  activation in the pyroptotic pathway may play a role in the treatment of acne vulgaris. Therefore, oral antioxidants should not be taken before ALA-PDT as it may reduce the treatment efficacy by inhibiting cell pyroptosis.

PO16-048

### **Multi-layered polyurethane foam technique as a skin graft bolster**

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**Background** Skin graft is one of the basic techniques for reconstruction of the skin defect. Generally, tie-over dressing was performed for fix the skin graft. However, this technique was complicated and was needed two or more persons. This study was designed to evaluate Multi-Layered Polyurethane Foam Technique as a skin graft bolster.

**Methods** Totally 128 patients who visited our Dermatology clinic between April 2011 and March 2016 (mean age: 66.4 years; 71 men, 57 women) and who was performed full thickness or split thickness skin graft were recruited for this study. Age, parts, operating surgeon, area, and graft survival rate was analyzed.

**Results** There was some variability in the graft survival rate among operating surgeons in tie over dressing. However

the equable graft survival rate was observed in Multi-Layered Polyurethane Foam Technique ( $p < 0.05$ , Wilcoxon rank sum test).

**Conclusion** Multi-Layered Polyurethane Foam Technique was a simple and stable dressing technique as a skin graft bolster.

PO16-050

### **Comprehensive treatments combined with ALA-PDT for 2 cases of malignant skin tumors**

Ling Yang

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**Objective** To show clinical efficacy of comprehensive treatments combined with ALA-PDT for 2 cases of malignant skin tumors.

**Methods** The first case of a basal squamous cell carcinoma on left forehead was given subtotal tumorectomy combined with 4 times of ALA-PDTs. The second case of a squamous cell carcinoma on left tempus was given cryotherapy or carbon dioxide laser therapy combined with 8 times of ALA-PDTs.

**Results** Both cases showed desirable curative effects.

**Conclusions** For some malignant skin tumors, radical excision became unavailable because of large tumor size or low state of physical condition. So, comprehensive palliative treatments combined with ALA-PDT, which might not only avoid further hurting but also improve therapeutic safety and compliance, are worthy of clinical promotion.

PO16-051

### **Clinical efficacy of Scalpoo® shampoo regarding increase in hair thickness and decrease in hair shedding**

Byung In Ro, Jong Baik Kim, Hoo Min Choi, Eun Jung Ko

*Myongji Hospital, Myongji Medical Foundation*

**Background** Using shampoo to treat hair loss is studied and used worldwide. Different ingredients are used in these shampoo regimens and its effectiveness vary. Shampoo used in our study composes biotin, nicotinamide, dextranthenol, zinc pyrithione, herbal ingredients, a combination that focuses on increasing in hair thickness and decrease in hair shedding. The aim of this study was to evaluate the clinical efficacy in hair thickness and shedding of 24 weeks of treatment with Scalpoo® shampoo.

**Methods** Total of 30 patients, 15 male pattern hair loss (MPHL) and 15 female pattern hair loss (FPHL) started the 24 week study. Investigator and experts' assessment score were evaluated by a seven point grading scale ranging from -3 (extremely worsen) to +3 (extremely improved). Patient's subjective score were assessed with the aid from patients' questionnaire.

**Results** Scalpoo® shampoo significantly reduced the extent of hair shedding by 43.6% ( $P < 0.05$ ), counted by patients once every week. Hair thickness and hair number measured by Folliscope imaging during 3 visits showed both a significant increase of 11.4% and 20.6% respectively ( $P < 0.05$ ,  $P < 0.05$ ). Investigator's assessment score evaluated by our institute marked average of 1.17. Investigator's assessment score evaluated by other institutes' experts scored 1.37 and 0.87. Additionally, subjective score recorded as mostly satisfactory and effective in decrease in hair shedding out of a questionnaire.

**Conclusion** Scalpoo® shampoo appears to be both satisfying and effective when used for the improvement in hair thickness and shedding for both MPHL and FPHL patients.

PO16-055

**A case of extensive burn injury treated with artificial dermis and cultured epithelial autograft**

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The use of cadaver allograft is effective in promoting wound bed preparations, especially for that in extensive burn to be treated with cultured epithelial autograft. However, supply of cadaver allograft is very limited in Japan. We here report a case of extensive burn treated with artificial dermis to prepare wound bed, skin graft meshed with split-thickness and a high magnification, and cultured epithelial autograft over them. A 50 years old female was injured by gas explosion and developed deep dermal burn (DDB) and deep burn (DB), which covered 7.6% and 25.4% of the total body surface area (TBSA), respectively. The burn lesions involved her right anterior chest, right upper arm, right axilla, nape, back, buttocks, and right thigh. Eight days later, we underwent surgical debridement, and put artificial dermis to prepare wound bed. After 3-4weeks, we grafted meshed split-thickness skin with a high magnification, and covered it with cultured epithelial autograft. Although artificial dermis is vulnerable to bacterial infection, it improved circulatory dynamics, reduced pain of the patient and labors of wound dressing by medical staffs. Based on the favorable wound bed preparation, approximately 70% of the cultured epithelial autograft has remained and adopted on the lesion, resulting in not only early epithelization of the ulcer but also soft and good texture of the healed skin lesions. The combination of artificial dermis and cultured epithelial autograft may be a good option in the treatment of extensive dermal burn.

PO16-059

**Study of pain level and relative factors during ALA-photodynamic therapy: A clinical retrospective analysis**

Zhe Zheng, Yun-Feng Zhang, Ling-Lin Zhang, Lei She, Bo Wang, Xiu-Li Wang

*Shanghai Skin Disease Hospital*

**Objective** To investigate pain level and its relative factors during ALA-Photodynamic therapy (PDT) and to provide a stronger basis for clinical pain relief.

**Methods** The database contains 274 patients in total, including 118 acne patients, 30 AK patients, 126 condyloma acuminata patients. The pain score with NRS score during treatment and the patient's gender, age, lesions location, ALA concentration and energy density were registered in different time spots during ALA-PDT from 0 to 20 minutes. One-way analysis of variance, two independent samples t-test, linear regression equation and logistic regressive were used to analyze the influencing factors.

**Results** The average pain score in PDT was highest in the patients with actinic keratosis ( $7.27 \pm 0.69$ ), acne was ( $5.13 + 0.94$ ), and condyloma acuminata was the lowest ( $4.45 + 1.06$ ) ( $P < 0.05$ ). The highest pain score in patients with actinic keratosis, acne and condyloma acuminata was 7,5,4 respectively and occurred at the 4th minute, 4th minute and 5th minute respectively. The pain score of males was higher than females in all of the three diseases ( $P < 0.05$ ). The pain score of head and face diseases ( $5.56 + 1.24$ ) was higher than that of the external genitalia ( $4.45 + 1.06$ ) ( $P < 0.05$ ). The lesion area was positively correlated with the pain score ( $P < 0.05$ ). The pain score of patients with high energy density ( $7.30 + 0.75$ ) was higher than patients using low energy density ( $5.27 + 0.93$ ) ( $P < 0.05$ ).

**Conclusion** Factors such as disease types, gender, lesions location, lesions area and energy density all can influence the pain level of patients.

PO16-001

**Clinical observation of Qinglanxiaoyou decoction in treating multiple verruca vulgaris**Sheng-Yuan Hua<sup>1,2</sup>, Jie Chen<sup>1,2</sup>, Wei-Wei Mao<sup>1,2</sup>, Xin Li<sup>1,2</sup>, Bin Li<sup>1,2</sup>

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**Objective** To evaluate the clinical efficacy and safety of Qinglanxiaoyou decoction in treating out-patients with multiple verruca vulgaris.

**Methods** 60 out-patients with multiple verruca vulgaris were randomly divided into two groups, each group for 30 patients. The treatment group patients were treated with Qinglanxiaoyou decoction to soak the affected area, once a day; The control group patients were injected with Polyinosinic-polycytidylic acid, once a week, two weeks for a course. Both of the treatment group and the control group had a total treatment of 8 courses. The effect of the treatment was evaluated based on skin condition, DLQI(Dermatology life quality index,DLQI) score and adverse reactions before and after treatment.

**Results** Both of the treatment group and the control group had 1 case falling off and 1 case with adverse reactions. As for the remaining 28 cases, the total effective rate of the control group was 85.71%, while the treatment group had a similar effective rate of 89.29% (P>0.05); On the other hand, the DLQI score of the treatment group was significantly higher than the control group (P<0.05).

**Conclusion** Qinglanxiaoyou decoction was proved to be an effective and safe way to treat patients with multiple verruca vulgaris, and it can improve the quality of their life. So it is worthy being popularized and widely used in clinic.

PO16-003

**A new strategy for angiolymphoid hyperplasia with eosinophilia on auriculae**

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**Objective** To explore the new methods for angiolymphoid hyperplasia with eosinophilia.

**Methods** Surgery combined with foam sclerotherapy was used to treat angiolymphoid hyperplasia with eosinophilia.

**Results** After three sessions of foam sclerotherapy, lesions on posterior auricular region of left ear were resolved obviously. The surplus lesions were removed by surgery. At 6-month follow-up, treatment result was excellent.

**Conclusions** Foam sclerotherapy is effective for angiolymphoid hyperplasia with eosinophilia. In intractable case, surgery combined with foam sclerotherapy is a selectable method.

PO16-004

**ALA-PDT suppressing the cell growth through Akt-/Erk-mTOR-p70 s6k pathway in human SZ95 sebocytes in vitro**Wen-Jie Liu<sup>1</sup>, Qianqian Wang<sup>1</sup>, Jiang Tuo<sup>2</sup>, Yufeng Chang<sup>1</sup>, Jiayi Ying<sup>1</sup>, Min Jiang<sup>1</sup>, Christos C. Zouboulis<sup>3</sup>, Lei-Hong Xiang<sup>1</sup>

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**Background** Topical 5-aminolevulinic acid mediated photodynamic therapy (PDT) is known to be an effective

method in treating acne vulgaris and other sebaceous gland-related diseases. The therapeutic mechanisms of ALA-PDT still remain undetermined. In this study, we aimed to investigate the upstream of mammalian target of rapamycin (mTOR) signaling cascade after ALA-PDT on cell growth of human SZ95 sebocytes.

**Methods** Human SZ95 sebocytes were treated with different concentration of 5-ALA PDT. Western blotting was used to detect and analyze the protein expression level of P-Akt (T308)/Akt, P-Akt (S473)/Akt, P-Erk/Erk, P-AMPK $\alpha$  (T172)/AMPK, P-AMPK $\alpha$ 1 (S485)/AMPK $\alpha$ 2 (S491)/AMPK, P-PRAS40/PRAS40, RagC. Meanwhile, mTOR pathway activator IGF-1 and mTORC1 inhibitor rapamycin were added to observe the interferences of P-p70 S6K/p70 S6K after ALA-PDT.

**Results** The mTOR pathway inhibitor rapamycin enhanced the effect of ALA-PDT in SZ95 cells through decreasing the level of P-p70 s6k. Conversely, mTOR pathway activator IGF-1 reversed it. ALA-PDT reduced the level of P-Akt (T308), P-Erk, P-AMPK $\alpha$  (T172), P-AMPK $\alpha$ 1 (S485)/AMPK $\alpha$ 2 (S491) and P-PRAS40, and no change was observed in the level of Rag C.

**Conclusion** ALA-PDT suppresses the cell growth in SZ95 cells through Akt-/Erk- mTOR -p70 s6k pathway rather than PRAS40-/RagC- mTOR pathway

PO16-005

### **A case of pruritus pigmented reticulated patches over the upper body.**

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A 21-year-old woman presented with pigmented reticulated patches distributed symmetrically on the neck and trunk with intense pruritus for 5 years. Her medical and family histories were unremarkable. Physical examination revealed multiple excoriated erythematous papules and plaque with mottled pigmentation distributed in the chest, intermammary, neck, and mid-lower back symmetrically (Panels A and B). Urinary ketone test was trace. A skin biopsy taken from the patient's left shoulder revealed a lichenoid interface dermatitis, mixed inflammatory cell infiltrate as well as melanophages and intraepidermal necrotic keratinocytes. A diagnosis of prurigo pigmentosa was made. The patient was treated with minocycline 100mg per day and the lesion showed remission after few weeks of treatment.

PO16-006

### **Positive effects of hydrogen-water bathing in patients of psoriasis and parapsoriasis en plaques**

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**Objective** Psoriasis and parapsoriasis en plaques are chronic inflammatory skin diseases, both representing therapeutic challenge in daily practice and adversely affecting the quality of life. Reactive oxygen species (ROS) has been evidenced to be involved in the pathogenesis of the chronic inflammatory diseases. We now report that hydrogen water, an effective ROS scavenger, has significant and rapid improvement in disease severity and quality of life for patients with psoriasis and parapsoriasis en plaques.

**Methods** Our study conducted a parallel-controlled trial in 41 patients with psoriasis and a self-controlled trial in 6

patients with parapsoriasis en plaques to evaluate the efficacy of hydrogen-water bathing.

**Results** At week 8, our trial revealed 24.4% of patients (10/41) receiving hydrogen-water bathing achieved at least 75% improvement in Psoriasis Area Severity Index (PASI) score compared with 2.9% of patients (1/34) of the control group ( $P_c = 0.022$ ,  $OR = 0.094$ ,  $95\%CI = [0.011, 0.777]$ ). Of patients, 56.1% (23/41) who received bathing achieved at least 50% improvement in PASI score compared with only 17.7% (6/34) of the control group ( $P = 0.001$ ,  $OR = 0.168$ ,  $95\%CI = [0.057, 0.492]$ ). The significant improvement of pruritus was also observed ( $P = 3.94 \times 10^{-4}$ ). Besides, complete response was observed in 33.3% of patients (2/6) of parapsoriasis en plaques and partial response in 66.7% (4/6) at week 8.

**Conclusion** Our findings suggested that hydrogen-water bathing therapy could fulfill the unmet need for these chronic inflammatory skin diseases.

PO16-007

### Combining Steri-Strip with fusidic acid cream to treat the surgical wound on the face

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**Objective** Due to the importance of the cosmetic role, surgical wound on the head and face always attract a lot of attention. The discussions about how to improve the appearance, to avoid the complication after surgery have never stopped. This research aimed at observing the effect and safety of combining Steri-Strip with fusidic acid cream to treat the surgical wound on the face.

**Methods** 60 patients were randomly divided into 3 groups. Combination group (A), fusidic group (B) and contrast group (C) each had 20 patients. Group A were given combining therapy of Steri-Strip with fusidic acid cream for the surgical wound; group B were merely given topic use of fusidic acid cream for 7 days; group C were respectively given mupirocin for 7 days. 2 and 7 days after operations, the EASI and itching score (IS) were evaluated, as well as the germiculture of the surgical wounds. One month after operations, the Vancouver scar scale (VSS) and the gross satisfaction scales (GSS) were assessed.

**Results** No significant difference was noticed by EASI among the three groups at the 2nd day after surgery, while group C achieved lower scores than other two at the 7<sup>th</sup> day after surgery. No significant difference was noticed among the three groups as IS was concerned. At day 2, the group A demonstrated lower positive rate of germiculture than group B and C. While at day 7, the group C showed higher positive rate than other two. Group A achieved better scores in VSS and GSS assessment.

**Conclusion** Combining Steri-Strip with fusidic acid cream to treat the surgical wound on the head and face, has revealed promising effect to improve the appearance and prevent potential infection.

PO16-009

### Autologous cultured epidermal grafts as a novel surgical approach for acral vitiligo

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**Background** The effect of treatment of acral vitiligo is poor. This study aimed to evaluate the efficacy of a modified procedure using autologous cultured epidermal grafts transplantation in the management of vitiligo lesions over acral areas and joints.

**Methods** We used autologous cultured epidermal grafts as a novel surgical approach for acral vitiligo to treat 200 vitiligious lesions.

**Results** Of the 200 treated lesions, 123 had regained > 75% re-pigmentation and 55 had regained 50-75% re-pigmentation. The remaining 22 lesions, which were all on the distal fingers or toes, had a poor response.

**Conclusion** Autologous cultured epidermal grafts transplantation, as a useful therapy for acral vitiligo, could produce some degree of re-pigmentation in stable resistant acral vitiligo patients.

PO16-015

### **Rosai-Dorfman disease primary to face: A case report**

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Rosai-Dorfman disease (RDD) as a rare benign tissue cell proliferative lesions also known as sinus cell hyperplasia with large lymphadenopathy. With low incidence, the etiology of the disease is unknown. The situation of skin damage is the only performance (cutaneous-RDD, CRDD) is more rare. Recently, our institution received one suspecte patient with dozens of solid papules on the face, sizes of the skin lesion without itching range from miliary to soybean. Histopathology demonstrated that nodular lesions were constituted by a large number of tissue cells, plasma cells, lymphocytes, eosinophils and neutrophils in the subcutaneous dermis. The dyed pale pink lesion tissue cells were rich in cytoplasm, within that lymphocytes and swallowed red blood cells could be found. Immunohistochemistry prompted that S100 tissue cells, small amount of CD3 cells, small amount of CD20 cells and CD163 cells were positive. CD30, CD1- $\alpha$  and EREP had opposite characteristics. Ultimately, we diagnosed the patient as CRDD synthesized all kinds of factors. In view of unspecific treatment, we suggested the patient to take thalidomide, 100 mg per day. After 45 days, the rash subsided and there was no recurrence after one year follow-up.

PO16-016

### **Efficacy and safety of 2% supramolecular salicylic acid compared with 5% benzoyl peroxide/0.1% adapalene in the acne treatment: A randomized, split-face, open-label, single-center study**

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**Background** Topical drugs for mild to moderate acne include adapalene(ADA) and benzoyl peroxide (BPO). Supramolecular salicylic acid (SSA), a modified SA preparation, is considered as a new effective therapeutic schemes. To compare the safety and efficacy of 2% supramolecular SA (2%SSA) with 0.01% adapalene plus 5% benzoyl peroxide (5%BPO+0.1%ADA) for treatment of facial acne.

**Methods** This was an open-label, split face, randomized and single center clinical trial .Subjects with mild to moderate acne were enrolled. 2% SSA cream were randomly applied on one side of the face while 5%BPO+0.1%ADA gel was applied on opposite side for 28 days. The numbers of acne lesions, along with side effects of the targeted area were evaluated by the investigators at day 0, day 14 and day 28. Skin water content, TEWL and skin lightening indexes were measured at the same time.

**Results** A total of 31 of acne patients completed the trial. Dates showed that 2% SSA had similar effects to 5%BPO+0.1%ADA in reducing papules/pustules (47.9% vs. 49.8%), non-inflammatory lesions (43.1% vs. 42.7%) and total lesions (44.1% vs. 45.6%; all  $P>0.05$ ) at day 28. The skin barrier (skin hydration value and TEWL value), skin brightness (L\*-value) and erythema (a\*-values) indicators showed no statistically differences in the left and right sides of the face ( $P>0.05$ ).

**Conclusion** 2% SSA has a similar efficacy with 5%BPO+0.1%ADA in mild to moderate acne treatment. This might be a useful pilot study that could be used to support further larger clinical trials.

PO16-017

**A case of nasorostral sporotrichosis was misdiagnosed**Li Zhang<sup>2</sup>, Ke-Ying Guo<sup>1,2</sup>, Zhen-Ying Wang<sup>2</sup>, Sheng-Hua Wang<sup>3</sup>

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**Background** A 47-year-old female presented pustules and scabs on his nose tip for one month, with itching and pain. An isolated “small blister” appeared at the tip of the patient's nose one month ago before the visit. After the scratch, the blisters increased and papules appeared, gradually forming a plaque with pustules and scabs, which formed ulcers. Grassroots hospitals were treated with “penicillin” for 20 days for anti-inflammation (other drugs and doses were unknown). While the skin lesions progressively thickened, expanded and eroded, irregularly accompanied with itching and pain. In order to clearer diagnosis and better treatment, the patient came to Shandong Provincial hospital.

**Methods** After inquiry, there was no other unwell during the illness, moreover, no history of anamnesis, dermatosis, trauma and living in an epidemic area. Physical examination showed that proliferative plaque about the 2 cm x 3 cm with tawny scabs were observed at the tip of the nose, and ruddy granules were presented under the scabs. On auxiliary examination, (1) The results on bacterial culture and sensitive test of pustule contents and tissue exudates were negative. Similarly, special stains also failed to reveal any acidfast bacilli, and multiple acid-fast tissue cultures were negative. (2) Samples from effusion of pustules were screened by KOH microscopic and fluorescent staining examination. We observed fungi by KOH and fluorescently labeled hyphae by fluorescent staining. (3) We harvested the pyogenic fluids at 37 °C for fungal culture, after 2 weeks, which grew taupe filamentous colonies of Sporothrix-like species. Under the microscope, we saw that the sporothrix was clustered.

**Results** According to the patient's medical history, symptoms, signs, direct microscopic examination, and fungal culture, the patient can be diagnosed as sporotrichosis (fixed cutaneous). The patient was treated with itraconazole and terbinafine, it are obviously removed for lesions.

**Conclusion** As regards the reason for misdiagnosis of this patient may be related to the following factors: (1) The deep mycosis were connected to trauma, such as chromoblastomycosis and sporotrichosis. While this patient had no history of traumatic injury or foreign body implantation, leading the attending doctor to ignore the infection of deep mycosis. (2) For similar cases, if bacterial culture with sensitive test, fungal microscopy with culture, and/or histopathologic examination are conventionally performed before treatment, the time needed for clinical definite could be shortened. (3) As regards the endemic fungal infections, sporotrichosis showed obvious regional distribution characteristics with raised number of cases. Therefore, when clinicians visit patients, face the different diseases should take into account the regional characteristics, such as south or north, urban or rural. (4) Due to the limited conditions of grassroots hospitals, if the corresponding auxiliary examinations cannot be completed, scientific experimental treatment could be conducted first. When antibiotic treatment is ineffective for one week, it should be considered that the patient may not be sensitive to drugs, or the diagnosis is inaccurate. The drug or the treatment direction should be changed promptly. The general principle of exploratory drug use is that, when suspicion of infectious dermatosis, antibiotic treatment is first used for one week. If it is not effective, antifungal drugs are used for two weeks. If drugs still invalid, then doctors should change to anti-acid bacilli drugs. Either, as soon as possible, transferring the patient to the superior hospital so that the patient can be treated timely and perfectly.

PO16-019

**Successful treatment of a case of cutaneous dirt-adherent disease using compound resorcinol ointment**

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Cutaneous dirt-adherent disease (CDAD) also known as dermatosis neglecta or dermatitis neglecta, is a rare disease

with undetermined etiology. The skin condition was first reported by Sakamoto Kuniki in 1960. In 1995, Poskitt *et al* renamed this disease as dermatitis neglecta. The common regimens for this disease are topical applications of alcohol cotton swab, or tazarotene. Also, oral antifungal agents in combination with topical antifungal therapy have been used in a few cases with *Malassezia* infection. In this study, we find that topical application of compound resorcinol ointment is very effective in the treatment of CDAD. A young woman with thick, asymptomatic, dark brown adherent crusts on both sides of her face for 6 years was diagnosed as CDAD. Mycologic cultures of facial crusts were found to be positive for *Malassezia furfur*. The crusty skin lesions are completely resolved by topical regimen with compound resorcinol ointment for two weeks without oral antifungal agents. No recurrence was found in 5 month. We demonstrated that the formula of our compound resorcinol ointment is simple and stable but effective.

PO16-022

### **Ferroptosis may serve as negative regular in the pathogenesis of melanoma**

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As an iron-dependent form of regulated necrosis, ferroptosis is implicated in various human diseases, including ischemic organ damage and cancer. However, its role in the pathogenesis of melanoma is still illusive. In this study, we report a crucial role of ferroptosis in melanoma suppression and investigate the potential mechanism. Our data indicated that ferroptosis was a negative regular of melanoma. For the mechanism, such process was only related to DNA damage. We concluded that ferroptosis could suppress the growth of melanoma, which may be induced by DNA damage.

PO16-023

### **ALA-PDT in a patient with secondary perineum EMPD, palliative care rather than treatment**

Shu-Zhan Shen, Pei-Ru Wang, Guo-Long Zhang, Jie Ji, Yun-Feng Zhang, Xiu-Li Wang

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Extramammary Paget's disease (EMPD) is a rare intraepithelial neoplasm arising in apocrine rich area of the skin. It is divided into primary and secondary EMPD based on whether there is an underlying malignancy, either local apocrine cancers or distant neoplasms. Therefore, all patients with EMPD should undergo an extensive and targeted cancer workup, depending on the histological staining pattern and the location. Surgical removal is considered the mainstay of treatment for patients with EMPD. Herein, we present a case of secondary EMPD where photodynamic therapy was effective in terms of improving symptoms and quality of life. Owing to preexisting comorbid conditions, large area of disease and risk of post-surgery mutilation and functional impairment, surgery could not be elected for this patient, necessitating nonsurgical approach.

PO16-024

### **Aminolevulinic acid photodynamic therapy for recalcitrant facial flat warts**

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Here we report one case of recalcitrant facial flat warts which was successfully treated by photodynamic therapy. A 22-year-old female suffered from skin-colored flat warts on her forehead and cheeks of six years duration. She was treated with cryotherapy or CO2 laser for many times in the last few years in the external hospital. However, the flat warts still existed and were apparently resistant to therapy. The patient received cryotherapy firstly and followed by

topical photodynamic therapy. 20% aminolevulinic acid (118 mg in 0.5 ml sterile water for injection) was applied to the skin for a 3-h incubation. The light-emitting diode (LED) exposure duration was 20 min. The treatment procedure was repeated with an interval of 1–2 weeks. After four treatments with ALA-PDT, most lesions were eliminated. Focal erythema and postinflammatory pigmentation on the ALA-PDT treatment area were observed. Erythema disappeared in the next few days, and pigmentation was persisted for few weeks. Some studies have suggested that ALA-PDT is a optimal scheme for the treatment of recalcitrant flat warts on the face in Chinese patients. Superior efficacy is found in elevated or active period lesions with mild side effects. ALA-PDT is a safe and effective alternative for intractable facial flat warts.

PO16-025

### **Clinical observation of treating alopecia areata with total glucosides of white paeony capsules combined with CO<sub>2</sub> He-Ne laser**

Xuan Li

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**Objective** To observe the clinical effect on treating alopecia areata with total glucosides of white paeony capsules combined with CO<sub>2</sub> He-Ne laser.

**Methods** 76 patients were divided into two groups. 37 Patients (37 cases) in the control group and 39 patients (39 cases) in the treated group. All the patients in the treatment groups and the control group were treated with oral cystine tablet and external fructus psoraleae tincture. The treated group were given eating Total Glucosides of White Paeony Capsules added CO<sub>2</sub>He-Ne Laser for 2 months.

**Results** The total effective rate were 87.18% in treated group and 51.35% in control group ( $\chi^2=6.909$ ,  $P<0.01$ ). A significant difference can be seen both in total effective rate between the two groups.

**Conclusion** The effect of Total Glucosides of White Paeony Capsules combined with CO<sub>2</sub> He-Ne Laser for the treatment of Alopecia Areata is sure.

PO16-027

### **Curative effect observation of AHA combined hyaluronan dressing in treating 60 acne vulgaris cases**

Ping Liu, Lan Liu, Wen-Ni Lei, Dan-Dan Luo

*No.2 Renmin Hospital Chengdu*

**Objective** To observe the curative effect of AHA combined hyaluronan dressing in treating acne vulgaris.

**Methods** 130 patients with acne vulgaris were randomly divided into treatment group and control group. In the treatment group, 60 cases received fruit acid treatment in skin lesions, along with hyaluronan dressings before and after AHA treatment. In control group, the 70 cases only received AHA treatment; applied 2 months as a course of treatment and the efficacy was evaluated after one course of treatment.

**Results** The total effective rates of treatment group and control group respectively were 92.86% and 81.67%, and there was a significant difference between the two groups ( $P<0.01$ ). The curative effect of treatment group was better than that of control group.

**Conclusions** AHA combined with hyaluronan dressing can significantly improve the curative effect of treating acne vulgaris. It is safe with better tolerance and worthy of clinical promotion.

PO16-028

**Function of comprehensive nursing intervention in treating acne vulgaris by AHA**

Ping Liu, Lan Liu, Wen-Ni Lei, Yu-Dan Wang

*No.2 Renmin Hospital Chengdu*

**Objective** To explore the curative effect of AHA in treating acne vulgaris combined with comprehensive nursing intervention.

**Methods** 90 patients with acne vulgaris received treatment during January-June 2017 were selected and randomly divided into treatment group and control group. The control group received conventional group while treatment received comprehensive nursing intervention on this basis. The clinical effect and adverse effect between two groups were compared during the one-month follow-up visit.

**Results** The AHA tolerance in treatment group was higher than that of control group with better total effective rate, and the difference was statistically significant ( $P < 0.05$ ).

**Conclusions** Comprehensive nursing intervention can significantly improve the curative effect of treating acne vulgaris by AHA. It will enhance patients' adherence and reduce complication.

PO16-029

**Application of nursing intervention in treating slight and moderate acne patients by supermolecule BHA**

Ping Liu, Lan Liu, Wen-Ni Lei, Qin Zhang

*No.2 Renmin Hospital Chengdu*

**Objective** To observe the curative effect of supermolecule BHA in treating acne.

**Methods** 130 patients with acne vulgaris received supermolecule BHA in treatment and appropriate nursing intervention. Applied once every two weeks and three times were taken as a course of treatment; the efficacy was evaluated after one course of treatment.

**Results** The skin lesion decline rate of slight and moderate acne treated by supermolecule BHA with proper nursing intervention was 86.3%, and the total effective rate was 92.1%.

**Conclusions** The supermolecule BHA combined nursing intervention can significantly improve the curative effect of treating slight and moderate acne. It is safe with better tolerance and worthy of clinical promotion.

PO16-030

**Photodynamic therapy with topical imiquimod treated a Bowen's disease secondary to leukoplakia in the vulvar region successfully: A case report**Yuan Cao<sup>1</sup>, Chuan Ma<sup>1</sup>, Jin-Song Han<sup>2</sup>, Chun-Lei Zhang<sup>1</sup>*1. Dermatology Department, Peking University Third Hospital**2. Gynecology Department, Peking University Third Hospital*

A case of "bowenoid" leukoplakia in the vulvar region of a 62-year-old woman is presented to our knowledge for the first time. Clinically the lesion appeared as a simple vulva leukoplakia and histologically shown in toto, but followed red patch and erosions appeared on the same area, deteriorated to a larger size ulceration quickly in next month. The histological result of the second biopsy showed "typical Bowen's disease". consecutive photodynamic therapy (PDT) with intermittent topical 5% imiquimod treatment was successful, the patient achieved a complete clinical remission.

PO16-031

**Anti-tumor effects of dihydroartemisinin alone and in combination with methotrexate in cutaneous T-cell lymphoma cells**

Qian Zhang, Yi-Meng Wang, Chun-Lei Zhang

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**Background** Cutaneous T-cell lymphoma (CTCL) is a heterogeneous group of skin-homing T cell tumors. There are many interventions for CTCL, but no cure exists. Dihydroartemisinin (DHA) is an anti-malarial drug which has anti-tumor ability including inhibition of cell proliferation and induction of tumor cell apoptosis. DHA is safe and well tolerated clinically. When combined with other treatment methods, its anti-tumor effect can be improved experimentally. Methotrexate (MTX), a folic acid antagonist, is often used alone or in combination with other means for CTCL therapy. However, whether DHA has the same therapeutic effect on CTCL is still unknown. To evaluate the anti-tumor effects of DHA alone and in combination with MTX in CTCL.

**Methods** HH cells and Hut78 cells were incubated with different concentrations of DHA, MTX alone or combined with DHA. MTS assay and trypan blue staining were conducted to estimate cell viability. Flow cytometry was performed to detect cell apoptosis and analyze cell cycle. Real-time PCR and Western-blotting analysis were used to quantify mRNA or protein expressions of apoptosis-associated genes and DNA damage related genes, respectively. Statistical analysis was performed using SPSS 21.0 software, and bilateral  $P < 0.05$  was considered statistically significant.

**Results** DHA could significantly inhibit the proliferation of CTCL cells in a time-dependent and dose-dependent manner, and the combination of DHA and MTX showed significantly stronger inhibitory effects. The results of flow cytometry showed that DHA could induce apoptosis of CTCL cells in a concentration-dependent manner, and the percentage of apoptotic cells in the combination treatment group was significantly higher than in the DHA group or MTX group. Compared with the control group, all treatment groups showed a significantly increased proportion of cells at the G0/G1 phase and decreased at G2/M phase. Compared with control group, mRNA and protein expression of *P53*, *NOXA*, *BAX*, *CASP3*, *H2AX*, and *ATM* were increased. Combination group had stronger effects than both single drug group.

**Conclusions** DHA can inhibit cell proliferation via induction of apoptosis and modulation of cell cycle distribution, and enhance the anti-tumor effects of MTX in CTCL cells. DHA alone and in combination with MTX may be a potential therapeutic option in the treatment of patients with CTCL.

PO16-032

**Observation of the curative effect on chronic urticaria with acupoint catgut embedding therapy**

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**Objective** To observe the curative effect on chronic urticaria with acupoint catgut embedding therapy.

**Methods** The objects of study are chronic urticaria patients who are put into two groups. Group one refers to the group treated with acupoint catgut embedding therapy. The patients are treated every 15 days for 3 times, involving 15 acupoints each time. Group two refers to the patients treated with Levocetirizine Hydrochloride Tablets (5 mgqd) combined with the injection of Diphenhydramine Hydrochloride Injection through acupoints (1 mlqod, two acupoints each time). The patients are treated for 45 days consecutively, and a follow-up study is conducted on the 46th day after the treatment and 90th day after the end of treatment to observe the curative effect, recurrence rate and adverse reaction.

**Results** Of all the 112 cases, group one achieves 73.21%, 19.51% and 1.78% respectively in effectiveness, recurrence rate and adverse reaction compared with that of 71.42%, 57.5%, and 8.92% in group two. There is no statistic difference between the two groups on the 46th day after the treatment in effectiveness and adverse reaction ( $P > 0.05$ ), while in recurrence rate, there is significant statistic difference ( $P < 0.01$ ).

**Conclusion** The effectiveness and adverse reaction of treating chronic urticaria with acupoint catgut embedding

therapy and Levocetirizine Hydrochloride Tablets combined with the injection of Diphenhydramine Hydrochloride Injection through acupoints are similar, but acupoint catgut embedding therapy has a longer lasting effect and lower recurrence rate, and therefore, worth being popularized in clinical practice.

PO16-033

### Successful treatment of three cases of perianal giant condyloma acuminatum with Paiteling

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Case 1: A-51-year old man presented with verrucous neoplasm in anus for three months. The diagnosis was condyloma acuminatum. Half of the skin lesions were treated by laser in the local hospital. Because of strong pain and large wound, he refused laser treatment again and came to our hospital. Physical Examination: There is 10×10cm verrucous neoplasm in perianal area. Application of Paiteling for three months, the lesions disappeared. He continued the treatment of latent virus. Case 2: A-42-year old man presented with verrucous neoplasm in anus for six months. He never went to a doctor. The mass increased gradually and had infiltrative basement. The whole wart regressed after four months treatment of Paiteling without recurrence in two months. Case 3: A-56-year old man presented with verrucous neoplasm in anus for five months. He had received laser treatment for three times and photodynamic therapy for two times. But It relapsed. Physical Examination: there were 15 x 5cm and 15 x 6cm symmetric verrucous growths in the perianal area. Due to the excessive volume of skin lesions, and the recurrence of laser and photodynamic therapy, Patient resisted to laser therapy. Application of Paiteling 20 days, the lesions disappeared. He has received subclinical infection treatment now. **Conclusion** 1. As a topica, Paiteling therapy in the treatment of perianal giant condyloma acuminatum is effective. 2. Scar could be not existed or very small in the Paiteling therapy. 3. Paiteling therapy can be used as a supplement and extension of laser therapy.

PO16-034

### Conventional vs. daylight 5-Aminolevulinic Acid-Photodynamic therapy for actinic keratosis of the face and scalp: a randomized and prospective study in China

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**Background** In Asia, conventional photodynamic therapy (C-PDT) is an effective therapy for actinic keratoses (AKs) with some unmet needs. Especially severe PDT-associated pain results in low treatment willingness. Daylight photodynamic therapy (DL-PDT) is a more simple and tolerable treatment that was shown to be with the same efficacy with C-PDT in Europe. However, China has limited data about that. To evaluate the efficacy, safety and tolerability of DL-PDT vs. C-PDT in treating AKs in China.

**Methods** This randomized and prospective study was conducted in Shanghai, China. Sixty patients with AKs (grades I–III) of the face and scalp were randomized to two groups (DL-PDT and C-PDT). Patients were evaluated at baseline, two weeks after each treatment and 1 month after 3 times treatment (once a fortnight). Endpoints included efficacy (lesion response at two weeks after each treatment and 1 after the last treatment), safety and tolerability (PDT-associated pain during each session and patients' preference 1 month after treatment).

**Results** Totally 55 patients completed the study. At month 1, the overall lesion clearance rate with DL-PDT (88.9%) was similar to C-PDT (92.9%). However, in some special part (eyebrow and ear et al), C-PDT resulted to higher rates of cured lesions than DL-PDT. Results were not supported by statistical significance. DL-PDT was nearly painless and better tolerable. And patients were in more favor of DL-PDT.

**Conclusion** DL-PDT was demonstrated to be a better tolerated, nearly painless and effective treatment but may have less efficacy than C-PDT in some special part.

PO16-036

**Psoriasiform dermatitis with high fever in an old man: Bazex syndrome**

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Acrokeratosis paraneoplastica of Bazex is a rare paraneoplastic dermatosis commonly associated with squamous cell carcinoma of the upper aerodigestive tract. The main features of this paraneoplasia is the presence of symmetrical papulosquamous eruptions, nail dystrophy and skin scaling usually localized in the acral distribution. We present a case of Bazex Syndrome with generalized keratotic plaques, a high fever and associated thymoma treated successfully with IVIG and tumorectomy.

A 62-year-old man presented with a 2-month of itchy patches on the face and distal extremities, 2-week of generalized erythematous-violaceous scaly plaques and 3 days of fatigue and fever. Physical examination revealed generalized adherent scaly psoriasiform plaques and moderate hyperkeratotic plaques on dorsal and palmoplantar region. A skin biopsy showed hyperkeratosis, parakeratosis, acanthosis, subtle basal vacuolar changes, pigmentary incontinence and dermoepidermal junctional and perivascular lymphocytic infiltration. Computed tomography identified a 10cm×7cm smooth mass in the left part of mediastinum medium, which was finally confirmed to be a low-grade malignant thymoma by cytologic analysis. NSAIDs, neotikason and methylprednisone were unsuccessful. He was continuously febrile and generalized significant hyperkeratosis progressed rapidly in 2 weeks. Acrokeratosis paraneoplastica associated with thymoma was considered. Two courses of IVIG injection followed by surgical removal of the thymoma resulted in great improvement of both general and skin conditions.

The key clinical feature is psoriasiform hyperkeratosis with fever in an old man with thymoma. Taking the psoriasiform hyperkeratosis, unspecific microscopic features and thymoma together, acrokeratosis paraneoplastica dermatosis was considered. Histopathology and DIF examination help to rule out psoriasis, lichen planus, paraneoplastic pemphigus (PNP) and graft-versus-host disease (GVHD) like disease. We supposed the fever in this patient is associated with the immunological inflammation mediated by thymoma-generate active product just like PNP. Intravenous administration of immunoglobulin (IVIG) was prescribed to improve the patient's general situation for its anti immunological inflammatory effect depending on interactions with pathogenic autoantibody, complement system, cytokines, and endothelial cells. And certainly, total resection of the concomitant tumor is the most effective treatment for the skin lesions of acrokeratosis paraneoplastica

PO16-037

**Clinical evaluation on the treatment of acute eczema with ozonated water hydropathic compress combined with desonide cream**

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**Objective** To evaluate the efficacy and side effects of ozonated water hydropathic compress combined with desonide cream in the treatment of acute eczema.

**Methods** 60 cases of acute eczema patients were randomly divided into experimental group and control group, 30 cases in each group. The test group was treated with ozonated water wet compress and then coated with Desonide cream, the control group was treated with 3% boric acid solution wet and then coating Desonide cream, two groups were oral cetirizine hydrochloride tablets, treatment for 2 weeks. Eczema area and severity index (EASI) were scored before treatment, after treatment for 1 week and after 2 weeks for treatment respectively.

**Results** There was no significant difference in the EASI score between the two groups before treatment ( $P > 0.05$ ). The EASI scores of both groups decreased at 1 week and 2 weeks after treatment, and there was a significant difference compared with that before treatment ( $P < 0.05$ ). After 1 and 2 weeks of treatment, the EASI score of the test group was obviously lower than the control group (both  $P < 0.05$ ); Among the clinical observations, after 1 week of treatment, the erythema, edema / papules and exfoliation scores of the test groups were all lower than those of the control group (all  $P < 0.05$ ), and the scores of mossy, exudation / scab and area were lower than those of the control

group(all  $P>0.05$ ). After 2 weeks of treatment, erythema, edema / papules and area scores of the test group were lower than those of the control group (all  $P<0.05$ ), and the scores of exfoliation, mossification, exudation / scab were lower than those of the control group(all  $P>0.05$ ). 1 and 2 weeks of treatment ,The effective rate (86.7%, 96.7%) in the test group was higher than that in the control group (76.7%, 83.3%), and the difference was statistically significant ( $P<0.05$ ). No obvious adverse reactions occurred during the treatment of the two groups of patients.

**Conclusion** Ozonated water wet compress combined with Desonide Cream and 3% boric acid solution wet compress combined with Desonide Cream treatment of acute eczema have a good effect; the former has better efficacy and no obvious adverse reactions occur during the treatment.

PO16-040

### **Radiotherapy in keloids treatment**

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There is no standardized treatment strategy for keloids over present literatures. Radiotherapy combined with surgical resection was considered as one of the most effective treatment plans for keloids. In this paper, we here provide a comprehensive review over this issue that radiotherapy applied in keloids in recent years, several aspects including radiation types (X-ray radiation, electron beam radiotherapy and brachytherapy), radiation parameters, safety and effectiveness, in order to provide new ideas for the optimal treatment of keloids.

PO16-041

### **Clinical Observation of acupoint-injection of Astragalus injection solution comblined with CO<sub>2</sub> He-Ne laser in the treatment of alopecia areata**

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**Objective** To observe the clinical effect of Astragalus injection solution comblined with CO<sub>2</sub> He-Ne on Alopecia Areata.

**Methods** 90 Alopecia Areata patients were randomly divided into 2 groups: treatment group ( $n=45$ ) and control group( $n=45$ ). Both the patients in treatment group and control group were treated with oral cystine tablet, 50mg each time, 3 times each day and external fructus psoraleae tincture, 2 times each day. The treatment group were treated with acupoint-injection and CO<sub>2</sub> He-Ne Laser. In addition, points selected for acupoint-injection of Astragalus injection solution were Shenshu, Feishu, Zhusanli, and Xuehai. And the both time, the skin lesion were irradiated with CO<sub>2</sub> He-Ne Laser. One month constituted one course. After 2 coursees, the therapeutic effects were assessed. During the course of treatment, record the effective rate and adverse reaction were evaluated and recorded for both groups. Blood routine, urinalysis, examination of stools and hepatic and renal functions were detected before and at the end of trail.

**Results** The total effective rate of the treatment group was 77.78%; and 46.67% in the control group. There was a significant difference between the two groups ( $P<0.01$ ). All the patients had no obvious and severe adverse reaction and blood routine, urinalysis, examination of stools and hepatic and renal functions turned out to be normal before and at the end of trail.

**Conclusion** It is effective and safety for acupoint-injection of Astragalus injection solution comblined with CO<sub>2</sub> He-Ne Laser in the treatment of Alopecia Areata.

PO16-042

**Clinical experience of treating dermatosis and cypridopathy with 5-aminolevulinic acid-photodynamic therapy (ALA-PDT)**

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Photodynamic Therapy (PDT) is an emerging technology in China for treating dermatosis and cypridopathy. As this technology has such advantages as safety, high efficiency and less side effects, its application is expanding. Due to the medicine-instrument combination of this therapy and a certain degree of discomfort in the course of treatment, psychological care is the primary task before treatment. Medical workers shall make a difference between different parts and different diseases, to achieve the best curative effect of this therapy for various diseases. Brief introduction is as follows: 1. Maxillofacial disease: Common indications are moderate to severe acne, refractory flat warts, actinic keratosis and basal cell carcinoma, etc. Pretreatment is needed for thick skin damage. During the treatment, eyes shall be strictly protected. After treatment, cold spraying or cold compress with ice bag for cooling shall be given. Strictly keep out of the sun within 48 hours after treatment. 2. Anal condyloma acuminatum: Fully extend the local skin, evenly apply the medicine and make light spot evenly exposed to the affected part. When necessary, the concentration of photosensitizer can be increased, energy of light increased or light application time prolonged properly to enhance the curative effect. 3. Vulva condyloma acuminatum: Avoid the menstrual period. Urinate and defecate prior to topical application of medicine, clean the vulva and shave the pubic hair if necessary. 4. Urethral condyloma acuminatum: Since the urinary meatus is narrow, the patient feels discomfort in the course of topical application of medicine, so encouragement and enlightenment for patient is required. Medicine can only be applied to the correct position with the full cooperation of the patient. The patient must urinate prior to topical application of medicine and drink plenty of water and urinate for several times after treatment to avoid burning pain or even adhesion of the treated part. To sum up, Only when the operator is familiar with key operating points of applying this therapy to various diseases and gives the patient corresponding health education and proper care, can this therapy achieve the best effect in the treatment of various diseases.

PO16-043

**Comparison of the efficacy and safety of fractional CO2 laser and fractional Er: YAG laser for the treatment of xanthelasma palpebrarum: A randomized split-face controlled trial**

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**Background** Xanthelasma palpebrarum is a common cutaneous xanthoma occurring on or around the eyelids. Recently, laser therapy has been well-recognized for its efficacy and safety in treating xanthelasma. To compare the efficacy and safety of fractional CO2 laser and fractional Er: YAG laser for the treatment of xanthelasma palpebrarum through a randomized split-face controlled study.

**Methods** 30 patients with bilateral xanthelasma (60 skin lesions) were recruited. The two sides of each patient's face were randomly divided into the treatment group and the control group. The treatment group has received either fractional CO2 laser therapy or Er: YAG laser therapy. Fractional CO2 laser therapy was used with Deep Fx mode, energy of 15 mJ, 15 % power density, 1-3 passes. Er: YAG laser therapy was used with MSP mode, energy of 20 mJ, 20% power density, and 1-3 passes. They received up to 5 treatments, with a 4-week interval. Efficacy and safety of each laser therapy were evaluated based on the degrees of lesion improvement, reported adverse reactions.

**Results** The average age of the recruited patients, consisted of mainly females, was 53.7 years old. The percentages of patients who achieved 75% lesion clearance rate or above after five treatments of fractional CO2 laser or fractional Er: YAG laser were 100 or 80%, respectively. After 3 or 4 sessions fractional CO2 laser was also higher (62% VS. 38%; 90% VS. 55 % respectively). No serious adverse events were reported during either type of laser treatment.

**Conclusion** While fractional CO2 laser therapy and fractional Er: YAG laser therapy are both effective and safe in

treating xanthelasm, it requires fewer numbers of fractional CO<sub>2</sub> laser therapy to achieve the same lesion clearance rate.

PO16-044

### Treatment of rosacea with photodynamic therapy in Chinese patients: a pilot study

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**Background** Rosacea is a common chronic cutaneous disorder which is characterized by flushing, erythema, papulopustules and telangiectasia. The pathogenesis of the disease is still unknown. A multifaceted approach is necessary to control the disease because of its relapse course. Therefore, additional treatments options are desirable to achieve a complete remission. In this context, aminolaevulinic acid–photodynamic therapy (ALA-PDT) is a well established approach for cutaneous cancer and precancerous lesions. It appears as a recent alternative treatment to inflammatory disease, including acne vulgaris. However, little is known about the effect and safety of ALA-PDT in the treatment of rosacea in Chinese patients with Fitzpatrick skin type III and IV. To investigate the efficacy and safety of ALA-PDT in the treatment of rosacea with erythematotelangiectatic type and papulopustular type.

**Methods** Twenty rosacea patients with the type of erythematotelangiectatic or papulopustular were enrolled and treated by ALA-PDT. 5% 5-aminolevulinic acid in an oil-in-water emulsion was applied to the lesions and occlusion with plastic film for 2h, and the lesions were irradiated with 100 mW/cm<sup>2</sup>, 80J/cm<sup>2</sup>, 635 nm red light for 15 minutes in each treatment with four times at 10-days intervals. The severity of flushing, erythema and telangiectasia, numbers of inflammatory lesions, values of VISIA Red images, subjective symptom (including itching, pricking, burning, *et al*) were recorded at baseline and at weeks 4, 12 and 24 after the last treatment. Adverse effects were recorded at each treatment and follow-up visit.

**Results** After 24 weeks, every patients treated by ALA-PDT showed clinical improvement compared with before ( $P < 0.01$ ). Clinical symptoms of inflammatory lesions disappeared completely in all patients. Subjective symptoms, including flushing, itching, pricking, burning *et al*, were vanished and without any relapse during the follow-up visit period. The main side effects of ALA-PDT were pain, erythema, swelling and post-inflammatory hyperpigmentation. All side-effects were transient and all the patients could tolerate. No case showed dissatisfied with therapeutic outcomes.

**Conclusions** 5-aminolevulinic acid photodynamic therapy (ALA-PDT) is an effective and safe approach in the treatment of rosacea with the type of erythematotelangiectatic or papulopustular, in controlling the clinical manifestations and reducing the subjective symptoms.

PO16-045

### 5-aminolevulinic acid photodynamic therapy in refractory vulvar lichen sclerosus et atrophicus

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**Background** Vulvar lichen sclerosus et atrophicus (VLSA) is a chronic inflammatory skin disease of unknown etiopathology that mainly affects postmenopausal and perimenopausal women. The primary clinical symptoms of VLSA are itching, burning pain, and dyspareunia that can results in the decrease of patients' quality of life. The traditional therapies include topical corticosteroid ointment, topical calcineurin inhibitors, estrogens, et al are not very effective for patients in the treatment of VLSA. To evaluate the effectiveness and safety of 5-aminolevulinic acid mediated photodynamic therapy (ALA-PDT) in the treatment of vulvar lichen sclerosus et atrophicus.

**Methods** Ten patients with VLSA with conventional medicine treatment failure received 5-aminolevulinic acid photodynamic therapy. 10% 5-aminolevulinic acid in an oil-in-water emulsion was applied to the lesions and occlusion with plastic film for 3 h, and the lesions were irradiated with 100 mW/cm<sup>2</sup>, 635 nm red light for 20 minutes in each treatment with three times at 2-weeks intervals. Objective and subjective symptoms and signs of the vulvar

lesions based on horizontal visual analogue scales were recorded at each treatment and 1 month, 3 month, 6 months after the last session. Meanwhile, the life of quality of patients was assessed by using dermatology life quality index (DLQI) questionnaire.

**Results** All patients received three ALA-PDT treatments with 2-weeks intervals and follow-up visit after the last treatment. Clinical symptoms of itching disappeared completely in nine patients, one patient had decreased itching symptom from severe to mild. All subjects showed improvement in lesions. The dermatology life quality index (DLQI) of all cases improved obviously after treatments. The main side effects of ALA-PDT were pain, erythema, swelling. All side-effects were transient and all the patients could tolerate. All cases showed satisfied or very satisfied with therapeutic outcomes.

**Conclusion** 5-aminolevulinic acid photodynamic therapy (ALA-PDT) is an effective and safe approach in the treatment of vulvar lichen sclerosus et atrophicus.

PO16-046

### Effects of human acellular amniotic membrane for small defect on nasal ala and nasal tip

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**Background** Various methods can be used on small defect healing on nasal ala and nasal tip which caused by excision of small benign lesion. But sometimes these methods could cause unexpected cosmetic results which come from skin tension, short of subcutaneous tissue and poor mobility. Human acellular amniotic membrane (HAAM) is amniotic membrane after decellularization, remain fiber frame and cytokine. It can help wound healing. To demonstrate the effect of HAMM on small defection caused by excision on nasal ala and nasal tip.

**Methods** Patients (46) with benign lesion on nasal ala and nasal tip were recruited to this study. Diameter of defect after excision should not more than 1cm. HAAM were randomly applied on 23 defects on nasal ala and nasal tip which caused by excision of then follow up at Day 1, 2, 3, 1 month, and 3month. Compare the results with 13 defects in control group to find out the effect on wound healing.

**Results** HAAM group display shorter hemostasis time ( $p<0.05$ ), faster healing and less discomfort( $p<0.05$ ). Use HAMM can create smaller scar ( $p<0.05$ ) that successfully maximizes cosmesis in surgical practice too.

**Conclusion** HAAM may help heal small defect on nasal ala and nasal tip healing.

PO16-047

### Clinical observation of 44 cases of 308 nm excimer light combined with phototherapy penetration oil in the treatment of localized vitiligo

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**Objective** To observe the clinical efficacy and safety of combined 308nm excimer light with phototherapy penetration oil for the treatment of Localized vitiligo.

**Methods** One hundred of eighteen cases of patients with vitiligo were randomly divided into three groups according to the table of random numbers. The treatment group ( $n=44$ ) were treated with 308nm excimer light irradiation 2 times a week and with compound kaliziran tincture twice a day and with topical phototherapy penetration oil before phototherapy, twice a week. The control group A ( $n=35$ ) were treated with compound kaliziran tincture twice a day. The control group B ( $n=39$ ) was treated with 308 excimer light irradiation 2 times a week. The course of treatment in the three groups were 16 weeks.

**Results** The efficiency of treatment group (90.70%) was significantly higher than both the control group A (51.52%) and group B (76.92%), the difference was statistically significant ( $P<0.05$ ), adverse reactions were mild in all groups.

**Conclusion** 308nm excimer light combined with phototherapy penetration oil is safe and effective in the treatment of Localized vitiligo.

PO16-049

**Clinical and pathological analysis on 25 cases with lichen planus pigmentosus**

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**Objective** To explore the clinical characteristics , diagnosis and differential diagnosis of Lichen planus pigmentosus.

**Methods** The clinical data of 25 cases of Lichen planus pigmentosus were analysed.

**Results** There are 16 females and 9 males among 25 LPP patients, the average age was 38.4 years-old. The common lesions appeared mainly purple or brown macula and patches disseminated over the trunk and limbs. Histopathology showed typical manifestations of Lichen planus pigmentosus accompanied by feature of incontinence of pigment.

**Conclusions** Lichen planus pigmentosus is rare. We should be paid attention to other disease. Histopathology exams should be performed early to conform the diagnosis and reduce diagnostic errors or missed diagnosis in some atypical cases. It can get better effect and improve the quality of life if to adopt comprehensive therapy as early as possible after diagnosis.

PO16-052

**Ultrapulse carbon dioxide laser, an option to treat mild to moderate onychomycosis? A retrospective analysis**

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**Background** Onychomycosis is a fungal infection of the nail, can cause disfigurement of the nail. Treatments of onychomycosis are not mandatory in all patients; however laser therapies have been approved for temporary nail plate clearance. This is the first study to observe the efficacy and safety of ultrapulse carbon dioxide laser for the treatment in patients diagnosed with mild to moderate onychomycosis (SCIO <12).

**Methods** We conducted a retrospective analysis of patients diagnosed with mild onychomycosis who received 4-8 sessions Ultrapulse CO2 laser in our dermatology department. It was used with Toe Touch mode, Power: 5.0 Watts, Shape Size 3.0 mm, Time Off 0.20 sec, 3 passes. They received 6-8 treatments, with one week interval.

**Results** In all 27 patients were enrolled .We found out their clinical cure rates are as following: 4 cases showed complete clearance; more than 60% of patients found significant effect (>60% newly grown nail) or improvement (≥20% and <60% newly grown nail). No serious adverse events were reported during either type of laser treatment.

**Conclusion** Recently, laser therapy has been well-recognized for its efficacy and safety in treating onychomycosis, while ultrapulse carbon dioxide laser might be effective and safe in treating in patients diagnosed with mild to moderate onychomycosis.

PO16-053

**Observation of the efficacy of anti-inflammatory combined with antifungal drugs in treating tinea incognito**

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**Objective** To observe the efficacy of anti-inflammatory combined with anti-fungal drugs in the treatment of tinea incognito.

**Methods** Clinical data of tinea incognito were collected in the Department of Dermatology, Affiliated Hospital of

North Sichuan Medical College from January 2017 to January 2018. Patients met the inclusion criteria were randomly divided into experimental group and control group. There was no statistical difference of in gender, age, course, condition of patient in the two groups. Patients in control group received oral terbinafine hydrochloride tablets once daily and topical naftifine ketoconazole cream twice per day; while patients in experimental group received oral compound glycyrrhizin capsules triple per day based on the treatment of control group. The prognosis of disease in two groups was observed at second and fourth week of treatment and the clinical efficacy of two groups was analyzed.

**Results** A total of 61 patients were selected, including 27 males and 34 females at the ratio of 0.79: 1, the average age was  $33.93 \pm 22.13$  (3-80) years old. At the second week of treatment, in experimental group, 6 cases were cured, 17 cases markedly effective, 4 cases effective and 3 cases ineffective with 20% of cure rate and 76.67% of effective rate; in control group, 2 cases were cured, 12 cases markedly effective, 13 cases effective, and 4 cases ineffective with 6% of cure rate and 45.16% of effective rate. The total effective rate in experimental group was better than that in control group ( $P < 0.05$ ). At the fourth week of treatment, in experimental group, 26 cases were cured, 3 cases markedly effective, 1 case effective, and no ineffective with 86.67% of cure rate and 96.67% of effective rate; in control group, 17 cases were cured, 12 cases markedly effective, 2 cases effective, and no ineffective with 54.84% of cure rate and 93.55% of effective rate. There was no significant difference in the total effective rate between two groups, but the cure rate of experimental group was significantly higher than that of control group ( $P < 0.05$ ). At the second week of treatment, 3 cases in experimental group showed positive in fungus examination with 10% of positive rate and 90% of fungal clearance rate. In control group, 4 cases showed positive in fungus examination with 13% of positive rate and 87% of fungal clearance rate. At the fourth week of treatment, the fungus examination was all negative in both experimental group and control group, and the fungal clearance rate was 100%. There was no significant difference in mycological efficacy between the two groups ( $P > 0.05$ ).

**Conclusion** Anti-inflammatory combined anti-fungal drugs can improve the clinical effect of tinea incognita in early stage, but there is no significant increase in fungal clearance rate.

PO16-054

### **Desonide combine with timolol for the treatment of superficial infantile hemangiomas**

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**Objective** To discuss the safety and efficacy of desonide combine with timolol for the treatment of superficial infantile hemangiomas.

**Methods** From June 2017 to December 2017, 76 infants with superficial hemangiomas were treated by topical application of Desonide cream and Timolol maleate eyedrops. Patients' clinical data including gender, age, hemangioma position and size were retrospectively analyzed. The changes of hemangioma size, color, texture and side effects during treatment were also recorded. The therapeutic effects were evaluated 2 week, and 3 months after Desonide and Timolol treatment by 2 dermatologist. The therapeutic effects were rated as ineffective, the lesion continued growing; partly effective, the lesion remission rate  $\geq 50\%$ , but had no complete remission in size, color and texture; effective, the lesion was complete remission.

**Results** A total of 56 patients received Desonide and Timolol treatment, and 20 patients were observed as controls. Two week after treatment, hemangioma became softer and smaller. Three months after treatment, the overall response was ineffective in 3 patients (5.36%), partly effective in 15 (26.79%), and cure in 38 (67.86%). Of which 5 patients' hemangioma completely disappeared, but had a small amount of angioectasis. In the control group, the overall response was ineffective in 16 patients (80%), partly effective in 3 (15%), and effective in 1 (5%). The effectiveness and regression rate of Desonide and Timolol, treated group (94.64%, 67.86%) were significantly better than that of the control group (20%, 5%) ( $P < 0.05$ ), and no side effects were observed.

**Conclusions** It is safe and effective for Desonide and Timolol to treat superficial infantile hemangiomas. Parents are easy to accept, no systemic or local adverse reactions, can be used as the preferred therapy for superficial infantile hemangioma.

PO16-056

**Clinical observation of gentamicin wet dressing combined with He-Ne laser in treatment of herpes zoster**

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**Objective** To discuss the effect of combined application of gentamycin, mixed with physiological saline, and He-Ne laser in the treatment of herpes zoster.

**Methods** Totally 300 HZ patients admitted in 2017.10 to 2018.04 were randomly treated as an observation group and a control group. On the basis of antiviral and neurotrophic drug application, the control group was cared using externally huangboye, while the observation group was cared using externally 0.9% physiological saline 40 ml plus 80,000 unit gentamicin, combined with holmium laser treatment. Then, the patient's pain intensity change, the time of blisters dryness and scab in rash were recorded.

**Results** The pain score and skin lesion score in the observation group were significantly lower than those in the control group ( $P < 0.05$ ).

**Conclusions** The combined application of gentamicin, mixed with physiological saline, and holmium laser in the treatment of herpes zoster is more effective than the control group. The patients have obvious relief of neuralgia, shorter course, lower treatment cost and higher patient satisfaction. Clinical application is recommended.

PO16-057

**Efficacy of surgery combined with ALA photodynamic therapy for Bowens disease**

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*Zhongnan Hospital of Wuhan University*

**Objective** To investigate the efficacy of surgery combined with ALA photodynamic therapy for Bowen's disease.

**Methods** Forty patients with Bowen disease from 2015 to 2017 were randomly divided into control group and observation group. Each group had 12 males and 8 females. The age range is 50-70 years and the average age is 65 years. Both groups were treated with traditional surgery, and the observation group was subsequently treated with ALA photodynamic therapy. Observe the incision size, healing speed and recurrence rate of the two groups of patients.

**Results** The lesions were completely removed in the observation group. The size of the surgical incision and the healing speed were better than those in the control group. The recurrence rate was lower than that in the control group,  $P < 0.05$ .

**Conclusion** The efficacy of photodynamic therapy combined with ALA in treatment of Bowen's disease was significant, and patient's satisfaction was improved.

PO16-058

**Clinical observation of cutaneous nerve block technique combined with intradermal injection of botulinum toxin a in treatment of postherpetic neuralgia**

Shuai Tan, Tao-Yuan Huang, Ren-Liang He, Ding-Heng Zhu, Xian Ao

*Dermatology Hospital, Southern Medical University*

**Objective** To observe the effect of cutaneous nerve block technique combined with intradermal injection of botulinum toxin A in treatment of postherpetic neuralgia (PHN).

**Methods** 20 cases of PHN were deal with cutaneous nerve block technique combined with intradermal injection of botulinum toxin A. The visual analogue scale (VAS) score was evaluated before treatment and on the 1st, 7th, 30th day

after treatment.

**Results** The VAS scores of the patients on the 1st, 7th, 30th day after treatment were significantly lower than those before treatment ( $P < 0.05$ ). There was markedly effective in 12 cases, effective in 7 cases and ineffective in 1 case, and the total effective rate was 95%. No serious adverse effects were observed.

**Conclusions** Cutaneous nerve block technique combined with intradermal injection of botulinum toxin A may be a safe and effective method for the patients with postherpetic neuralgia, with no obvious adverse and was worthy of promotion.

PO16-060

### Demethylzeylasteral inhibits the skin trafficking of CD8<sup>+</sup> T cells in patients with vitiligo through the inactivation of IFN- $\gamma$ -JAK-STAT1-CXCL10 signaling pathway in keratinocytes

Yu-Qian Chang, Wei-Gang Zhang, Chun-Ying Li

*Department of Dermatology, Xijing Hospital, Fourth Military Medical University*

**Objective** This study aimed to assess the effects of Demethylzeylasteral (ZST93) which is a novel triterpenoid monomer extracted from the xylem of *Tripterygium* roots, on melanocyte-specific CD8<sup>+</sup> T cells in patients with vitiligo.

**Methods** Normal human keratinocytes were pretreated with different concentrations of ZST93 for 1 h, followed by the stimulation of IFN- $\gamma$  and TNF- $\alpha$  for 24 h. The expression and secretion level of CXCL10 detected by RT-PCR, western blot and ELISA. The expression and distribution of IFNGR2, JAK1, p-JAK1, JAK2, p-JAK2, STAT1 and p-STAT1 was explored by western blot, immunofluorescences and flow cytometry. The migratory ability of CD8<sup>+</sup> T cells was assessed by chemotaxis assay.

**Results** We observed that ZST93 significantly decreased the expression and secretion level of CXCL10, and our transwell assay showed that under the treatment of IFN- $\gamma$  and TNF- $\alpha$ , the culture supernatants of keratinocytes pretreated by ZST93 induced less migration of CD8<sup>+</sup> T cells from patients with vitiligo compared with control. Furthermore we found that ZST93 dramatically reduced total and phosphorylated JAK1, JAK2 and STAT1 expression, and thus ZST93 significantly decrease the membrane protein expression of IFNGR2, JAK1, JAK2 and STAT1. In addition, ZST93 decreased STAT1 nuclear translocation and the cell membrane distribution of JAK1 and JAK2 analyzed by using immunofluorescence.

**Conclusions** Taken together, our results show that ZST93 inhibits chemotactic migration of CD8<sup>+</sup> T cells from patients with vitiligo via IFN- $\gamma$ -JAK-STAT1-CXCL10 signaling pathway, thus supporting ZST93 as a potential therapeutic agent for vitiligo.

## PO17 Miscellaneous

PO17-001

### Dermoscopic features of vulvar lichen sclerosis in Chinese population

Yi-Xin Luo, Jie Liu

*Department of Dermatology, Peking Union Medical College Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, China*

**Objective** To describe dermoscopic features of vulvar lichen sclerosis (VLS) in Chinese population, and to explore the application value of dermoscopy in assisting the diagnosis of VLS.

**Methods** Seventeen patients with VLS were collected from Department of Dermatology of Peking Union Medical College Hospital between August 2015 and June 2017. A total of seventy-five dermoscopic images were captured and analyzed.

**Results** The common dermoscopic features of VLS include dotted, linear, hairpin and comma vessels, irregular or branched arrangement, yellowish-white structureless area, brown or blue-gray pigmentation. The uncommon

dermoscopic features of VLS include shiny white streaks, rosettes, comedo-like openings and keratotic plugs.

**Conclusion** Dermoscopy has good application value in assisting the diagnosis of VLS.

PO17-004

### **Generalized Granuloma annulare with tuberculosis and cutis laxa: A case report**

Yi-Fei Wang, Xiu-Lian Xu

*Institute of Dermatology, Chinese Academy of Medical Sciences and Peking Union Medical College*

A 24-year-old man was presented with skin annular lesions on the trunk and extremities for four years. Two years before, cutis laxa-like lesions appeared on the inguinal and abdominal areas. In 2014, the patient was diagnosed with pulmonary tuberculosis due to the hemoptysis and then was on regular treatment with triple anti-tuberculosis drugs. Partial remission of the skin lesions was noted since then. After one year of follow-up, the patient now has recovered from tuberculosis and has stopped taking anti-tuberculosis medicine without further progress of lesions. Chest X-ray and computed tomography scan revealed post-inflammatory fibrosis in the right lung, indicating old pulmonary TB. T-cell receptor gene rearrangement revealed polyclonal gene rearrangement. Pathological examination of two biopsy specimens taken from lower abdomen and back showed similar histological changes in the palisading pattern of GA. The epidermis was normal. Multiple foci of collagen degeneration surrounded by a wall of palisaded mononuclear cell were observed in the entire dermis. Several mononuclear cell and multinuclear giant cell scattered between and around collagen bundles. Immunohistochemistry revealed that the cells were positive for CD3, CD4, CD45R0, CD68 and CD2. LCA was diffusely positive whereas Ki67 was 5% positive. Elastic fiber stain showed that the elastic fibers in dermis decreased significantly and part of them eliminated. A final diagnosis of giant-type generalized GA with cutis laxa was made.

PO17-005

### **A case of pityriasis lichenoides et varioliformis acuta with numerous CD30+ small cells**

Jisook Yoo, Taehan Koo, Eun-Jung Park, Mingyul Jo, Min-Soo Kim, Mihn-Sook Jue

*Veterans Health Services Medical Center*

An 84-year-old male visited our clinic with asymptomatic multiple scattered hemorrhagic macules and papules with crusted lesions on whole body from 3 weeks ago. He had taken systemic methylprednisone for 3 weeks at a local clinic, but the lesions did not improve. He had medical history of hypertension and did not show other systemic symptoms such as fever. The lab results showed mild leukocytosis and viral antibodies were all negative. Skin biopsies from his trunk and thigh showed mild acanthosis, necrotic keratinocyte, multiple extravasated RBC in the upper dermis and lymphocytic perivascular cellular infiltration. Additional CD30 immunohistochemical staining was conducted and was positive for numerous small cells. A diagnosis of pityriasis lichenoides et varioliformis acuta (PLEVA) with CD30+ cells was made. The lesions waxed and waned, so low dose methotrexate regimen was used and the lesions improved. PLEVA is a cutaneous inflammatory disorder characterized by erythematous papules that rapidly become vesicular. The more severe ulcerative variant is known as pityriasis lichenoides with ulceronecrosis and hyperthermia (PLUH) and presents as purpuric papulonocules with central ulcers. Patients with PLUH often have fever. PLEVA with CD30+ small cell variant can be distinguished from PLEVA in that although the lesions appear more severe as purpuric and ulcerative, it does not accompany any systemic symptoms including fever.

PO17-006

**Involvement of M1/M2 macrophages in the pathomechanisms of intralymphatic histiocytosis**

Koji Kamiya, Mariko Iwasaki, Takeo Maekawa, Mayumi Komine, Satoru Murata, Mamitaro Ohtsuki

*Jichi Medical University*

Intralymphatic histiocytosis is a rare reactive skin disorder, characterized by the accumulation of macrophages in dilated dermal lymphatic vessels. Most of the reported cases have been associated with rheumatoid arthritis (RA), but its etiology and pathogenesis still remain to be fully elucidated. We report a case of intralymphatic histiocytosis associated with RA especially focusing on the pathogenesis of the case. Macrophages are divided into two subpopulations, classically activated macrophages (M1) and alternatively activated macrophages (M2). M1 activity inhibits cell proliferation and causes tissue damage, while M2 activity promotes cell proliferation and tissue repair. In our case, both M1 and M2 characteristics were observed in the lesion. We speculate that M1 macrophages were mainly involved in the disease pathogenesis by initiating and sustaining inflammation. As a result, M2 macrophages accumulated into the lesions to suppress inflammation.

PO17-011

**Three facial aging parameters (wrinkle, elasticity and pore) highly correlated with age obtained by non-invasive measurements in 5,205 Asian**Ji Hwoon Baek<sup>1</sup>, Young Kyoung Seo<sup>1</sup>, So Jeong Kim<sup>1</sup>, Ja Hyun Ryu<sup>1</sup>, Han Jo Kim<sup>1</sup>, Min Ji Kim<sup>1</sup>, Da Jung Jo<sup>1</sup>, Eun Ju Lee<sup>1</sup>, Da Eun JEONG<sup>1</sup>, Go Woon Choi<sup>1</sup>, Da Hoon Yoon<sup>1</sup>, Ye Eun Lee<sup>1</sup>, Hyun Jin JEONG<sup>1</sup>, Lee Eun Seok<sup>1</sup>, Ahreum Choi<sup>1</sup>, So Yeon Kim<sup>1</sup>, Si Ho Choi<sup>1</sup>, Yoo Ree Lim<sup>2</sup>, Jong Hyun Kim<sup>2</sup>, Sung Min Yang<sup>2</sup>, Hye-Jin Ahn<sup>3</sup>, Min Kyung Shin<sup>1,3</sup>, Jae Sook Koh<sup>1</sup>*1. Dermapro Skin Research Center, DERMAPRO Ltd.**2. Safety Research & Quality Control Testing Division, Foundation of Korea Cosmetic Industry Institute**3. Department of Dermatology, College of Medicine, Kyung Hee University*

**Background** Aging of the skin is a complex process and is associated with morphological and chemical changes. There are many reports as a result of studying skin aging factors using non-invasive methods. However, there is a need to identify reliable skin aging factors obtained in sufficient subjects and in a properly controlled environment. The purpose of this study was to investigate the characteristics of facial skin of 8 Asian countries and to confirm the early aging parameters.

**Methods** The subjects were consisted of 5,205 healthy males and females in South Korea, Mongolia, Taiwan, Kazakhstan, Russia, Turkey, Philippines and China and who lived more than 5 years in each country were included. The age of the subjects was ranging from 20 to 59 years. Skin hydration, transepidermal water loss (TEWL), skin sebum, skin pH, skin elasticity and skin color were measured. The skin pore was measured area on the forehead, nose and both cheeks. Eye wrinkle on a crow's foot was evaluated by 3D skin imaging system.

**Results** TEWL, sebum, pore, elasticity, wrinkle, brightness on the facial skin showed statistically significant correlation with age. Among them, correlation coefficient *r* values of pore, elasticity and wrinkle parameters were over 0.5 compared to other parameters

**Conclusion** The present study suggests that the early aging parameters of the facial skin are pores, elasticity and wrinkles.

PO17-016

**A case of nevoid hyperkeratosis of nipple and areola in a male patient**

Seung Hwi Kwon, Yoo Sang Baek, Jiehyun Jeon, Hae Jun Song, Chil Hwan Oh

*Department of Dermatology, Korea University College of Medicine, Seoul, Republic of Korea*

A 25-year-old male patient presented with thickened rough surfaced black pigmentation around both areolae which had been present for 10 years. He had no underlying disease and medication history. Histopathological findings showed hyperkeratosis, papillomatosis, acanthosis, keratotic plugging, and mild perivascular lymphocytic infiltrate in the dermis, consistent with nevoid hyperkeratosis of the nipple or areola. Nevoid hyperkeratosis of the nipple and areolar (NHNA) is a rare, idiopathic disorder. It is characterized by slowly growing verrucous thickening and brown pigmentation of the areola or nipple. Levy-Frankel described three distinct types of hyperkeratosis of the nipple and/or areola. Type I is associated with an epidermal nevus. Type II is hyperkeratosis associated with other dermatoses, such as acanthosis nigricans, ichthyosis. Type III is nevoid hyperkeratosis and has no association with other dermatoses. The third type, called nevoid hyperkeratosis, is usually bilateral, asymptomatic and appears either at puberty or during pregnancy in females. Although it affects both men and women, very few men have been reported to have nevoid hyperkeratosis, and most had a medical history of prostate adenocarcinoma treated by estrogen therapy. Herein we report a case of nevoid hyperkeratosis of nipple and/or areola in a male patient.

PO17-025

**Clinical study of 52 patients with adult onset dermatomyositis**

Young Ho Won, In Soon Jung, Sook Jung Yun, Jee Bum Lee, Seung Chul Lee

*Department of Dermatology, Chonnam National University Medical School*

**Background** Dermatomyositis is one of the idiopathic inflammatory myopathies characterized by unique cutaneous features. Unfortunately, there are few data regarding clinical features of dermatomyositis in Korea patients. The study aimed to analyze the clinical features of Korean patients with adult onset dermatomyositis.

**Methods** A total of 52 patients from 2002 to 2016 were analyzed retrospectively. Clinical features such as sex, age, symptoms, associated connective tissue disorders and malignancy were studied using medical records.

**Results** The mean onset age was 43.4 years and male to female ratio was 1: 1.9. 42 patients (80.8%) were classified as dermatomyositis, and 8 patients (15.4%) as amyopathic dermatomyositis. Skin rash (94.2%) was the most common clinical feature, followed by proximal muscle weakness (61.5%), itching (55.8%), arthralgia (36.5%), muscle pain (32.7%). Among the skin rash, symmetric violaceous erythema (67.3%) was most frequent, followed by heliotrope rash (63.5%) and Gottron's papule (59.6%). Serum aldolase level was elevated in 77.8%, and LDH in 69.6%. The prevalence of malignancy (23.1%) was similar to previous studies. Cervical cancer made up 25% (3/12) of the associated malignancies, followed by ovarian cancer and lung cancer (16.7%). 10 patients (19.2%) were accompanied by other connective tissue diseases.

**Conclusion** To date, this is the first large scale case study that analyzed the clinical features of Korean patients with adult onset dermatomyositis.

PO17-052

**A case of accessory tragus on buccal area**Kyung muk Jeong<sup>1,2,3</sup>, Ji Yun Seo<sup>1,2,3</sup>, Jin Young Song<sup>1,2,3</sup>, Yoo Sang Baek<sup>1,2,3</sup>, Hae Jun Song<sup>1,2,3</sup>, Chil Hwan Oh<sup>1,2,3</sup>, Jiehyun Jeon<sup>1,2,3</sup>

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3. Korea University

Accessory tragus is a congenital anomaly of the external ear arising from the abnormal development of the auricular tubercles or from the tissues surrounding the second, third and fourth branchial clefts. It is present in males and females equally with a prevalence of approximately 2-6/1000 live births. Clinically, this anomaly is usually presented as a small skin-colored tag or nodule near the tragus, but rarely, along an imaginary line drawn back from the tragus to the angle of the mouth, or along the anterior edge of the sternocleidomastoid muscle and the sternoclavicular region. The diagnosis is made by the age of onset, site of localization, and affirmative histopathology. We report a 12-month-old male who congenitally presented with a solitary flesh colored pedunculated nodule on the left buccal area. Shave biopsy was performed on this lesion. Histologically there are numerous follicles, prominent connective tissue framework in the subcutaneous fat and central core of cartilage. It was diagnosed as accessory tragus and the patient is under observation without complications. Herein, we report a case of accessory tragus arising in buccal area as an interesting example.

PO17-057

**Neonatal lupus erythematosus without congenital heart block: a retrospective study for 10 years in China**Jing-Hua Yin<sup>1</sup>, Qian-Jin Lu<sup>1</sup>, Jian-Ping Tang<sup>2</sup>

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2. Department of Dermatology, Hunan Children's Hospital, University of South China

Neonatal lupus erythematosus (NLE) is an autoimmune disorder characterized by maternal autoantibodies against SSA/Ro and SSB/La proteins, which pass the placenta and cause fetal clinical complications including transient cutaneous lupus and congenital heart block (CHB). We identified and followed 102 patients with NLE and their mothers over 10 years in China and described clinical symptoms, autoantibodies, and prognosis of Chinese NLE. We surprisingly found no NLE patients had CHB in the registry of 102 cases, whereas SSA/Ro and/or SSB/La autoantibodies were detected in all of cases. Our observations suggested a clinical pattern of NLE in China that requiring further monitoring of risk of cardiac block, as well as later onset of autoimmune diseases in affected children and their mothers.

PO17-069

**Skin-Brain Connection**

Jinho Chung

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Skin is an endocrine organ. Skin cells produce and regulate various hormones according to the changes of environment. Once skin produces hormones, they go to the blood stream and affect distant organs including brain. Skin is the largest organ of the body and a front-line homeostatic barrier to the external environment. There is a strong connection between the skin and the brain. Once certain environmental stress hits the skin, skin senses the

stresses. Then, the skin transfers the information to the brain through the peripheral nerve fibers. On the other hand, there is another way for skin to let the brain know about the stresses coming to our body. Skin produces various hormones and mediators into the blood circulation, and they reach the brain. Then, the brain responds to those signals to produce stress responses. In this talk, I will show how UV exposure to the skin affects brain functions. The skin senses the external environment and ultraviolet light (UV) is a daily stimulus the skin receives. The hippocampus is the brain region that is responsible for memory and emotion. However, changes in the hippocampus by UV irradiation to the skin are still unknown. Recently, we demonstrated that repeated UV exposure through the skin may negatively affect hippocampal neurogenesis and synaptic plasticity along with HPA axis activation. In addition, I am also going to give you further examples of skin-brain connection.

PO17-070

### **Application of dermoscopy detection system in observing the effect of 2940 nm Er pixel laser in skin pore treatment**

Yue-Hua Men, Chun-Lei Zhang

*Peking University Third Hospital*

**Objective** To observe the effect of 2940nm Er pixel laser in skin pore treatment with dermoscopy, and to establish a dermoscopy detection system.

**Methods** Select 30 cases of patients with large pores undergoing 2940nm Er pixel laser treatment; Take photographs and collect dermoscopy images before and after treatment; Compare pore size before and after treatment by referring to facial pores standard photo evaluation method; Utilize computer processing system to establish a dermoscopy detection system and conduct quantitative assessment of the pore size and color index before and after treatment.

**Results** Each patient received treatment for 3 times. The general condition score declined significantly. The average detection rate of pores in computer processing area is 70.59%, and the pore size and color index evaluated by dermoscopy detection system largely decreased too ( $P < 0.05$ ).

**Conclusion** The dermoscopy detection system can provide an objective and accurate guidance for the evaluation of 2940nm Er pixel laser in skin pore treatment, as an evaluation system, it may further promote the objective assessment of skin pores.

PO17-072

### **A Japanese case of tick bite bitten in Nepal**

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2. *Kanbe Clinic*

A 71-year-old Japanese male noticed a black macule on his left lower leg when he was trekking Annapurna in Nepal. The nodule had gradually become larger, but, it spontaneously dropped out after he came back to Japan. He visited our hospital with a live tick. Physical examination revealed a mild erythema covered with crust of 3mm in size on his left lower leg. We made a diagnosis of *Ixodes ovatus* tick bite. He was performed surgical excision including the bite site. Histopathological examination revealed a perifollicular inflammatory infiltrate consisting of neutrophils, eosinophils, and lymphocytes, without mouthparts of the tick. He had no other symptoms like fever and headache which indicate tick-borne diseases, but, he was treated with minocycline to prevent tick-borne diseases. The Japanese name of *Ixodes ovatus* is Yamato tick which means Japanese tick. Although it is a cosmopolitan species in Japan, they inhabit in Eastern and South-eastern Asia. It may be rare that a traveler carries an attached tick between countries. In such a case, we should consider about imported tick-borne diseases.

PO17-073

**Analysis of finger vein variety in patients with various diseases using vein authentication technology**

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Finger vein authentication technology is one of biometrics technics adopted in security field such as authentication of entrance control of companies or laboratories. In this technology, near-infrared rays generated from LED penetrate the finger, and are absorbed by the hemoglobin in blood. The veins appear as dark areas on an image captured by a complementary metal oxide semiconductor camera located on the opposite side of the finger. This technology is noninvasive and able to display the vein image in real time. Since it is difficult to measure veins without enhanced angiography, three-dimensional computed tomography, magnetic resonance angiography, or radioisotope venography, peripheral venous patterns have not been studied for various diseases. Therefore, we have acquired the finger-vein pattern images of patients with various diseases such as systemic sclerosis (SSc) and mixed connective tissue disease (MCTD), and examined whether their patterns had any characteristics differentiating them from those of healthy volunteers. As a result, brightness gap between vein and the other area of patients with SSc and MCTD tended to show reductions compared with the healthy volunteers. This study suggested finger vein authentication technology could be used for screening of some rheumatic diseases.

PO17-074

**Presence of SCF/CXCL12 double positive large blast-like cells at the site of cutaneous extramedullary hematopoiesis**

Takashi Nomura, Toshiaki Kogame, Kenji Kabashima

*Kyoto University*

Extramedullary hematopoiesis (EMH) is observed under prenatal physiological conditions. It can also occur after birth in the hypoxic disorders. However, the mechanism of hematopoietic stem cell (HSC) maintenance in EMH is yet to be investigated, especially in the human. Recent studies in mouse model showed that most HSCs in the bone marrow come into contact with SCF-1/CXCL12 double positive (SCF<sup>+</sup>/CXCL12<sup>+</sup>) mesenchymal stem/stromal cell (MSC)-derived cells. Herein, we report a case of cutaneous EMH where SCF<sup>+</sup>/CXCL12<sup>+</sup> cells were sought for immunohistochemically. We found that the perivascular stromal cells co-expressed SCF and CXCL12 in the loci of EMH in the skin. Our finding indicates that SCF<sup>+</sup>/CXCL12<sup>+</sup> cells play a role in the formation of the hematopoietic niche in cutaneous EMH. We believe that our result will add an important aspect for the mechanism how hematopoietic niche formation develops in EMH.

PO17-090

**Erythema nodosum-like lesion in sarcoidosis: a specific skin manifestation occasionally seen in Japanese patients**

Toshiyuki Yamamoto

*Fukushima Medical University*

Erythema nodosum-like eruption in sarcoidosis is a specific form of cutaneous sarcoidosis, which is histologically characterized by sarcoidal granulomas in the dermis to subcutis. This subtype is occasionally seen in Japanese patients, and reported to predominantly occur in women. Since the year 2004, eight cases were diagnosed with erythema nodosum-like lesion associated with sarcoidosis in our department. Patients were one male and seven females, and age distributed between 30 and 74 years old. All cases involved the lower extremities. Serum angiotensin converting enzyme level was elevated in four cases (50%). Lung sarcoidosis was observed in all the cases and ophthalmological sarcoidosis was observed in six cases, whereas cardiac sarcoidosis was not observed in any cases. By contrast, erythema nodosum as a non-specific cutaneous manifestation associated with sarcoidosis is extremely rare in Japan. The frequency and type of cutaneous sarcoidosis vary among races. Herein, the characteristics of erythema nodosum-like lesion in Japanese patients with sarcoidosis are shown.

PO17-091

**Cutaneous lymphoid hyperplasia with lymphoid follicles possibly represents tertiary lymphoid organs in the skin: an immunohistochemical analysis of three cases**

Mikio Ohtsuka, Tatsuhiko Mori, Toshiyuki Yamamoto

*Department of Dermatology, Fukushima Medical University*

Cutaneous lymphoid hyperplasia (CLH) is a reactive lymphoproliferation of the skin mimicking cutaneous lymphomas. It usually consists of a mixture of T cells, B cells, macrophages, and dendritic cells, but cases composed predominantly of B cells are occasionally present. In such cases, lymphoid follicles with germinal centers are usually observed. Although CLH is believed to occur as a result of immune response to unknown, external stimuli, autoimmune diseases, such as lupus erythematosus, are also known to often develop cutaneous lymphoid proliferations. Although histological features and immunohistochemical findings of CLH with lymphoid follicles are well documented in previous literature, the exact nature and pathophysiology of CLH still remain unknown. In order to examine the characteristics of lymphoid follicles observed in CLH, we performed immunohistochemical analysis of three cases of CLH of unknown cause. All cases showed lymphoid follicle formation in the dermis and subcutaneous tissue. Germinal centers were highlighted by immunostaining using anti-CD21 antibody. D2-40 positive lymphatic structures and PNA<sup>d</sup>-positive high endothelial venules were observed around and within the follicles. These findings suggest that lymphoid follicles found in CLH simulate tertiary lymphoid organs that are well known to present in various organs, such as bronchus, gastric mucosa, and thyroid gland.

PO17-092

**Recurrent blistering of the fingers as a sign of carpal tunnel syndrome**

Mai Endo, Toshiyuki Yamamoto

*Recurrent blistering of the fingers as a sign of carpal tunnel syndrome*

A 75-year-old woman, who had suffered from carpal tunnel syndrome for 15 years, visited our department, complaining of a blister on finger. She stated that blisters have repeatedly appeared on the digits and healed in about a month after ulceration for the past 6 years. On physical examination, she had no blisters but a dry erosion in her right third finger. Several papers have reported that finger blisters are rarely seen in patients with carpal tunnel

syndrome, and other reported skin abnormalities include ulceration, hypohidrosis and other features of autonomic neuropathy, vasospasm or Raynaud's phenomenon, and irritant contact dermatitis. We diagnosed that the digital blisters sometimes appeared in our patient are the skin symptoms associated with carpal tunnel syndrome.

PO17-002

### **A case of overlap syndrome associated with rhabdomyolysis**

Jin-Jing Jia, Xiao-Peng Wang, Hai-Tao Zhang, Meng-Di Zhang, Yan Zheng

*Second Affiliated Hospital of Xi'an Jiaotong University*

**Objective** To improve the understanding of overlap syndrome associated with rhabdomyolysis.

**Methods** Report a rare case of overlap syndrome associated with rhabdomyolysis.

**Results** A 74-year-old female was presented with sclerosis of the skin around her mouth and hands and feet with fatigue and soy sauce color urine for more than 2 months. Her serum creatine kinase was 4242 U/L and myoglobin was 1124 ng/ml. She was diagnosed with overlap syndrome associated with rhabdomyolysis. Treatment outcome of methylprednisolone + methotrexate was not ideal, so she was transferred to the department of nephrology for further blood purification therapy

**Conclusions** Overlap syndrome associated with rhabdomyolysis is a rare identity in clinic. The present case was manifested mainly as scleroderma, and the manifestation of inflammatory myopathy was not obvious, which was very easy to be missed in medical history collection. It would result poor prognosis once the acute renal failure occurred. Early detection and timely hydration and alkalization, even blood purification therapy are needed when necessary.

PO17-003

### **Candidate biomarker of human skin aging: A review**

Jun Wang

*The Affiliated Hospital of Guizhou Medical University*

Skin aging is a complex process, affecting by many multiple genetic and all biology system at every organization. Skin has the same aging status like other internal organs or tissues and differ from the environment factors (eg: UV radiation). Skin is composed of different cell layers, which have been proved behave very differently, the epidermis consists of keratinocytes performed as a diverse biological functions, so its a possible new classification of biomarker function in skin aging. DNA and chromosomes; RNA and transcriptome; oxidative and mitochondria; cell senescence; metabolism; nutrient sensing and protein carbamylation be considered as a key factor of skin aging. So we try to summaries candidate biomarkers of human skin aging by possible causes, gender and different organs disease.

PO17-007

### **Unilateral linear Telangiectasia macularis eruptiva perstans: a case on axilla**

Zhen-Hui Ma, Xiao Li, Ya-Ping Tian

*The 1st Hospital of Jilin University*

Telangiectasia macularis eruptiva perstans (TMEP) is a form of cutaneous mastocytosis with typical skin eruption (telangiectatic macules distribute both bilaterally and symmetrically) and histopathological characteristics (increased number of mast cells, dilated capillaries and venules) as diagnosis criteria.<sup>1</sup> Sun-exposure is the major cause for TMEP.<sup>2</sup> Here we report a unilateral linear TMEP on non-sun-exposed area with unusual clinical presentations.

PO17-008

**5-aminolaevulinic acid-based photodynamic therapy pretreatment inhibits ultraviolet B-induced skin photodamage**

Dan Luo

*The First Affiliated Hospital of Nanjing Medical University*

**Objective** To evaluate the photoprotective effect of 5-aminolaevulinic acid-based photodynamic therapy (ALA-PDT) on UVB-induced skin photodamage.

**Methods** ALA-PDT was administered on the entire face or just the lesion of 30 patients with actinic keratoses (AKs) and then evaluate the incidence of new AK lesions. In vivo experiments, the dorsal skin of hairless mice were treated with ALA-PDT or saline-PDT, and then exposed to 180 mJ/m<sup>2</sup> UVB. In vitro experiments, HaCaT cells of two groups (one treated with ALA-PDT, the other untreated), were exposed to 60 mJ/m<sup>2</sup> UVB.

**Results** Results showed that incidence of new AK lesions of the full-face group was significantly lower than that of local-lesion group after 3 years follow-up. In vivo experiments, the number of sunburn cells and apoptosis cells in the epidermis of ALA-PDT-treated groups were significantly decreased compared with UVB groups. And the removal rate of CPDs was obviously higher in ALA-PDT-treated groups. At 48 h, the number of Ki67 positive nuclei in ALA-PDT-UVB group was significantly smaller than UVB group. Further in vitro experiments, we found 0.5 mmol/L of ALA and 3 J/cm<sup>2</sup> of red light did not affect the vitality of cells, and could reduce apoptosis, accelerate the clearance of CPDs, inhibit proliferation and activate p53.

**Conclusion** Taken together, these results suggest that ALA-PDT pretreatment can induce a protective DNA damage response that protects skin cells from UVB-induced photodamage.

PO17-009

**Distribution and expression of transient receptor potential vanilloid in skin lesions of patients with dermatomyositis**

Ke Xue

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**Objective** To investigate the distribution and expression of transient receptor potential vanilloid (TRPV) cation channels including TRPV1, TRPV2, TRPV3 and TRPV4 in dermatomyositis facial skin lesions.

**Methods** Immunohistochemistry was performed to detect the distribution and expression of TRPV in facial lesions of patients including dermatomyositis ( $n=3$ ), eczema ( $n=3$ ), lupus erythematosus ( $n=3$ ), rosacea ( $n=3$ ) and facial skin of healthy controls ( $n=3$ ). And real-time fluorescence quantitative polymerase chain reaction (qRT-PCR) was performed to verify the results of immunohistochemistry.

**Results** The results of qRT-PCR were consistent with immunohistochemistry: the expression of TRPV1, TRPV2, TRPV4 in dermatomyositis were higher than that in rosacea, eczema, lupus erythematosus and healthy control group ( $P<0.05$ ), but TRPV3 between dermatomyositis and healthy control group showed no difference. However, the facial skin lesions of TRPV3 in dermatomyositis patients were mainly expressed in the epidermis, while in other groups mainly expressed in the dermis. Research confirmed the role of TRPV in acne, lupus erythematosus, psoriasis and other diseases, but the relationship between TRPV and dermatomyositis has not been reported.

**Conclusions** This study confirmed that the expression and distribution of TRPV in dermatomyositis patients. And targeted treatment for TRPV may be useful for the treatment of skin lesions in patients with dermatomyositis.

PO17-010

**A case of lupus miliaris disseminatus faciei after allogeneic hematopoietic stem cell transplantation**

Si Zhang, Cheng Zhou, Xiao-Yang Liu, Lin Cai, Jian-Zhong Zhang

*Peking University People's Hospital*

Lupus miliaris disseminatus faciei is a rare inflammatory dermatosis of unknown etiology that primarily affects young adults. Clinically, it is characterized by an asymptomatic papular eruption mainly involving the central face, typically on and around the eyelids. Characteristic histopathological features include dermal epithelioid cell granulomas with central necrosis and surrounding lymphocytic infiltrate with multinucleate giant cells.

We report here a case of a 43-year-old male patient who had hybrid acute leukemia; he underwent allogeneic stem cell transplantation from a matched donor, his sister. He was admitted to our department with an asymptomatic papular eruption on the face that had occurred after eight months of allogeneic hematopoietic stem cell transplantation. Physical examination revealed multiple, small, dome-shaped, reddish-yellow and yellowish-brown papules, distributed symmetrically on the central area of the face, namely the forehead, eyelids, nose, cheeks, perioral area, and chin. Histopathological examination revealed dermal epithelioid cell granulomas, some with central areas of necrosis, and surrounding moderate lymphohistiocytic infiltrate with multinucleate giant cells, mostly of the Langhans type. No mycobacterial or fungal components were detected in dermal tissues by acid-fast staining or periodic acid-Schiff (PAS) staining. Chest X-ray and laboratory analyses, including blood chemistry, T-SPOT. TB test were within normal ranges. The patient was given oral isotretinoin 10mg/day, together with topical application of tacrolimus. By 24 weeks, a moderate improvement had been achieved, despite the residual depressed scars.

PO17-012

**Wong type dermatomyositis with anti-TIF1- $\gamma$  antibody: A case report**

Ke Xue

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**Background** Wong-type dermatomyositis (DM) exhibits simultaneous pityriasis rubra pilaris (PRP) features which is a special subtype of dermatomyositis.

**Case Report:** A 36-year-old woman presented with Orbital edematous erythema, Gottron's papules, and a poikilodermic, erythematous rash in shawl distribution and Bilateral thighs without evidence of muscle weakness. The eruption progressed more than 1 year. Laboratory examinations: Myositis associated antibodies shows only transcription intermediary factor1(TIF1)-gamma is positive. Skin biopsy shows: the epidermis is hypertrophic, with basal cell liquefaction and degeneration. There are some dyskeratosis cells, and fibrinoid necrosis around the dermis vessels, and peripheral lymphocyte infiltration. Muscle biopsy shows some lymphocyte infiltrate in muscle and small vessels. After tumor screening, a tumor with squamous differentiation was found on the right parotid gland of the patient. The patient was treated with radiotherapy and chemotherapy for tumor and immunomodulatory medicines for dermatomyositis in time.

**Conclusion** Few reports have reported that Wong-type DM has the risk of tumor. However wong type DM with anti-TIF1-gamma antibody positive patients who had malignant tumor of parotid gland hasn't been reported. Recognizing this type of DM is warranted in order to make an accurate assessment of their prognostic significance.

PO17-013

**MED, MPPD which model for whitening products evaluation is better?**Yue Zheng<sup>1</sup>, Xiang-Zi Li<sup>2</sup>, Wei Lai<sup>1</sup>*1. Department of Dermato-venereology, The Third Affiliated Hospital of Sun Yat-sen University**2. Shenzhen Centre for Chronic Disease Control and Prevention*

**Background** Hyperpigmentation on face affects human's physical and mental health, but how to select the suitable and efficacy method for different whitening products evaluation is still under discussion. Here we explored the optimal ultraviolet radiating doses for minimal erythema dose (MED) and minimal persistent pigment dose (MPPD) establishment in type IV skin and attempt to compare which method was better in assessing skin whitening products.

**Methods** 35 healthy volunteers were recruited and their MEDs and MPPDs were measured. All volunteers were simultaneously exposed to two different ultraviolet sources of six increasing doses radiations on bilateral flattening area of lower back: 95% UVA /5% UVB was used on the left side in which the radiating doses were 0.75, 0.94, 1.17, 1.46, 1.83, 2.29 MEDs; meanwhile 99% UVA/1% UVB with radiating doses of 6.0, 7.5, 9.4, 11.7, 14.6, 18.3 MPPDs were used on the right side. Observations and pigmentation measurements (melanin index and L\* value) were carried out before and after UV radiation for 24 weeks.

**Results** With 95%UVA/5%UVB irradiation, both 1.83MED and 2.29MED induced medium depth pigmentation. 1.83MED dose causing minimal photo-damage on skin was selected as the most suitable dose. The lowest level of  $\Delta L$  was observed between day 5 to day 7. With 99%UVA/1%UVB irradiation, both 9.4MPPD and 11.7MPPD induced medium depth pigmentation. 9.4MPPD dose causing minimal photo-damage on skin was selected.  $\Delta L$  reached the minimal level at day 6 to day 7.

**Conclusion** These findings potentiate advanced understanding of UV model establishment and selection for skin whitening products' evaluation as related to dermatopharmacology and dermatotoxicology. Products' formula characteristics and design concepts should be sufficiently considered before choosing the MED and MPPD models.

PO17-014

**Translation of the Chinese version of the Family Dermatology Life Quality Index (FDLQI) and its evaluation on parents of children with vitiligo and eczema**

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**Background** The Family Dermatology Life Quality Index (FDLQI) is a well-known a widely used health-related quality of life instrument developed for assessing the impact of patient's skin conditions on the lives of their family members. This study was designed to evaluate the reliability and validity of the Chinese version of the Family Dermatology Life Quality Index (FDLQI) among Chinese parents that having children with vitiligo and eczema, and to describe the impact of children's skin disease on parent's Quality of Life (QoL).

**Methods** The study participants consisted of 50 children diagnosed with Vitiligo and 50 children with Eczema under the age of 16 years and their parents. The FDLQI is developed originally in English, after a standard method of "forward-backward" translation process, the Chinese version was finalized and was administered to the participated parents. The reliability of the questionnaire was assessed by Cronbach's alpha coefficient. Validity was assessed using both Kaiser's criterion and the scree plot. Factor structure was tested by explanatory factor analysis.

**Results** A total of 82 parents of vitiligo children and 86 parents of eczema children completed the questionnaire, overall mean score of the FDLQI was  $12.20 \pm 4.77$  for the vitiligo group and  $11.55 \pm 4.82$  for the eczema, emotional impact was the most influenced item for both groups and mothers were more affected than fathers. Long disease duration and lesions on exposed sites of the children affected the quality of life of their parents exceedingly in both groups. Reliability analysis demonstrated high internal consistency with Cronbach's alpha coefficient of 0.90 for vitiligo and 0.92 for eczema. Factor analysis demonstrated one major factor and one weaker factor accounting together for 65.2% of the total variance for the vitiligo group and only one factor accounting for 59.0% for the eczema group.

**Conclusions** The Chinese version of the FDLQI is a reliable and valid tool to evaluate the indirect impact of patient's skin condition on family members. The effect of childhood vitiligo and eczema on parents is significantly high and should not be underestimated.

PO17-015

### **A case of scalp eczema and alopecia associated with Erlotinib**

Fang su, Qing-Yan Chen, Tie-Nan Li

*The Seventh People's of Shenyang*

**Objective** To report a case of scalp eczema and alopecia in a patient caused by erlotinib.

**Methods** A 69-year-old man with non-small cell lung cancer (NSCLC) presented with erythematous erosive patches containing pustules on her scalp. She had been using 150 mg/day erlotinib for 4 months. However, about 2 months after taking the medicine, painful, erosive patches appeared on his scalp, which was accompanied by hair loss. Physical examination showed erythematous erosive patches with follicular pustules on the scalp. A biopsy specimen taken from the scalp showed squamous epithelial tissue, epidermal skin ulceration, inflammatory exudate, acanthosis thickening, abundant dermis infiltrate with lymphocytes, plasma cells, neutrophils, multinucleated giant cells. Bacterial and fungal stains were negative. Routine laboratory investigation found nosignificant abnormalities.

**Results** Diagnosis of scalp eczema and alopecia associated with Erlotinib was made.

**Conclusion** The most common skin manifestation of molecular targeted drugs is a rash that has been described as a follicular or papulopustular eruption. However, significant or severe eczema with alopecia has rarely been reported in patients that receive EGFR-TKI monotherapy and accurate identification of the underlying mechanism requires further.

PO17-017

### **Recurrent purpura: A clue to Sjogren's syndrome**

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**Objective** As we know recurrent purpura is a common clinicopathologic phenomenon which was often caused by various reasons like thrombocytopenia, dysfunction of blood coagulation or damage of blood vessel walls. Some diseases may display purpura as intial manifestation, but are unresponsive to conventional treatment. We report a case presented with recurrent purpura, in order to help clinicians find the underlying diseases smoothly in such condition.

**Methods** Since the key clinicopathologic feature of this case was the persistant and asymptomatic purpura, we ran out a series of tests including blood and urine routine, coagulation function, liver function test and some other tests to discover the causes of the purpura.

**Results** Biopsy revealed a large amounts of hemosiderin in the dermis. Laboratory data including blood and urine routine and coagulation function was normal. Liver function test showed TP, ALB and GB was 87.4g/L, 45g/L and 42g/L respectively. Serum protein electrophoresis, immunofixation and immunoglobulins level showed a polyclonal hypergammaglobulinemia with a high level of IgG in the serum. Furthermore, an high titer of antinuclear antibody and positive anti-SSA and anti-SSB helped us associate the hypergammaglobulinemic purpura of Waldenström with Sjogren syndrome.

**Conclusion** Routine tests and biopsy of our case gave little hint, we made further efforts to find the underlying reasons of purpura by means of undergoing related tests, and eventually led to final diagnose. Therefore recognition of the special clinicopathologic features of recurrent purpura will help us to get accurate diagnosis even when the patient is lack of other typical manifestations.

PO17-018

**Expression and significance of IL-22 in lichen planus**

Shan-Shan Zhu

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**Objective** To investigate the expression of interleukin-22(IL-22)in lichen planus lesions, and elucidate the possible role of IL-22 in the pathogenesis of the disease.

**Methods** Tissue specimens were obtained from skin biopsy from 30 patients with lichen planus, and 10 from normal skins. The expression of IL-22 was studied by immunohistochemistry.

**Results** IL-22 in lichen planus is mainly expressed in the keratinocytes of epidermal layer and the cytoplasm of infiltrating lymphocytes in superficial dermal, and IL-22 in normal skin is mainly expressed in the keratinocytes near the basal layer. The expression level of IL-22 in the lesions of lichen planus was significantly higher than the expression in normal skin, the statistics was significant difference ( $P<0.01$ ).

**Conclusion** The expression of IL-22 was higher in lichen planus than normal skin specimens, suggesting that IL-22 might contribute to onset of lichen planus. IL-22 was weakly positive in the majority of basal layer of the epidermis in normal skin, suggesting that it may be involved in the normal differentiation of keratinocytes.

PO17-019

**Targeting lysosomal labile iron pool, a novel approach for skin photoprotection**

Li Zhong

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While iron is required for a number of essential cellular processes, in its redox-active chelatable ‘labile’ form can be potentially toxic especially in the presence of reactive oxygen species, as it can lead to catalytic formation of oxygen-derived free radicals such as hydroxyl radical that ultimately overwhelm the cellular antioxidant defense mechanisms and lead to cell damage. In this context, we have demonstrated that acute exposure of skin cells to ultraviolet A (UVA, 320-400 nm), the oxidising component of sunlight provokes an immediate increase in the available pool of intracellular labile iron (LI) that appears to play a key role in the increased susceptibility of skin cells to UVA-mediated oxidative membrane damage and necrotic cell death. While intracellular labile iron was originally thought to be cytosolic, recent studies demonstrate that the most important cellular pool of redox-active LI exists within lysosomes and mitochondria, making these organelles particularly vulnerable to oxidative stress-induced by UVA. Indeed UVA triggers damage to lysosomal membranes leading to leakage of potentially harmful proteases and LI into the cytosol, which in turn exacerbates the overall damaging process in the cells and ultimately causes necrotic cell death. Similarly in skin cells, UVA provokes damage to mitochondrial membranes leading to immediate depletion of ATP and the ensuing necrotic cell death. The use of mitochondria-targeted iron chelators has provided us with an unprecedented protection against UVA-induced and LI-mediated oxidative damage and cell death in skin cells. Here we demonstrate that chelation of intra-lysosomal pool of LI by the lysosomotropic chelator Desferrioxamine mesylate (DFO) or lysosomal permeable aroyl hydrazone chelators SIH and PIH efficiently prevents lysosomal rupture and the ensuing cell death induced by UVA but chronic use would cause severe side effects due to systemic iron depletion. To counteract this problem, we have demonstrated that pro-chelators that become activated in skin cells at physiologically relevant doses of UVA, such as ‘caged-iron chelators’, may provide dose and context dependent release. Here we further results demonstrate that unlike the parent compounds, the caged iron chelators do not affect the intra-lysosomal pool of LI, until exposure to a physiologically relevant UVA dose when they subsequently provide promising levels of protection for skin fibroblast cells against UVA-mediated lysosomal damage and necrotic cell death. This novel light-activated prodrug strategy based on lysosomal permeable chelators may therefore be used to protect skin cells against the deleterious effects of sunlight.

PO17-020

**Measurement of cytokines, chemokines and association with clinical severity of DM/CADM disease**

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**Objective** To investigate the association between serum cytokines, chemokines and clinical severity, especially cutaneous lesions and interstitial lung disease (ILD) in DM and clinically amyopathic dermatomyositis (CADM) patients.

**Methods** Clinical features, laboratory findings and serum of 40 DM/CADM patients were collected and analyzed. Serum cytokines/chemokines were measured by enzyme-linked immunosorbent assay (ELISA) or cytometric beads array (CBA).

**Results** Serum levels of interleukin-6 (IL-6), IL-10, IL-18, interferon- $\beta$  (IFN- $\beta$ ), C-C motif ligand-2 (CCL-2), C-X-C motif ligand-9 (CXCL-9), and CXCL-10 were significantly increased in DM/CADM patients compared with healthy controls (HCs) ( $P < 0.001$ ). Serum IFN- $\beta$  ( $r_s = 0.368$ ,  $P = 0.019$ ) and CXCL-10 ( $r_s = 0.318$ ,  $P = 0.045$ ) were significantly correlated with the Cutaneous Dermatomyositis Disease Area and Severity Index (CDASI) activity score in the subset of DM/CADM. Serum levels of IL-6, IL-10, IL-18 and IFN- $\beta$  were significantly higher in the patients with acute/subacute interstitial pneumonia (A/SIP) than the subset without ( $P < 0.05$ ). IL-6 ( $r_s = 0.536$ ,  $P < 0.001$ ) as well as IL-18 concentration ( $r_s = 0.464$ ,  $P = 0.003$ ) were significantly correlated with serum level of anti-MDA5 Ab.

**Conclusions** Serum levels of IFN- $\beta$  and CXCL-10 may be useful biomarkers for assessing cutaneous disease activity in DM/CADM. In addition, serum IL-6, IL-10, IL-18 and IFN- $\beta$  were highly correlated with the occurrence of A/SIP. These cytokines may play a role in the pathogenesis of DM/CADM.

PO17-021

**A case of classic juvenile pityriasis rubra pilaris**

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**Objective** PRP is rare in pediatric patients and standard recommended treatment algorithms for this population are not currently available. Diagnostic and treatment guidelines for PRP are based almost exclusively on case reports or case series, most of which focus on adult patients. The presentation and management of PRP are discussed.

**Methods** A 7-year-old boy referred to our hospital presenting with a 3-month history of scaling plaques over the scalp, trunk, and limbs with thickening skin on the palms and soles. The patient complained for intensely itching on the lesions. The family history and allergic history were all unremarkable. His parented reported the lesion first presented as well-defined papule and erythema on the scalp and the dorsal surface of his elbows and knees. In several days, they found similar lesions spreading over the boy's trunk. In the meanwhile, both his palms and soles become thickening. Gradually, the color of the lesions turned red-orange and small papules merged into plaques. Physical examination revealed hyperkeratotic follicular papules, orange-red scaling plaques over his scalps, trunk and the dorsal surface of bilateral elbows and knees, along with palmoplantar hyperkeratosis. Well-demarcated of spared skin were also noticed among the lesions. The lesion biopsy demonstrated typical acanthosis, hyperkeratosis and parakeratosis.

**Results** He was diagnosed with classic juvenile (type III) pityriasis rubra pilaris (PRP) and given loratadine 10mg daily, retinoids ointment, urea cream and glucocorticoid ointment. Besides, UVA1 was also given. After 2 weeks therapy, the lesion got obvious relieved.

**Conclusion** retinoids ointment, urea cream, glucocorticoid ointment and UVA1 are safe and effective for classic juvenile pityriasis rubra pilaris.

PO17-022

**Unilateral eyelid lupus tumidus: Report of three cases**

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**Background** Lupus erythematosus tumidus (LET) is a rare form of chronic cutaneous lupus erythematosus that characteristically presents as a succulent, erythematous plaques on sunexposed areas. Our purpose was to describe 3 cases of LET with unilateral eyelid involvement from China.

**Methods** The records of 3 patients reviewed on the following aspects: clinical manifestation, laboratory investigation, immunological tests, phototesting, histopathological findings, clinical course, and treatment.

**Results** Patients were all middle-aged women who had infiltration erythema and edema on unilateral eyelid as the only manifestation. Immunological tests showed ANA 1: 320 in patient1 and 1: 80 in patient3. Pathological examination of lesions showed perivascular lymphocyte cell infiltration in deep and superficial layer of derma. Mucins deposition can be found between collagen fibers. LET were all diagnosed. Patients responded well to chloroquine phosphate, corticosteroids, and thalidomide.

**Conclusion** Our data demonstrate the features of LET that are characteristic. LET in this study were in women and patients were all with unilateral eyelid edema. LET only with unilateral eyelid involvement is rare.

PO17-023

**Dermoscopy of hair broken caused by chemical dye**

Meng-Sha Ma, Wen-Ju Wang, Yong-Hong Lu, Shi-Hua Zeng, Xue-Ying Liu, Li-Wen Zhang, Qiao-Mei Sun

*Department of Dermatology, Chengdu Second People's Hospital, Chengdu*

A 39-year-old-woman presented at our dermatology clinic with a 1-day hair fracture history after redyeing of her hair on forehead margin. Clinical evaluation revealed an egg - sized alopecia, with neatly-broken ends, extending along the forehead margin of the scalp of the Asian patient. Dermoscopy revealed neatly-broken hair stem and the broken ends curled slightly downward, demonstrating a nail-like appearance. The reddish-brown amorphous plaque that resemble excoriated lesions on the scalp and the similar color of surrounding dyed hairs highly indicated the right diagnosis. We consider that there is no connection between the hair broken and temperature in our case owing to the absence of heated hair coloring case history. Alkaline pH is supposed to be a cause of the extensive damage throughout cuticle layers during the coloration process, thus, a probable explanation for the neatly-broken hair.

The hair fracture characteristicly manifested as nail-like broken ends due to chemical disruption has not been observed in previous trichoscopy and is supposed to contribute toward identification of the disease.

PO17-024

**Study on efficacy and safety of HMME photodynamic therapy for port wine stain**

Xiao-Ying Chen, Jie Zheng

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**Objective** PWS is characterized by superficial dermal capillary malformations. HMME photodynamic is effective on benign microvascular lesions. This study is to observe the safety and efficacy of HMME-PDT in PWS and the correlation between treatment frequency, color, location, previous treatment history and efficacy.

**Methods** Thirty PWS patients were treated with 1-5 sessions with HMME-PDT. After 10 minutes of hemorrhoid injection at 5 mg/kg body weight, the 532 nm LED was irradiated at the lesion site, with the irradiation power density 85- 95 mW/cm<sup>2</sup>, energy density 110-120J/cm<sup>2</sup>. The area of the light spot of the main treatment head was 10\*10 cm<sup>2</sup>, and 4\*4 cm<sup>2</sup> for the auxiliary treatment head.

**Results** The efficacy of 30 patients after one treatment was as follows: 2 patients (6.7%) were radically treated, 10 patients (33.3%) were markedly effective, 17 patients (56.6%) were improved, and 1 patient (3.3%) was ineffective. In the 30 patients, 8 patients underwent 2 sessions, 3 patients underwent 3 sessions, 1 patient re underwent 4 sessions, and 1 patient underwent 5 sessions. The efficacy was proportional to the number of treatments. Thickened skin lesions, mid-facial lesions and scars caused by previous treatments were the negative factors for efficacy. No liver function damage and abnormal electrocardiogram were observed in the study. The main side effects of HMME-PDT were pain during treatment (29/30) and swelling after treatment (28/30). Local skin pigmentation usually resolved itself within 1-3 months.

**Conclusion** HMME-PDT is a safe and effective treatment for PWS.

PO17-026

### **Clinical analysis of 5 cases with nodular scabies about diagnosis and treatment**

Yang-Yang Ma, Ping Wang

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**Objective** To investigate the clinical features and diagnosis cruces of nodular scabies and analyze the effective treatments.

**Methods** To retrospectively analyze diagnosis and treatment experience, clinical features and auxiliary examination results of 5 patients with nodular scabies, and combined with literature review.

**Results** 5 patients, including 3 adolescents and 2 children, all had history of misdiagnosis; 3 cases had history of close contact. Nodular lesions are present on the genitalia and axillary regions. 4 cases were diagnosed with typical tunnel mode by dermoscopy, 1 case was diagnosed by diagnostic treatment. 5 cases were treated with scabicial before anti-inflammatory therapy, and they all responded well.

**Conclusions** Possibility of nodular scabies should be considered in patients with long-term genitalia pruritic nodules and topical corticosteroid poor effects. We recommend that dermoscopy and diagnostic therapy should be carried out.

PO17-027

### **Two cases of Lichen planus-like eruption caused by glivec**

Ling-Di Dong, Nan Yu, Jia-Rong Han

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Lichen planus is also called lichen ruber planus, which is a kind of chronic or subacute inflammatory skin disease. It is divided into idiopathy and secondary. The latter of it can be caused by many reasons: such as medicine, tumour, hepatopathy, bone marrow transplantation and so on. Generally speaking, it is a self-limiting disease, which is caused by medicine also called Lichen planus-like eruption. Now we report two cases of lichen planus-like eruption which is caused by glivec after operation of gastrointestinal stromal tumor, in order to remind clinicians to pay more attention to the patients appear lichen planus, and to ask for details of the history, and biopsy as early as possible to definite diagnosis as soon as possible.

PO17-028

### **Clinical analysis of 425 cases of Paederus dermatitis**

Zhuo-Fu Luo, Mao Luo, Yang Xu

*The First Affiliated Hospital of Southwest Medical University*

**Objective** To evaluate the onset, vulnerable population, lesions location and other clinical features in the patients with

Paederus dermatitis in our hospital during 2014~2017,so as to provide scientific evidence for the development of preventive strategies.

**Methods** 425 confirmed cases of Paederus dermatitis in our hospital from January 2014 to November 2017 were recruited,the features of the time of disease onset,gender,age,occupation, lesions location,manifestation of skin lesions,hospitalized cases were analyzed.

**Results** The number of patients with Paederus dermatitis in 2017 was 272,which compared far more than the last 3 years(average of 51 cases per year); In 2017, there were 9 cases of hospitalization,which also increased significantly compared with the previous 3 years (average of 1.33 cases per year). The peak incidence of Paederus dermatitis appeared from June to September. Paederus dermatitis frequently occurs in the age group of 17 to 36, male. Construction workers and student groups were more commonly observed,and skin lesions were often located in the head and neck, mostly in a strip-like distribution.

**Conclusions** In 2017, the Paederus dermatitis in the city showed an outbreak trend, which may be related to the special climate and rapid urbanization construction this year.

PO17-029

### **A method of dermoscopy plus ink staining to observe scabies**

Yang-Yang Ma, Ping Wang, Ke Bian, Ze-Hu Liu

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A 3-year-old girl presented with reddish and itchy nodules of 5–6 mm on the trunk and proximal extremities for 2 months. She had been misdiagnosed as eczema and treated with Hydrocortisone Butyrate Cream for 15 days. Her mother and grandparents had itchy papular eruption on the interdigital web spaces of the hands for 1 month. Dermoscopy showed a typical ‘jet with condensation trails’ and ‘hang glider sign’ (the appearance of a brown triangle which corresponds to the capitulum and the two anterior pairs of forelimbs of the mite). The lesions were laid colours (china ink) and dermoscopy showed the burrow had an egg. Microscope examination showed an egg. The patient was treated with sulfur cream (put on all over except the part above the neck) for 3 consecutive days and Hydrocortisone Butyrate Cream for 2weeks; the lesions darkened and itching relieved. Dermoscopy showed a closed hole and mite remnants was detectable at one end of a burrow.

PO17-030

### **Dermoscopy of vulva syringoma**

Yong-Hong Lu, Meng-Sha Ma, Wen-Ju Wang, Bin Yin, Xue-Ying Liu, Qiao-Mei Sun

*Department of Dermatology, Chengdu Second People's Hospital, Chengdu*

A 33-year-old Chinese woman came to our department with a five-year history of asymptomatic papules on the vulvar. A physical examination revealed numerous flesh-colored or pink, round-to-oval, firm, discrete, partial syncretic papules on the bilateral labia majora, up to 6 mm in size. The diagnosis of syringoma was confirmed by pathological features.Dermoscopy demonstrated several homogeneous round or oval shaped yellow-whitish structures, which may be associated with fibrous stroma surrounding the tumor nests in histopathology,arranging in clusters over a circular bulge with mild central depression. The circular bulge with mild central depression on dermatoscope differed from previous report. Vulvar region is considered to have dense apocrine glands along with eccrine glands and folliculosebaceous units, and that may account for morphological difference on dermoscopic examination. Due to the effectiveness and non-invasive trait, dermoscopy has a large auxiliary diagnostic value in vulvar adnexal tumours.

PO17-031

**Correlation between serum high-sensitive C-reactive protein and CGI-SI in patients with psoriasis vulgaris**

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**Objective** To explore the relevance between serum high-sensitive C-reactive protein of Psoriasis vulgaris, DLQI and severity of illness.

**Methods** To get the PASI score about 62 cases of psoriasis vulgaris, detect the hs-CRP and DLQI in 62 cases of psoriasis vulgaris and 60 cases of the normals.

**Results** The PASI score about 62 cases of psoriasis vulgaris showed a positive correlation with hs-CRP ( $P<0.05$ ); The PASI score about 62 cases of psoriasis vulgaris showed a positive correlation with DLQI score ( $P<0.05$ ). The serum high-sensitive C-reactive protein of Psoriasis vulgaris are significantly higher than that of the control group and the hs-CRP showed a positive correlation with PASI score. Meanwhile, the PASI score showed a positive correlation with the DLQI score.

**Conclusion** The hs-CRP can be a key indicator in assessing the severity of psoriasis vulgaris.

PO17-032

**Localized cutaneous amyloidosis associated with linear porokeratosis: A case report**

Yong Zhang

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A 55-year-old woman complains right lower extremity skin rashes and pruritus for 30<sup>+</sup> years. The clinical features were typical of Porokeratosis of Mibelli. Histopathologic examination include routine H&E stains, Crystal Violet stains confirms Cutaneous Amyloidosis secondary to Porokeratosis of Mibelli.

PO17-033

**Clinical observation of 32 cases of chronic urticaria treated by BICOM bio-resonance therapy**

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*Department of Dermatology, Chengdu Second People's Hospital, Chengdu*

**Objective** To observe the effect of the allergen detection and clinical treatment of 32 patients with chronic urticaria by Gemany Bicom Bio-Resonance Therapy (Bicom-b25) in August, 2016.

**Methods** 32 patients with chronic urticaria were randomly selected, use the biophysical therapeutic apparatus, to detect allergen, and then according to the test results using different program mode desensitization therapy, 1 times a week, and will be subject to 8 times (score).

**Results** Using Gemany Bicom Bio-Resonance Therapy treatment of 32 cases of patients with chronic urticaria, curative effect is obvious, the recovery rate of 12.5%, 87.5% efficient, and during treatment patients did not cause any adverse reaction caused by the treatment system.

PO17-034

**Pseudoxanthoma elasticum: A case report**

Ming Yao, Jing-Mu Liu, Xia Hua

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We present an unusual case of pseudoxanthoma elasticum in a 40-year-old woman. She had pale yellow papules and plaques, accompanying skin relaxation, more than 10 years. Skin examination revealed densely distributed yellowish papules in the neck, the size of rice to green bean, and some papules merge into plaques. The rash is generally distributed along the dermatoglyph, and flabby neck form folds. Histopathologic examination shows the epidermal hyperkeratosis, elastic fibers of degeneration and fracture in the lower part of the dermis, performance for irregular fragments or granules, in line with histological changes of pseudoxanthoma elasticum. Elastic fiber staining positive.

PO17-035

**Scalp metastasis as the first sign of non-small-cell lung cancer: case report**

Cun-Huo Jiang

*Chengdu Second People's Hospital*

A 46-year-old man presented to our clinic with a rapidly growing, painful nodule on the right parietal scalp. He had discovered the nodule for almost 1 month and the size was progressed rapidly. He just suffered occasional cough without any local or systemic symptom. His medical history and family history were unremarkable. Physical examination revealed a mass measuring approximately 4.6 cm in diameter on the right parietal scalp with ring embankment uplift margin, which was unmovable, hard texture, ulcerative and bleeding. The right neck and axillary lymph nodes could be touched, no abnormality found in other physical examination. Histopathology and immunohistochemistry of the mass and computed tomography (CT) examination of chest were performed.

PO17-036

**A case of auricular pseudocyst**

Shi-Hua Zeng

*No. 2 Renmin Hospital Chengdu*

A 53-year-old man presented with 1 mass on right auricle 1 week. The histopathologic examination showed that the cyst is located under the skin, its wall is of the cartilage tissue, the cartilage "sunken nest" can be seen near the circle, the nucleus is large, cytoplasm is basophilic cartilage cell. Diagnosis of auricular pseudocyst was made.

PO17-037

**A case of reactive perforating collagenosis**

Hui-Min Meng, Li-Xia Xie, Cun-Huo Jiang

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A 54-year-old woman presented hyperkeratotic erythematous papules with crusts on her extensor side of limbs and buttocks; there was indentation with stick scab in the center of the papule. A histological study showed superficial ulceration, there were few bacterial masses in the inflammatory necrotic layer of ulcerative area, and large collagens

were seen in the center and bottom of the ulcer, there were lymphocytes and eosinophils around the superficial dermis. The Masson staining shows transepidermal positive coloured collagen fibers in the ulcer inflammatory necrotic substance, and there was no abnormal distribution of elastic fibers. Dermoscopy showing a brown crust in the center and white structureless area at the periphery of the lesion, as well as some hairpin vessels at the periphery. The diagnosis is reactive perforating collagenosis.

PO17-038

### **Risk factors for infantile hemangiomas: A systematic review and meta-analysis**

Jing-Zhan Zhang, Yuan Ding, Xiao-Jing Kang

*People's Hospital of Xinjiang Uygur Autonomous Region*

**Objectives** Infantile hemangiomas (IH) is one of the most common tumor in infants. The risk factors of IH have attracted significant clinical and epidemiological research interest in recent years, but the reported results were inconsistent. We make a systematic review and meta-analysis in order to investigate the risk factors of IH.

**Methods** Databases including PubMed, Cochrane Library, Ovid, Web of Science were systematically searched. The associations between the potential risk factors and IH were compared by log odds ratios (logOR), log standard errors (SE) and 95% CI for each of the included studies. The statistical tests were performed using Review Manager 5.3.3.

**Results** We identified a total of 6 studies. Sixteen potential risk factors (female, low birthweight, singleton, multiple gestation, preterm, caesarean section, in vitro fertilization, amniocentesis, chorionic villus sampling, maternal smoking, maternal alcohol, progesterone therapy, vaginal bleeding, gestational hypertension, gestational diabetes, preeclampsia) were evaluated. *P* value <0.05 were found in female sex, low birth weight, progesterone therapy and amniocentesis.

**Conclusions** IH is a multifactorial disease and that predisposing factors such as female sex, low birth weight, progesterone therapy and genetic factors interact with each other leading to the occurrence. Large sample and multicenter studies are needed in order to produce more evidence.

PO17-039

### **A rare case report of Wolf's isotopic response after herpes zoster: lichen sclerosis et atrophicus combined with cutaneous adnexal neoplasms**

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1. NO.2 Renming Hospital Chengdu

2. West China Hospital, Sichuan University

A 61-year-old woman presented with painful vesicles and blood blisters on the right side of her back for 20 days. While she suffered from herpes zoster on the same plaque 6 years ago, after the shingles healed, some hypomelanotic atrophic macules developed on the site of the regional lesions. Physical examination revealed a well-circumscribed, depigmented, atrophic plaque, forming irregular bulla and hemorrhagic vesicle in the center. A subcutaneous nodule about the size of a pea was found on the right side of the lesions. The initial clinical impression was contact dermatitis, thinking about external application of traditional Chinese medicine previously. But she's not responding to antianaphylaxis treatment. A skin biopsy showed that some of the tumor nests were arranged in trabeculae and the others differentiated into sweat gland in the dermis. There were proliferative and glass-like changed connective tissues in the tumor, meanwhile combined with lichen sclerosis et atrophicus. The specimen of local extended resection confirmed to be derived from cutaneous appendages. Immunohistochemical analysis showed bilayer structure in glands and immunoreactivity with SMA, P63, CK5/6, S100 protein,  $\beta$ -catenin, GCDFP15, and CK7. The diagnosis of syringoid eccrine carcinoma should be considered, based on the infiltrative growth pattern and cellular atypia.

PO17-040

**Role of azithromycin in systemic lupus erythematosus by depressing classically activated macrophages**

Jie Wang, Lin Xie, Shang-Shang Wang, Jin-Hua Xu

*Huashan Hospital, Fudan University*

**Objective** To investigate the role of azithromycin in systemic lupus erythematosus by regulating macrophage activation.

**Methods** 12 SLE patients and 6 age, sex matched healthy controls were included. Peripheral blood mononuclear cells (PBMCs) were isolated from patients and healthy controls, CD86 and CD163 were detected by flow cytometry as the classical activation marker and alternative activation marker, respectively. Then, purified CD14<sup>+</sup> monocytes were collected from PBMCs by magnetic activated cell sorting, and the mononuclear phagocytic function was detected by flow cytometry, while the mRNA levels of IL-1 $\beta$ , IL-6 and TNF- $\alpha$  were detected by real-time fluorescence quantitative PCR. Last, patients' monocytes were induced into macrophages in the presence of recombinant human macrophage colony stimulating factor, after induction, macrophages were treated with azithromycin to detect the phagocytic function, expression of CD86 and CD163, as well as the mRNA levels of IL-1 $\beta$ , IL-6 and TNF- $\alpha$ .

**Results** The mononuclear phagocytic function in SLE patients was remarkably lower than that in healthy controls, and the expression of CD163 was significantly lower in SLE patients. On the contrary, the expression of CD86 was obviously higher in SLE patients, as well as the mRNA levels of IL-1 $\beta$ , IL-6 and TNF- $\alpha$ . Meanwhile, the azithromycin-treated macrophages showed increased phagocytic function compared with untreated macrophages, both the mean fluorescence intensity of CD86 and the mRNA levels of IL-1 $\beta$ , IL-6 and TNF- $\alpha$  were significantly reduced in azithromycin-treated macrophages.

**Conclusion** The mononuclear macrophage system exhibited impaired phagocytic function and classically activated phenotype in SLE patients, with massive inflammatory factor secretion. Azithromycin might relieve SLE by depressing classically activated macrophages.

PO17-041

**A case of erythropoietic protoporphyria**

Li-Sha He

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A 7 year-old girl had brown scar on her face and Hands for 3 years. Histopathology examination showed that acanthosis with a large amount of inflammatory exudation and scab. Acanthocyte showed vacuolar degeneration. The inflammatory cell infiltration is not obvious. Shallow edema and degeneration caused the cracks between the epidermis and the upper dermis. The walls of the Small vessels obviously incassated and degenerated. A large amount of cells had been found around perivascularity which were amorphous, homogeneous, incarnadine and PAS(+). Diagnosis: The Erythropoietic Protoporphyria.

PO17-042

**Effect of mental health education on quality of life in 56 patients with severe acne**

Mei-Rong Bai

*No. 2 Renmin Hospital Chengdu*

**Subjects** 56 cases of severe acne patients were intervened with mental health education method, to observe the influence of mental health education on the quality of life in patients with severe acne.

**Methods** The quality of life of 56 patients with severe acne was investigated before and after psychological health

education by using the dermatology life quality scale, to analyze and identify the related factors that affect the life quality of patients. Applying mental health education method (including psychological consultation method and environment instruction method) to implement mental health education for the patients, the individual health education program was formulated. The life quality scale of dermatology was issued by the nurses again when the patient returned to the hospital, to analyze statistically the life quality of the patients before and after the implementation of mental health education.

**Results** The life quality of patients with mental health education improved significantly than before it ( $P < 0.05$ ), being statistically significant difference.

**Conclusions** The implementation of mental health education can effectively improve the bad habits and behaviors of the patients, alleviating the influence of bad mood on patients, shortening the course of disease, reducing disease recurrence and Improving the life quality of patients.

PO17-043

### **A case of lupus erythematosus profundus**

Cong-Hui Li, Bei Kan, Bin Yin, Pei-Mei Zhou

*Second People's Hospital of Chengdu*

A 47-year-old woman presented with erythema and nodule on the right face for 2 months. Immunologic tests revealed positive results for ANA (1: 160 particle type), anti-SM antibody, SSA antibody, Ro-52 antibody, SSB antibody and dsDNA antibody. Dermoscopy examination showed yellow follicular plugging, Telangiectasia, skin atrophy and white scales. Histopathology showed small vascular dilation and inflammatory cells infiltrating around in full layer of dermis and subcutaneous fat and septal. The diagnosis was lupus erythematosus profundus. She was treated with oral prednisone 20 mg twice a day (reduced to 30mg once a day after 1 month) and hydroxychloroquine sulfate 0.2 g twice a day. The lesion gradually resolved.

PO17-044

### **Cutaneous Rosai-Dorfman disease**

Yan Liu, Fen Li, Yong-Hong Lu

*Second People's Hospital of Chengdu*

To report a case of Cutaneous Rosai-Dorfman disease. Female patient, 50 years old, her face red papules and plaques lasted 6 months. The lesions were distributed on the lateral side of the right corner, showing deep red milky grains and large clusters of beans distributed to the papules. The area was about 4 cm × 3 cm. The surface was smooth and slightly tough, and had no obvious adhesion with the surrounding area. Histopathology: No special manifestation of the epidermis, mixed inflammatory cells in the dermis (containing more plasma cells, lymphocytes and a few neutrophil components). The scattered tissue cells were found in the tissue, and the cytoplasm was pale and rich. In the cytoplasm of some tissue-like cells, the morphologically intact plasma cells, lymphocytes and a few neutrophils were "extended into motion" in the cytoplasm of the cells. Immunohistochemistry: the tissue-like cells were S-100 (+), CD68 (+), CD1a (-), and Langrin (-). Special staining: acid resistant staining: negative. PAS staining: negative. Diagnosis: Cutaneous Rosai-Dorfman disease.

PO17-045

**A case of crusted scabies presenting as erythroderma**

Yin-Hua Wu, Juan Bai, Jian-Jun Qiao, Sha Zhou, Yun-Lei Pan, Si-Zheng, Hong Fang

*The First Affiliated Hospital, College of Medicine, Zhejiang University*

A 57-year-old woman presented in our hospital complaining of erythema and desquamation on her scalp and face with intense pruritus for 1 year. At first, she was regarded as drug allergy by thalidomide for multiple myeloma, but there is no effect treating with antihistamine. Then the lesions spread throughout the body 1 month ago. And now she presented with diffused erythema, desquamation with intense pruritus and a bit burning sensation. She has a past medical history of rheumatoid arthritis for 10 years, and she is taking tripterygium wilfordii. There were some abnormal laboratory findings. Such as RF 619.0U/ml, CRP 16.90mg/L, ANA +1: 40. Blood routine examination, level of T cell subset and tumor markers, quantitation of  $\kappa$  and  $\lambda$  chains were normal. Ultrasound showed bilateral axillary lymph nodes. Chest CT plain scans showed multiple enlarged lymph nodes of bilateral armpit. As for the histopathology, there is a sarcoptid presented in the epidermis. Therefore, we made a diagnosis of Norwegian scabies. She was treated with oral metronidazole sulfur ointment for external use. After a month, the disease basically cured.

PO17-046

**A case of pyoderma gangrenosum and bullous pemphigoid**

Qian Li, Chong Sun, Hong-Yan Liu, Song Zheng, Mei Liu

*Department of Dermatology, No.1 Hospital of China Medical University*

Pyoderma gangrenosum is an idiopathic, ulcerative inflammatory disease. It often combines with other diseases, such as inflammatory bowel diseases, arthritis, blood diseases and so on. Pyoderma gangrenosum complicated with bullous pemphigoid in a patient is relatively rare. A 53-year-old female patient was presented with erythemas and pruritus on her left leg for four years without care and treatment. The erythemas amplified, accompanied by exudation, scab and pain two months ago. Similar skin lesions and pustules appeared near the original erythemas one month ago. Combined with laboratory examination and skin biopsy, she was diagnosed with pyoderma gangrenosum and bullous pemphigoid. Treated with methyl prednisolone, the lesions were well controlled.

PO17-047

**A case of aquagenic acrokeratoderma**

Pei-Mei Zhou, Feng Li, Yong-Hong Lu, Xiao-Yu Deng

*No.2 Renmin Hospital Chengdu*

A case of aquagenic acrokeratoderma was reported. A 26-year-old man presented with a 1-week history of gray papules and plaques on his hands after exposure to water. Gray keratinized papules and plaques arose on the bilateral back of hands and right wrist extensor after 3 to 5 minutes immersion in water, which turn to dark red plaque after drying. Histopathological analysis of the skin biopsy specimen indicated hyperkeratosis and lightly acanthosis in the epidermis, and eccrine sweat glands and ducts increase in derma. A diagnosis of aquagenic acrokeratoderma was made.

PO17-048

**A case of Degos disease with ahead system symptoms**

Xiao-Ke Liu, Jun Li

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A 35-year-old man presented with a 3-year history of asymptomatic erythematous papular eruptions on his body. He also complained about occasional nausea, vomiting and abdominal pain during the past 5 years. He had no neurological, respiratory or urinary symptoms. His past medical history was unremarkable and no first-degree relatives shared similar lesions. The physical examination showed that erythematous papules ranging from 2 to 10 mm in size were distributed over her trunk and extremities. The lesions had central ulcerations with overlying hemorrhagic crusts or showed white porcelain-like center with telangiectatic rim. The abdominal examination revealed tenderness over the middle upper abdominal. Histology of a representative lesion showed sparse perivascular lymphocytic infiltrates with thickened vessel walls and occasional thrombosis were also present. Immunohistochemistry showed UCHL-1(+), CD43(+), CD20(-), CD30(-). Gastroscope indicated gastritis. The complete blood count, serum biochemistry analysis, kidney and liver function tests, coagulation parameters and the erythrocyte sedimentation rate (ESR) were all normal. ANA, ENA, anti-dsDNA, anti-Ro were all negative. A diagnosis of Degos disease was established based on clinical features and skin biopsy. We initiated treatment with acetylsalicylic acid 225 mg daily. There was no new rash and the patient's condition was stable when he was discharged.

PO17-049

**An acute pain rash: Dermoscopy as the key to diagnosis and treatment**

Xue-Yan Yao, Jian-Zhong Zhang, Cheng Zhou

*Peking University People's Hospital*

A 31-year-old Chinese female, presented to an outpatient dermatology department with the complaint of acute pruritus, burning and moderately swelling on her left cheek for only 10 minutes. Dermoscopy was performed and we found black thorns which could not be observed by naked eyes. We sterilized the lesion with alcohol, removed the thorns as much as possible with ophthalmic forceps under the guidance of dermoscopy. The patient was completely cured within 24 hours with no systemic symptoms or pigmentation. This case directly showed a new usage of dermoscopy in diagnosis and therapy especially in acute contact dermatitis. Tiny things such as caterpillar thorns and hairs or other tiny sensitizer can be easily observed and removed by dermoscopies with higher magnification.

PO17-050

**SLE patient of verrucous lupus erythematosus: A case report**

Di-Xin Wang, Jie Zheng

*Ruijin Hospital affiliated to Shanghai Jiaotong University School of Medicine*

A 20-year-old woman complained of her facial erythema for 5 years, and hand pimples and plaques for 2 weeks. During the course, the patient had not experienced fever, oral ulcers or joint pain. She had attended a local medical center at that time, and was diagnosed SLE previously. Afterwards the patient presented with headache and personality changes and was further considered lupus encephalopathy. Prednisolone, chloroquine and CTX was prescribed but there was no sign of remission. On physical examination, the neck and cheeks of the patient was found to have a scattered erythema with local telangiectasis, and fingers and palms presented with round-like papules with defined margins and small amount of scales. There was purplish striae on her extensor side of back and both legs. Laboratory tests revealed that WBC  $2.8 \times 10^9/L$ , Hb 109 g/L, Plt  $194 \times 10^9/L$ ; ESR 14 mm/h; ANA 1: 640 (+),

ENA-RNP/SM(+), SSA (+), SSB(+); C3 45 mg/dl, C4 7mg/dl. Results of urine tests, liver and kidney function parameters, brain MRI and EEG were within normal ranges. Histological examination showed hyperkeratosis and parakeratosis lesion, thinned stratum granulosum, atrophic atrata spinosum, basal layer liquefaction with a few scattered dyskeratotic cells. Corium layer vessels were surrounded by dense small lymphocytes. DIF indicated positive IgM and linear deposition on basement membrane. Hypertrophic LE or verrucous DLE was first described by Behçet's in 1940 as lupus erythematosus hypertrophicus et profundus. As we all know, verrucous LE is a special type of DLE, and in this case, verrucous LE was presented in a SLE patient, whether it's a manifestation in the skin of SLE remains to be elucidated by more cases. The lesions are most commonly localized at areas exposed to sunlight, such as the face, the dorsa of both hands and extensor sides of the arms. In this case, oral prednisolone, chloroquine, total glucosides of paeony, eloson cremor and an accumulated dose of 6.4g CTX was prescribed. Remission of skin lesions was achieved in 3 months.

PO17-051

### **Thymoma-associated multi-organ autoimmunity: 2 cases of graft-versus-host disease-like erythroderma**

Ye-Ping Ruan, Bo Wang, Xiao-Qing Zhao, Ruo-Fei Shi, Jie Zheng

*Ruijin Hospital, Shanghai Jiaotong University School of Medicine*

**Background** Thymoma-associated multi-organ autoimmunity (TAMA) whose clinical and pathological features are similar to those of graft-versus-host disease is a rare paraneoplastic syndrome, mainly affecting the skin, gastrointestinal tract, and liver. This article reported 2 cases of Thymoma-associated multi-organ autoimmunity. To summarize the characteristics of our cases and explore the pathogenesis, differential diagnosis and prognostic factors of TAMA.

**Methods** In summarizing our cases and the others reported in the literature, concentrating on the clinical data and prognosis of TAMA.

**Results** The above two cases reported have erythroderma-like lesions. Thymoma was found shortly before the admission in Case 1, and Case 2 had a history of thymoma and myasthenia gravis for 5 years. Abnormalities of liver function were observed in both patients, but no diarrhea was observed. The acetylcholine receptor antibody was positive in case 1 and negative in case 2. In both cases, skin pathology and immunohistochemistry were similar to those of GVHD. Case 1 got fully remission after thymectomy without any recurrence during the follow-up of 9 months. Case 2 died of respiratory failure during hospitalization.

**Conclusions** There have been 22 related reports so far (including 2 cases in this article). Among them, 17 cases have erythroderma and 13 cases have abnormal liver function. The Survival rate is 5/22. Pathogenesis may be related to autoimmune regulatory factor (AIRE) gene expression, abnormal function of Treg and humoral immunity. DIF, serum Dsg1 and Dsg3 can help distinguish TAMA from paraneoplastic pemphigus while drug eruption, viral rash, psoriasis, and sezary syndrome should be distinguished. Treatment: Systemic glucocorticoids can improve symptoms, but not change the prognosis. Long history of thymoma, other system involvement, and positive acetylcholine receptor antibody are all signs of poor prognosis.

PO17-053

### **Inflammatory linear verrucous epidermal nevus: A case report**

Jin-Wen Huang, Min Lin, Chao Ji, Xin-Yu Lin, Jing Zhang, Bo Cheng

*The First Affiliated Hospital of Fujian Medical University*

Inflammatory linear verrucous epidermal nevus (ILVEN) is a relatively rare disorder of skin that present with birth and develop in early age, consisting of pruritic linear papules and/or plaques. The treatment of ILVEN is often challenging. We report on a 6-year-old boy patient with ILVEN. The lesions are bilateral. None of the boy had any extracutaneous abnormalities. Histological examination of the excised lesion confirmed the diagnosis.

PO17-054

**A case of subungual exostosis**

Xiu-Cheng Wang, Min Lin, Chao Ji, Bo Cheng

*The First Affiliated Hospital of Fujian Medical University*

A case of subungual exostosis is reported. A 24-years-old female patient presented with a 4-month history of an asymptomatic mediodistal swelling of the great toenail of her left foot. She felt no subjective symptoms. Physical examination showed a bone mass of about 4 mm to 5 mm was bulged from the bottom of the first toe of the left foot and the toenail was deformed. The upper deck was broken and fell off. Extensive hyperkeratosis and thickened spinous layers were seen under the microscope. The tumor was located in the middle and lower layers of the dermis. The focal ossification zone was seen and consisted of trabecular bone. Hyaline cartilage was not seen. The margin is not cut. Diagnosis: subungual exostosis

PO17-055

**Challenge of diagnosing seborrhoeic keratosis by reflectance confocal microscopic**

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**Background** Seborrhoeic keratosis (SK) is one of the most common skin tumors seen by dermatologists. It should be differential with many diseases, especially skin tumors. Reflectance confocal microscopy (RCM) has been applied for evaluation of SK. There are a few studies described the RCM of SK. The aim of the study was to find the challenge of diagnosing seborrhoeic keratosis by reflectance confocal microscopic.

**Methods** 390 patients with a clinical suspicious diagnosis seborrheic keratosis were enrolled in this study, and each patient lesions were imaged with RCM. 37 of these patients performed a biopsy in order to be given a histological diagnosis. We retrospectively analyzed the outcomes of RCM diagnosis and histopathology diagnosis, then found the RCM characteristics of biopsy-proven lesions.

**Results** According to RCM images, 258 of 390 (66.2%) patients were diagnosed with SK, 97 of 390 (24.9%) patients could not be given a diagnosis by the dermatologist according to RCM. Of all 37 biopsied lesions, 23 were SK, and 6 were actinic keratosis, 2 were basal cell carcinoma, 2 were squamous cell carcinoma.

**Conclusion** It is challenge to diagnose seborrhoeic keratosis by reflectance confocal microscopic. It may due to the variable clinical and RCM appearances of SK, and limited depth of RCM.

PO17-056

**Cutaneous metastasis from ovarian serous adenocarcinoma**

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*The 1st Affiliated Hospital of Fu Jian Medical University*

Cutaneous metastasis of ovarian cancer is rare and metastatic cancer of the umbilicus, known as Sister Mary Joseph's nodule, is typically associated with adult cancers of the gastrointestinal tract and ovary. We report a case of a 72-year-old woman with a rapid growing erythematous, well-defined nodule localized on the umbilicus. A skin biopsy was performed and histopathological findings were compatible with a cutaneous metastasis of adenocarcinoma and immunohistochemical staining raised the possibility of an ovarian serous adenocarcinoma. The report of PET-CT suggests that there is a right ovarian cancer with extensive pelvic metastasis, the metastasis of umbilicus is most possible. We report a very uncommon case because of the presentation of ovarian carcinoma as cutaneous metastasis.

PO17-058

**Cutaneous plasmacytosis with normal  $\gamma$ -globulin**

Wen Yuan

*The First Hospital of Jilin University*

Cutaneous plasmacytosis (CP) is a rare skin disorder that is histologically characterized by a benign polyclonal proliferation of mature plasma cells in the skin, producing multiple reddish-brown plaques and nodules mainly on the trunk. This condition is also characterized by Hyper- $\gamma$ -globulinemia. In this report, we present a rare case of cutaneous plasmacytosis with normal  $\gamma$ -globulin. A 35-year-old man presented with mildly pruritic reddish-brown plaques and nodules on the right gluteal, inguinal groove and interfemur for eight months. Physical examination, laboratory investigations, radiographic examination, and bone marrow puncture examination were negative for systemic involvement and lymphadenopathy. Serum immuno- electrophoresis showed normal  $\gamma$ -globulin levels. Histopathological examination showed perivascular and adnexal infiltration of mature plasma cells and lymphocytes in the dermis and superficial subcutaneous tissue. Immunohistochemistry showed positive staining for CD20, CD38, CD79a, CD138, kappa and lambda immunoglobulin light chains. The final diagnosis was cutaneous plasmacytosis.

PO17-059

**A case of lupus erythematosus-lichen planus overlap syndrome on sole**

Jun-Ying Li, Yu Zhang, Cai-Xia Wang, Gui-Ling Lu, Li-Tao Zhang

*Tianjin Academy of Traditional Chinese Medicine Affiliated Hospital*

A case of lupus erythematosus-lichen planus overlap syndrome on sole is reported. A 55-year-old male presented with recurrent dark red plaque and erosions on his soles for 20 years. His general condition is good, Physical examination found nothing abnormal. Skin examination showed edematous erythemas and erosions on left heel. Histopathology revealed epidermis with hyperkeratosis, liquefaction degeneration of basal cells. The superficial dermis showed fibrin deposits with perivascular lymphocytic infiltrate. Direct immunofluorescence showed perivascular deposits of complement C3 at the superficial dermis. Laboratory test revealed ANA was positive, with the titer of 1: 640, anti-RNP antibody and anti-ENA antibody were positive. Blood routine test showed WBC was  $2.6 \times 10^9/L$ . With the history and investigations, a diagnosis of LE-LP overlap syndrome was made. Treatment with oral hydroxychloroquine (200 mg/d) and topical 0.1% tacrolimus ointment was successful.

PO17-060

**TNF $\alpha$  antagonists-Induced psoriasiform eruption with histopathologic features of lichenoid dermatitis in a patient with erythema multiforme drug eruption**

Yan-Yan Hu, Yun Xia, Wei-Ming Zhang, Fei Su, Xiao-Yong Zhou

*Wuhan No.1 Hospital*

A 66-year-old male had generalized itching multiform erythema without blister, oral and genital mucosa erosion after been administered aspirin/dlysine because of the upper respiratory tract infection with fever. According to medication history and clinical manifestation, the patient was diagnosed with erythema multiforme drug eruption. He had been treated with a 6 times of recombinant human type II tumor necrosis factor receptor-antibody fusion protein of 25mg subcutaneously once every other day, and then these rashes vanished completely. Follow-up 2 weeks later, there were psoriasiform rashes with itchy which was on his abdomen at first and then on his chest, back and extremities in turn. He was not on any other medications or topical treatments at the time and denied a positive family history of psoriasis. The skin biopsy was taken from abdomen. Histopathology revealed focal parakeratosis, vacuolar degeneration of epidermal basal cells, hyperplasia of vessel in the upper dermis, infiltration of band-like, lichenoid, lymphocytic cells

in the dermis papilla. We hypothesized that the balance of TNF $\alpha$  and its downstream cytokines were overly destroyed because of TNF $\alpha$  antagonists therapy. After he was treated with narrow band UVB phototherapy and topical 0.1% monetasone furoate lotion used, the psoriasiform rashes began to fade in subsequent weeks. No new rash was found during the six months follow-up.

PO17-061

### **Acquired lymphangiectasia (lymphangioma circumscriptum) of the vulva mimicking condyloma acuminatum**

Chen-Chen Xu, Jun-Hui Wang, Yi-Jia Xu, Zhan-Shuo Xiao, Bing-Nan Cui

*Guang'anmen Hospital, China Academy of Chinese Medical Sciences*

A 73-year-old woman presented with a 6-month history of multiple translucent to flesh-colored, wart-like or flat-topped papules on the vulva. She had undergone surgical excision and lymphadenectomy due to cervical cancer 17 years ago. Dermoscopy revealed round or oval lacunae surrounded by whitish areas, as well as finger-like patterns and some irregular vessels. Histopathological examination showed multiple dilated lymphatic channels in the dermis. The endothelial cells of lymph channels were positive for D2-40, and negative for CD34 by immunohistochemistry. A diagnosis of acquired lymphangiectasia of the vulva (ALV) was made. ALV is a rare benign condition due to lymphatic obstruction, which is often caused by malignancies, surgery, radiotherapy, infections and Crohn's disease. Atypical cases may be misdiagnosed as infectious diseases, like condyloma acuminatum. Although rarely reported, we believe that dermoscopic examination may help the differential diagnosis of the disease.

PO17-062

### **Dermoscopic features of Chinese patients with vulvar lichen sclerosis**

Yi-Xin Luo, Jie Liu, Cheng Chi, Shi-Wang, Zhao-Liu, Dong-Lai Ma, Hong-Zhong Jin

*Peking Union Medical College Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College*

**Objective** To describe dermoscopic features of Chinese patients with vulvar lichen sclerosis (VLS), and to explore the application value of dermoscopy in assisting the diagnosis of VLS.

**Methods** Seventeen patients with VLS were collected from Department of Dermatology of Peking Union Medical College Hospital between August 2015 and June 2017. A total of seventy-five dermoscopic images were captured and analyzed.

**Results** The common dermoscopic features of VLS include dotted, linear, hairpin and comma vessels, irregular or branched arrangement, yellowish-white structureless area, brown or blue-gray pigmentation. The uncommon dermoscopic features of VLS include shiny white streaks, rosettes, comedo-like openings and keratotic plugs.

**Conclusion** Dermoscopy has good application value in assisting the diagnosis of VLS.

PO17-063

### **Adult xanthogranuloma: A case report**

Min Lin, Jing Zhang, Yu Guan, Jin-Wen Huang, Chao Ji, Bo Cheng

*The First Affiliated Hospital of Fujian Medical University*

A case of adult xanthogranuloma is reported. A 39-year-old male patient presented with a 4-month history of yellow nodule on the right upper abdomen. He felt no subjective symptoms. Physical examination showed a yellow-colored nodule. The maximum diameter of the plaque was 1.0 centimeters. No erosion and exudation were found. Histologic features were consistent with xanthogranuloma with diffuse mixed infiltrate of foamy histiocytes, Touton giant cells and lymphocytes. Diagnosis: adult xanthogranuloma.

PO17-064

**Dermatologists vs. deep convolutional neural network: the comparison of diagnostic accuracies for melanocytic nevus and seborrheic keratosis**Shi-Wang<sup>1</sup>, Jie Liu<sup>1,4</sup>, Chen-Yu Zhu<sup>1</sup>, Chang Shu<sup>1</sup>, Hang-Ning Zhou<sup>2</sup>, Feng-Ying Xie<sup>2</sup>, Tao Xu<sup>3</sup>, Hong-Zhong Jin<sup>1</sup>

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**Objective** To test the ability of deep convolutional neural network (CNN) on automated classification of cutaneous diseases images.

**Methods** CNN network ResNet-50 was trained with 5094 dermoscopic images of melanocytic nevus and seborrheic keratosis using transfer learning. Then the resulting CNN two-classification model was applied to 30 melanocytic nevus and 30 seborrheic keratosis (SK) dermoscopic images. Meanwhile, 95 trained in dermoscopy and experienced dermatologists gave their diagnosis about the same dermoscopic and corresponding clinical images. Then we compared diagnostic accuracies of both, and further analyzed the misclassified images from CNN.

**Results** The CNN automatic classification model had the accuracies of 100% and 76.67% for melanocytic nevus and SK respectively, the total accuracy was 88.33%, the average accuracies of 95 dermatologists were 82.98% and 85.96% for two diseases respectively, The total accuracy was 84.47%,  $P > 0.05$ , the results were not statistically significant. We divided the possible misclassification causes into three categories: special type (such as too many pigments, marked keratosis), with typical features but interference factors were involved, with typical features but the reason for the error classification could not be found.

**Conclusions** CNN automatic classification model reach the same level with professional dermatologists in the two-classification task of melanocytic nevus and seborrheic keratosis. The reason for misclassification of CNN still needs to be explored by dermatologists and professionals of artificial intelligence.

PO17-065

**Psoriasiform keratosis: A case report**

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Psoriasiform keratosis (PK) is a benign proliferation of the epidermis usually seen in older people, of both sexes. Etiology and prevalence are unknown. Here we report a case of psoriasiform keratosis. To the best of our known, this is the first case of PK reported in China. A 71-year-old male patient presented with scaly plaque on the inner left thigh for half a year. Topical steroids therapy was ineffective in our patient. Histopathological examination showing epidermis with pronounced psoriasiform hyperplasia associated with hyperkeratosis, intra-corneal neutrophilic aggregates. Mycological examination for fungi were negative. A diagnose of psoriasiform keratosis was made. Psoriasiform keratosis is a rare clinical entity characterized by a solitary papule or plaque with scaly or keratotic surface, located mainly in the lower limbs. Differential diagnoses include seborrheic keratosis, actinic keratosis, or squamous cell carcinoma. Surgical excision is necessary.

PO17-066

**Utility of dermoscopy in discosmetic dermatoses**

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**Objective** To summarize the utility of dermoscopy in discosmetic dermatoses, such as acne, melasma, vitiligo, and to improve the diagnosis and management of these diseases.

**Methods** Search for and review related articles on PubMed and other databases.

**Results** Dermoscopy can assist in the differential diagnoses and management of acne, scar, acne rosacea, melasma, vitiligo, port-wine stains, verruca plana, and hair disorders.

**Conclusions** With the generalization and popularization of dermoscopy, its indications, which are no longer confined to pigmented diseases, have been expanded to the management of discosmetic dermatoses.

PO17-067

**Cutaneous plasmacytosis: Report of a case and review of the literature**

Li-Hong Zhao, Song-Mei Geng

*Northwest Hospital, The Second Hospital Affiliated to Xian Jiaotong University*

Cutaneous plasmacytosis (CP) is a rare disorder of which occurs mainly in the Asian population. It is characterized by multiple dark-brown papules and plaques clinically and prominent hyperplasia of mature plasma cells microscopically in association with polyclonal hypergammaglobulinemia. There are two variants: cutaneous plasmacytosis with involvement limited to the skin and systemic plasmacytosis defined as involvement of two or more organ systems. We describe a 33-year-old male with a peculiar brown skin eruption over trunk, armpits and groins for more than a year in association with polyclonal hypergammaglobulinemia. Physical examination showed no lymphadenopathy. The skin biopsy specimen revealed dermal infiltrates of mature plasma cells and lymphocytes. The immunohistochemical study revealed polyclonal plasma cells. CP should be differentiated from lichen planus, granuloma fungoides, cutaneous plasmacytoma, multicentric plasma-cell type Castleman disease and IgG4-related skin diseases. Although most of these cases showed a benign clinical course, a few cases have shown an aggressive clinical course with a fatal outcome. Therefore, long-term follow up is necessary for these cases.

PO17-068

**Cutaneous Rosai-Dorfman disease: A case report and review of literature**

Li-Hong Zhao, Song-Mei Geng

*Northwest Hospital, The Second Hospital Affiliated to Xian Jiaotong University*

Rosai-Dorfman disease, also known as sinus histiocytosis with massive lymphadenopathy, is a benign proliferative disorder of histiocytes with an unknown etiology, which is characterized by overproduction and accumulation of histiocytes within lymph node sinuses and many other extranodal sites, including skin, oral and nasal cavities, respiratory tract, eyelid, and periorbital area. Cutaneous Rosai-Dorfman disease is rare and develops slowly. In this case, a 12-year-old girl presented with red plaque on the left cheek for 1 year. Clinical characteristics revealed a 3\*3 cm round, infiltrating red plaque on the left cheek, without scales, erosion or exudation on the surface, without pain or itching. System examination was normal, superficial lymph nodes were not palpable enlargement. Histopathological examination of the lesions demonstrated diffuse lymphocyte, histocyte and sparse plasmacyte infiltration, together with histiocytes showing phagocytosed inflammatory cells (emperipolesis). Histiocytes demonstrated immunoreactivity with the antibodies for S100 and CD68, whereas they were negative for CD1a and Langerin. Laboratory tests were normal. The patient was diagnosed with cutaneous Rosai-Dorfman disease, which should be

differentiated from infectious granuloma, cutaneous lupus erythematosus, reticulo-histiocytosis, Langenhanscellhistiocytosis and malignant histiocytosis. Topical tacrolimus ointment therapy was effective for cutaneous lesions. Its etiology, clinical manifestation, diagnosis, differential diagnosis, treatments and prognosis were reviewed. Surgery, local radiotherapy, topical glucocorticoids therapy are often used for single lesion, and systemic methylprednisolone, thalidomide and chemotherapy therapy are often used for multiple lesions.

PO17-075

### Survey on the current situation of continuing education for dermatologists in Hunan province

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*Department of Dermatology, the Third Xiangya Hospital of Central South University*

**Objective** To understand the current situation of continuing education and knowledge gaps of dermatologists at different level of medical institutes in Hunan Province.

**Methods** A questionnaire survey was conducted among clinical dermatologists in Hunan Province. A total of 300 questionnaires were distributed and 286 were recovered. The data was descriptively analyzed with SPSS 13.0.

**Results** 286 dermatologists from hospitals at all levels were studied and we found that despite their differences in academic qualifications, their primary goal of continuing education was to obtain career continuity and improve their competitiveness. At present, the main ways to receive continuing education are programs at the national, provincial and hospital level. We also found that with the popularization of Internet technology, distance continuing education had also been popularized. Content requirements, ranked in the top five are dermatology clinical new technology, dermatology new progress, doctor-patient communication skills, skin laser, skin allergies and rheumatology. However, we must be aware of the shortage of current continuing education. For example, the funding issues for the course increases as the level of the hospital declines.

**Conclusions** The current continuing education can basically meet the actual needs of doctors at all levels of medical institutions, but investment in basic medical institutions still needs to be strengthened. There is a clear demand for new technologies and new developments. However, due to the differences in academic qualifications and clinical practice requirements, the demands also have slightly differences.

PO17-076

### A case of phacomatosis pigmentovascularis

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*2. SUNY Upstate Medical University*

**Objective** To characterize clinical features of phacomatosis pigmentovascularis.

**Methods** clinical features from a case of phacomatosis pigmentovascularis was retrospectively analyzed.

**Results** A 5-year-old boy presented with erythema on the face, neck, upper limbs and trunk, dark blue patches on the back since birth. The colors of skin lesions had been gradually fading. The boy did not receive any treatments. His parents denied he had other diseases. No similar skin lesions were found in his family members. Physical examination displayed that irregular port-wine-colored macules or patches were predominantly on the face and neck. The borders of the erythema were not well-circumscribed. After pressing, the erythema can turn white. Blue gray pigmentation was found on the bilateral sclera. Large scales of blue-grey to blue-black patches were on the back. The borders were well-circumscribed. In some area, the blue-grey patche was overlapped with erythema. On the upper limbs, especially the forearms and palms, reticulated erythematous patches, which were like the cutis marmorata telangiectatica congenita, were found. We also noticed there were scoliosis and skeletal abnormalities on the maxillofacial region. According to the clinical presentations, we attained a diagnosis of phacomatosis pigmentovascularis.

**Conclusion** We presented a unique case of phacomatosis pigmentovascularis, which had a rare sign of cutis marmorata telangiectatica congenita like erythema.

PO17-077

**Study on mechanism of miR-222 regulates the proliferation of fibroblasts in hypertrophic scar via MMP1**

Yi Zhang, Kang Zeng

*Nanfang Hospital, Southern Medical University*

**Objective** To explore the functions of miR-222 in hypertrophic scar (HS) and the underlying mechanisms in the fibroblast (Fb).

**Methods** RT-qPCR was conducted to estimate miR-222 expression in the HS and the normal tissues. MTT assay, flow cytometry and Western blot were employed to detect the cell activity, cell cycle distribution, apoptosis and the levels of related proteins after Fb were transfected with miR-222 mimic /inhibitor. Direct target of miR-222 was evaluated by dual-luciferase reporter assay. The expression of MMP1 mRNA/ protein levels in the Fb transfected with miR-222 mimic /inhibitor was determined by RT-qPCR and Western blot. MTT assay, flow cytometry , and Western blot were also employed to detect the cell activity, cell apoptosis, and the levels of related proteins after Fb were transfected with miR-222 mimic+MMP1, miR-222mimic.

**Results** miR-222 was significantly upregulated in HS fibroblasts, compared with their control counterparts. Overexpression of miR-222 enhanced the cell activity of HS fibroblast, increased the cell population in the S phase and inhibited the cell apoptosis. Enhanced expression levels of Col1A1, Col3A1 mRNA / protein levels, increased the protein levels of PCNA, cyclin D1, cyclin E1 and CDK1, and reduced the protein levels of cleaved caspase-3/9. Where as miR-222 suppression triggered the opposite effects. miR-222 played a regulatory role in HS by negatively regulating its target gene MMP1 by binding with its 3'-UTR. Overexpression of MMP1 attenuated the effects of miR-222 in the Fb.

**Conclusion** miR-222 and MMP1 may as novel biomarkers and targets for diagnostic and therapeutic approaches for HS.

PO17-078

**Analysis of clinicopathologic features of cutaneous Rosai-Dorfman disease**

Ying Zhou, Gui-Ying Zhang, Jing Zhang, Ya-Ping Li

*Department of dermatology, Second Xiangya Hospital, Central South University*

**Objective** Rosai-Dorfman disease (RDD), also called sinus histiocytosis with massive lymphadenopathy, is an uncommon hitiocytic proliferative disorder involving cervical lymph nodes. Cutaneous RDD (CRDD) is really rare which limited to the skin. To identify the characteristics of CRDD, we analyzed the clinical and histopathological profiles of this disease.

**Methods** Eight patients with diagnosis of CRDD from 2013 to 2017 at the Second Xiangya Hospital of Central South University were reviewed. Clinical presentations and coursed of each case were analyzed. Tissue specimens from each patient were examined and immunohistochemical stainings were performed.

**Results** there were four men and four women with a mean age of onset of 41.1 years. The age of female patients (33.5 years old) was much younger than that of male patinets (51.3 years old). The clinical presentations include papules, small nodules and indurated plaque. The most lesions were small nodules or nodules on a plaque. Two patients had lesions involved more than two sites, while the rest of six involved only one site. The most involved anatomical site was limbs, followed by trunk and face. The lesions in five patients resolved spontaneously. Spontaneous remission of the satellite nodules was achieved in one patient who had tumor-like lesion surgically excised. Two male patients had persistent lesions. Histologically, all the specimens were characterized by inriltrations of large pale histiocytes intermingled with lymphocytes, plasma cells, and sometimes neutrophils and eosinophils. One patient with extensive lesions showed the histiologic features of sarcoidosis. Emperiopolesis was an important feature. The strong immunoreactivities of the histiocytes to S-100 protein and CD68 were helpful to confirming the diagnosis.

**Conclusion** CRDD is a benign and self-limited disease, female patient is characterized by younger age of onset and shorter duration compared to men. It is important to recognize the clinical and histologic features of this disease.

PO17-079

**A case report of cutaneous angiosarcoma by surgical treatment and photodynamic plus chemotherapy**

Di-Hui Liu, Ming-Liang Chen, Shuang Zhao, Fang-Fang Li, Li-Xia Lu, Kai Huang, Xiang Chen

*Department of Dermatology, Xiangya Hospital, Central South University*

Angiosarcoma is a rare, highly malignant tumor that originates from vascular or lymphatic endothelial cells. The tumor is strongly invasive and metastatic which occurs predominantly in the skin of the head and neck. At the same time, it is difficult to obtain a clean cutting margin due to its diffuse lesions and large area. There is a non-invasive treatment called photodynamic therapy which can clearly define the boundaries of tumors, shrink tumor volume, so it can be combined with chemotherapy and surgery to treat angiosarcoma.

There is a case of a 49 years old female patient. She had been found a head mass for more than 4 months. Physical examination: there are 6 red masses scattered on the head, the most size is about 3\*2cm, with unclear boundaries, a little ulcer and exudation, and soft texture. Histopathology hematoxylin-eosin showed that the vascular lacunae surrounded by diffuse tumor cells were seen in the dermis, and the vascular lacunae were coincident with each other. The vascular linings were hyperplastic endothelial cells. Some of the endothelial cells were darkly stained and had a karyotomy, which is considered angiosarcoma. After 5 cycles of standard chemotherapy for paclitaxel, no metastases were seen throughout the body, but the skin lesions were no significant improvement. After the patient was informed, she was treated with photodynamic therapy 5 times (20% 5-aminolevulinic acid, 4 hours of external application, and 2 cm outside the tumor boundary). The size of the two lesions was reduced by about four-fifths compared with before. In addition, the boundary was clear, the color was lighter than before, the texture was hard, and no exudation and ulceration was observed. The patient underwent surgical treatment on October 25, 2017, and she had Extend 2cm of complete resection of the remaining lesions along the tumor boundary. Postoperative pathology showed that the scalp vascular originated from tumor, but no tumor residue was seen at the margin and basement. There was no recurrence after half a year and it is still being followed up.

Angiosarcoma has a poor prognosis and is rarely curable. Studies have shown that the use of chemotherapy plus surgery can increase the overall survival of angiosarcoma. However, the patient suffered from generalized skin lesions with unclear boundaries and the operation is difficult after chemotherapy. Preoperative photodynamic therapy reduced the scope of surgery that decreased the risk of surgery and increased the likelihood of obtaining a negative margin, which was beneficial to the operation. To sum up, in clinical practice, it can be tried and popularized that preoperative photodynamic therapy was used for cutaneous angiosarcoma, and it is worth to further explore the possibility that photodynamic can be used as a new adjuvant treatment for cutaneous angiosarcoma.

PO17-080

**Clinical manifestations and gene mutations of 25 patients with neurofibromatosis type 1 from Chinese 10 families**

Hui Chen, Xue-Fei Lin, Wei Zhu

*Xuanwu Hospital Capital Medical University*

**Objective** To identify the common clinical manifestations and gene mutation types of NF1 gene in Chinese Neurofibromatosis type 1 (NF1) patients.

**Methods** The NF1 patient's physical examination results and imaging findings were recorded in detail. The blood samples of 25 NF1 patients from 10 Chinese families were collected, and the peripheral blood DNA was extracted. Polymerase chain reaction was used to amplify the complete exon and its flanking sequence of *NF1* gene. Sanger sequencing analysis was directly conducted to the amplification products of PCR. MLPA analysis was performed to the patients without abnormalities in Sanger sequencing to detect the large fragments loss of the *NF1* gene.

**Results** Twenty-five (25/25) patients have café au lait spots, freckles in the armpit and inguinal area are also common (19/25). Twenty-four (24/25) patients have neurofibroma. Four patients have plexiform neurofibroma. Five (5/25) patients have other tumors. Three patients (3/25) had difficulty in learning, and three (3/25) had Lisch node in their iris. Ten gene mutations were identified, including four nonsense mutations (c.6686>GA, c.2088G>A, c.3826C>T, c.1318C>T), three deletion mutations (c.7096\_7101delAACTTT, c.8077delT, c.4840delT), two suspected splicing mutations (IVS22 +5G>A, IVS10+5G>C) and one duplication mutation (c. 3236\_3240 dup TTCTA). The 10 mutations were distributed in eight different exons and two introns.

**Conclusions** NF1 is a common autosomal dominant hereditary disease that is primarily characterized by multiple café au-lait spots (CALs) and skin neurofibromas. The mutation types of *NF1* gene are complex and varied, and most gene mutations can produce truncated neurofibromin. There is no clear mutation hot spot for *NF1* gene at present.

PO17-081

**A case of stucco keratosis misdiagnosed as porokeratosis**

Hui Chen

*Xuanwu Hospital, Capital Medical University*

This case is the first to describe a case of stucco keratosis misdiagnosed as porokeratosis. Pathological examination, an invasive inspection, can help distinguish stucco keratosis from porokeratosis. Dermoscopic examination, a non-invasive inspection, also helps differentiate stucco keratosis from porokeratosis. Patients are more likely to accept the dermoscopic examination.

PO17-082

**Cutaneous sarcoidosis masquerading as lupus vulgaris**

Bei-Lei Xu, Xu Yao, Xiu-Lian Xu

*Institute of Dermatology, Chinese Academy of Medical Sciences*

A 13-year-old healthy child presented with annular erythematous plaques, maculopapule and slight atrophy on his face for 2 years. He had been treated with isoniazid and rifampicin for one year, but the lesion still slowly expanded. Culture for fungal and tuberculosis were negative. Tuberculosis infection T cells and polymerase chain reaction test of tuberculosis were also Negative. Histopathological examination of a skin biopsy revealed multiple well-formed non-necrotizing granulomas of the upper dermis, surrounded by a small amount of lymphocyte infiltration; negative acid-fast stain; negative periodic acid-Schiff stain, supporting the diagnosis of cutaneous sarcoidosis. Further investigation of liver and kidney function was normal. The patient sustained improvement during several months course of oral therapy with prednisone 20 mg/d and topical therapy with tacrolimus 0.1% ointment.

PO17-083

**A case of POEMS syndrome**

Kun-Li Zhou, Chao Ji, Zi-Ping Zhang, Bo Cheng

*The First Affiliated Hospital of Fujian Medical University*

A 45 years old male presented as "the lower extremities became dark with numbness and fatigue for more than 3 months". More than 3 months ago, the skin of both legs and feet gradually darkened. Showing symmetry, with weakness and numbness of both lower extremities. With the development of the disease, symptoms of skin and numbness gradually worsened, manifesting as progressive walking instability with soreness of the calf muscles. The examination revealed dark brown patches on both the lower leg and feet. Double upper limb muscle strength 5, lower limb proximal muscle strength 4, right lower limb distal strength 2-level, left lower limb distal strength 2. The tendon reflexes disappeared and pathological signs were not induced. Anti-nuclear antibody spectrum: weakly positive anti-Ro-52 antibody; elevated testosterone; immunoelectrophoresis analysis: albumin,  $\beta$ 2-globulin,  $\gamma$ -globulin were all elevated, and abnormal M protein peaks were also seen; Graphic: Neurogenic lesions around the upper and lower extremities (feelings and movements are involved, demyelination and axonal damage, lower limb weights); Abdominal ultrasound shows: splenomegaly. POEMS syndrome is a rare disease associated with polyneuropathy, organomegaly, endocrinopathy, monoclonal gammopathy and skin changes.

PO17-084

**UVB induced gene REDD1 may be involved in the regulation of skin photoaging**

Yu-Jie Ouyang, Jing Chen, Jian-Yun Lu, Shuang-Hai Hu, Shi-Yao Pei, Chu-Han Fu, Ling Jiang, Yu-Fang Ding, Qing-Hai Zeng, Jin-Hua Huang

*Third Xiangya Hospital, Central South University*

**Objective** To investigate the role of developmental and DNA damage response 1 (REDD1) in UVB-induced aging of

human skin fibroblasts and keratinocytes.

**Methods** 1. Human dermal fibroblasts and keratinocytes were selected and irradiated with different doses of UVB. Real-time fluorescent quantitative polymerase chain reaction (PCR) was used to detect the expression of REDD1 in both cells after UVB irradiation; 2. Knock-down and overexpression of REDD1 gene in fibroblasts and keratinocytes that have been irradiated by UVB. MTT assay was used to detect the cell proliferation activity;  $\beta$ -gal staining results were observed by inverted microscope.

**Results** After irradiation with UVB alone for 60 mJ/cm<sup>2</sup>, the cells began to show senescence and REDD1 gene expression was significantly up-regulated. After UVB irradiation, the activity of the cells in the REDD1 overexpression group was higher than that of the control group, and the percentage of aging cells decreased. On the contrary, the activity of the cells in the REDD1 knockdown group was lower than that in the control group, and the percentage of aging cells increased.

**Conclusions** The expression of REDD1 gene is up-regulated in human skin photoaging cells. The REDD1 gene may be involved in the regulation of skin photoaging.

PO17-085

### **A case of linear IgA bullous dermatosis in children**

Kun-Li Zhou, Ming-Kai Ji, Chao Ji, Zi-Ping Zhang

*The First Affiliated Hospital of Fujian Medical University*

A 6 years old child presented as "erythema, blister in whole body 2 months." More than 2 months ago, the appearance of several blisters on the forehead, soy size, sputum clear fluid, Examination: Forehead, perioral scattered in the erythema, tensing blisters wall, phlegm liquid clear, there some dry crust. Neck, trunk, limbs, generalized erythema of the vulva, on the basis of erythema, generalized soybeans to fava bean size blisters, tensing sacral wall, phlegm fluid clearing. Skin biopsy: keratinized hyperkeratosis with subepidermal bullous. There are some neutrophils, lymphoplasmacytic cells, and eosinophils was observed. Immunofluorescence staining showed linear IgA deposition of the basement membrane, consistent with the performance of linear IgA disease. Immunofluorescence: IgA (basal membrane linear +), IgG (-), IgM (-), C3 (-). Children's linear IgA bullous dermatosis is a rare autoimmune disease. Because of its young age, long-term follow-up should be taken during glucocorticoid administration.

PO17-086

### **A case of acanthosis nigricans with gastric malignant tumor**

Kun-Li Zhou, Chao Ji, Zi-Ping Zhang, Bo Cheng

*The First Affiliated Hospital of Fujian Medical University*

A 68 years old male presented as "the skin of face, neck, limbs became dark and thickened for 4 months." More than 4 months ago, Skin darkening on hands, scattered brown pimple, accompanied by pruritus, lesions and gradually spread to the feet, neck, armpits and face. With the development of the disease, the skin became darker, thicker, scattered with brown papules, some were sickle-like changes, the feeling slightly diminished, the hands became swollen, showing a calf-like appearance. Examination: Facial, neck becomes dark, thickening, scattered in brown papules, axillary was villous-like change; hands, feet became Blackening, thickening, swelling and showed a calf-like appearance. CT examination: Gastric wall thickening of the small curvature side, consider malignant tumors, there were multiple retroperitoneal lymph nodes in the liver and stomach space, spleen and stomach, consider it were transfer. Gastric mucosa pathological endoscopic biopsy examination and diagnosis: (stomach mucosa biopsy) mucosal adenocarcinoma. Histopathology of the skin: hyperkeratosis, papillomatous hyperplasia, pigmentary granules in the basal layer. Acanthosis nigricans is easy to be complicated by malignant tumors. The patients with such diseases should be systematically examined in clinical practice.

PO17-087

### **Two stage repair of skin defects in dermatologic surgery using micro-power vacuum dressing have some benefits compared with skin grating**

Xue Zhang, Dan Deng, Huai-Shan Qi, Zhi-Rong Yao

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**Objective** To investigate if using the micro-power vacuum dressing on skin defects after dermatologic surgery will

improve the outcomes compared to skin grafting.

**Methods** Chose skin defects on extremity after skin neoplasm excision. Randomly divided into two groups,  $n=10$  in each group. In experimental group we dressed defects with micro-power vacuum dressing until the defects is healed. And in control group we conduct skin grafting to heal the skin defect. Then we recorded the time of healing, all-in cost, the time in hospital, patient's satisfaction and the area ratio of scar and defect.

**Results** 1. The experimental group using  $50\pm 6.55$  days to heal the defect while the control group using  $28\pm 2.12$  days; 2. The experimental group has less economic cost which is  $2681\pm 103$  yuan and the skin grafting group using  $3678\pm 98$  yuan; 3. The group using micro-power vacuum dressing spent  $4.54\pm 1.3$  days in hospital and the control group spent  $10.3\pm 2.4$  days; 4. In experimental group the ultimate area ration of scar and defect is about  $25.6\pm 3.5\%$  smaller than control groups which is  $80.5\pm 7.9\%$ . 5. Patients in experimental group has a higher satisfaction at  $95.4\pm 3.5$  grade than  $84.7\pm 6.7$  grade in control group.

**Conclusions** Though two stage repair of skin defects in dermatologic surgery using micro-power vacuum dressing has a longer healing time, this method has a better scar appearance, shorter hospital time and less cost than skin grafting and avoid new wounds. In some conditions it can be a better choice to heal the skin defect.

PO17-088

### **Epidemiological and clinical characteristics of infantile hemangiomas (IHs) in China: An ambispective cohort study**

Xiai-Jian Yao, Tang-De Zhang

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**Objective** Infantile hemangiomas (IHs) are the most common benign vascular tumors of infants. Previous studies had shown that IHs tend to occur in female, on hand and neck, and was correlated with some risk factors. In China, the actual incidence and clinical characteristics of IHs are even unclear. This study aims to determine the incidence and clinical characteristics of IHs by a cohort study, for improving the awareness of IHs and providing more advice for pregnancy counseling.

**Methods** All the cases were collected in Community Health Service Center or the child healthcare Department. There are sentinel sites for this investigation and 1 to 2 investigators were assigned to distribute and fill out questionnaires in each sentinel site. All the participants were no more than 12 months old whose mother or father was the Han population in China. IBM SPSS 20.0 was used for comparison.

**Results** In 18 months, 7144 babies were collected (M-F 1.10: 1). In total study population, 2.51% ( $n=179$ ) had developed IHs and 62.01% are female. Fifty two of the IH (28.50%) are located on the head and neck, 72 (34.78%) on the trunk and 75(36.23%) on the extremities. Most (91.30%) are superficial type. None are in the airway and life-threatening.

**Conclusions** The incidence was found to be 2.51% in this study. It showed that IHs were more common to located on the trunk and extremities. This study suggests the occurrence of IHs are associated with female, premature birth and low birth weight.

PO17-089

### **Research progress of relationship between MicroRNA-146a and skin diseases**

Hong Yang

*Children's Hospital of Xinjiang Uygur Autonomous Region*

MicroRNA-146a is one of the hot spot related to the MicroRNAs research in recent years. As people's continuous study and understanding, the close relationship between microRNA-146a and the occurrence and development of skin diseases is found. Meanwhile, it has significant application value as a new biomarker. In this view, we focus on the recent progress in role of MicroRNA-146a in the skin diseases.

## Publish

### *PB01 Appendages' Diseases*

PB01-001

**One case of psoriasis vulgaris combined with secondary syphilis**

Nan Wu, Le-Le Cong, Xian-Ling Cong

*China-Japan Union Hospital of Jilin University*

PB01-002

**Clinical management of Chinese patients with alopecia areata**

Xing-Qi Zhang, Yan-Ting Yan, Jian Yang

*The First Affiliated Hospital of Sun Yat-sen University*

PB01-003

**Mucous eccrine nevi on the feet: 2 cases report**

Xin-Xin Li, Xiao-Yong Man

*Department of Dermatology, The Second Affiliated Hospital of Zhejiang University School of Medicine*

PB01-004

**Effects of skin care habits on the development of rosacea: a multi-center retrospective case-control survey in the Chinese population**

Ying-Xue Huang, Ji Li, Hong-Fu Xie

*Xiangya Hospital Central South University*

PB01-005

**Trichofolliculoma with linear distribution on the face: A case report**

Nan-lan Yu

*Chongqing Southwest Hospital*

PB01-006

**Clinical characteristics of adolescent severe acne patients in China**

Jue Qi, Li He

*First Affiliated Hospital of Kunming Medical University*

### *PB02 Bacterial and Viral Infection*

PB02-001

**Five cases of Leprosy from Shanghai: clinicopathological correlation**

Ye-Qiang liu

*Shanghai Skin Disease Hospital*

PB02-003

**A case of varicella-zoster induced myocarditis**

Kang Su Kim, Si Young Yang, Ji Eun Hahm, Jae Won Ha, Chul Woo Kim, Sang Seok Kim

*Department of Dermatology, Kangdong Sacred Heart Hospital, Hallym University College of Medicine, Seoul, Korea*

PB02-008

**Case of infective endocarditis caused by implanted artificial hair pyoderma**

Chisato Kamei, Aya Okabayashi, Sakurako Arai, Rie Tohda, Nami Shimizu, Koichi Nakagawa

PB02-002

**Relationship between Postherpetic Neuralgia (PHN) and the expression of serum miRNA**

Hai-Feng Xu, Xing-Hua Gao

*Department of Dermatology, No. 1 hospital of China Medical University*

PB02-004

**ALA-PDT restores expression of TAP and surface presentation of MHC class I antigen in HPV external anogenital infection**

Zhi-Li Hu, Kang Zeng

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PB02-005

**One case of death of hemorrhagic varicella**

Ling Li, Xiao-Wei Sha

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PB02-006

**A case of swimming pod granuloma**You-Lu Xu<sup>1</sup>, Yun-Qiang Zhang<sup>2</sup>, Fei Guo<sup>2</sup>, Hong-Xia Liu<sup>2</sup>

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PB02-007

**Human papillomavirus (HPV) 11E7 protein antagonises imiquimod-induced interferon- $\beta$  production and TLR7 expression in HaCaT cell**

Li Ma, Yin-Jing Song, Hao Cheng

*Sir Run Run Shaw Hospital, School of Medicine, Zhejiang University*

PB02-009

**Upper extremity skin ulcer caused by nocardia: A case report**

Yi-Bin Fan, Xiao-Hua Tao, Wei-Li Pan, You-Ming Huang, Yong Yu, Meng-Bi Gong

*Zhejiang Provincial People's Hospital*

PB02-010

**Varicella zoster encephalitis complicating herpes zoster on the right side of the waist and abdomen**

Jian-Xia Chen, Yan-Yan Feng

*People's Hospital of Xinjiang, Uygur Autonomous Region***PB03 Basic Research**

PB03-012

**Investigation on micro RNA expression profiles in HaCaT cells induced by UVB based on Gene Ontology**

Ling Yang

*Kunming General Hospital of PLA*

PB03-016

**A co-culture method for melanocytes and mesenchymal stem cells**

Li-Fei Zhu, Zhi-Kai Liao

*The Sixth Affiliated Hospital of Sun Yat-Sen University.*

PB03-001

**Polyribonucleosinic-polyribocytidylic acid facilitates interleukin-6, and interleukin-8 secretion in human dermal fibroblasts via JAK/STAT3, p38 MAPK signal transduction pathway**

Li Wang

*Department of Dermatology, The First Affiliated Hospital, Shantou University Medical College*

PB03-002

**MALAT1: A potential regulator of melanocyte function by sponging miRNAs**Qing-Hai Zeng<sup>1</sup>, Jing Chen<sup>1</sup>, Jin-Hua Huang<sup>1</sup>, Jian-Yun Lu<sup>1</sup>, Shi-Yao Pei<sup>1</sup>, Li-Hua Huang<sup>4</sup>, Hong Xiang<sup>4</sup>,Jian-Kang Xiao<sup>1,5</sup>, Li Lei<sup>2,3</sup>

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PB03-003

**Pathogenic epitopes of keratin 17 in the pathogenesis of psoriasis**

Yi-Xin Luo, Er-Le Dang, Xiao-Cui Bai, Gang Wang

*Department of Dermatology, Xijing Hospital, Fourth Military Medical University*

PB03-004

**Serum level of miR-491-5p and miR-342-5p in association with Henoch-Schonlein purpura**

Yang Yang, Rui-Qun Qi, Xing-Hua Gao

*Department of Dermatology, No. 1 Hospital of China Medical University and Key Laboratory of Immunodermatology, Ministry of Health and Ministry of Education*

PB03-005

**Expression level, role and its mechanism of MicroRNA-205-5p in squamous cell carcinoma SCC12 cells**

Xiao-Yu Zhou, Ming-Yang Gao

*First Affiliated Hospital of Dalian Medical University*

PB03-006

**Decreased SUMOylation of the retinoblastoma protein in keratinocytes in the pathogenesis of vitiligo**

Miao-Ni Zhou, Fu-Quan Lin, Wen Xu Jin, Ai-E Xu

*Third People's Hospital of Hangzhou*

PB03-007

**Role of microRNA-148a in pathogenesis of immune-associated diseases**

Jing-Xin Zeng, Xi-Bao Zhang, Quan Luo

*Guangzhou Institute of Dermatology*

PB03-008

**Activation of p-JAK/STAT pathway leads to CXCL9/10 secretion to promote CD8+ T cells in active halo nevus lesional skin**

Wen-Ting Hu, Fu-Quan Lin, Ai-E Xu

*Third People's Hospital of Hangzhou*

PB03-009

**Effects of UVB on the expression of fibronectin and EDA/EDB in human dermal fibroblasts**

Cheng-Long Jin, Wen-Yan Jin, Zhe-Hu Jin

*Yanbian University Hospital*

PB03-010

**Role of nano-WS2 in treatment of keloids**Xiao-Jiao Zhao<sup>1</sup>, Yan-Yan Xu<sup>2</sup>, Jin-Hua Huang<sup>1</sup>, Shi-Yao Pei<sup>1</sup>, Ling Jiang<sup>1</sup>, Qing-Hai Zeng<sup>1</sup>, Song Liu<sup>2</sup>, Jing Chen<sup>1</sup>*1. Department of Dermatology, The Third Xiangya Hospital of Central South University**2. Biology, Hunan University*

PB03-011

**Bradykinin B2 receptor pathway participates in psoriasiform plaque formation in mice**Hai-Bo Liu<sup>1</sup>, Min Zhang<sup>2</sup>, Fang Liu<sup>1</sup>, Xiao-Ping Dong<sup>1</sup>, Hong Sang<sup>1</sup>*1. Department of Dermatology, Jinling Hospital**2. Department of Dermatology, the Affiliated Jiangning Hospital of Nanjing Medical University*

PB03-013

**Effects of IL-33 on HaCaT cells and psoriasis-like models in mouse**Ya-Ju Duan<sup>1</sup>, Xiang-Feng Song<sup>2</sup>, Tao Yuan<sup>1</sup>, Wen-Jing Ren<sup>1</sup>, Sha-Sha Zhang<sup>1</sup>, Hua Hu<sup>1</sup>, Zhong-Wei Tian<sup>1</sup>*1. The First Affiliated Hospital of Xinxiang Medical University**2. Department of Immunology in Xinxiang Medical University*

PB03-014

**Effects of tacrolimus related chemokines CXCL9, CXCL10 in HaCaT cells simulated by IFN- $\gamma$** 

Sai-Lin Yang, Wen Xu, Fu-Quan Lin, Miao-Ni Zhou, Ai-E Xu

*Department of Dermatology, Hangzhou Third Hospital*

PB03-015

**SHARPIN regulates cell proliferation in basal cell carcinoma by activation of the GLI2 transcriptional factor and phosphorylation of c-Jun signaling pathway**

Yao Yang, Jia-Man Wang, Yan-Hua Liang

*Department of Dermatology, Shenzhen Hospital, Southern Medical University*

**PB04 Benign and Malignant Tumors**

PB04-001

**Spontaneously regressive angiolymphoid hyperplasia with eosinophilia: A case report with evidence of dendritic cells proliferation**

Man Li, Juan Du, Li-Juan Wang, Yan-Kun Zhang, Xiao-Lan Ding  
*Department of Dermatology, Peking University People's Hospital*

PB04-006

**Kimura disease with chronic eczema: A case report**

Kun Guo, Song-Mei geng, Jing-Yun Chen  
*Second Affiliated Hospital of Xi'an Jiaotong University*

PB04-002

**A retrospective study and analysis of clinical characteristics of non-melanoma skin cancer**

Zi-Yu Chai, Xue-Zhu Xu  
*The Second Hospital Affiliated of Dalian Medical University*

PB04-003

**One case report of Human papillomavirus 16-induced bowenoid papulosis among the right digits**

Li-Ping Zhao, Yuan-Cheng Zhang, Shu-Liang Li, Liang-Ming Wang, Shi-Fa Zhang  
*General Hospital of Shenyang Military Command*

PB04-004

**PKM2 is a novel targeting molecule for melanoma treatment**

Cong peng, You-You Zhou, Xiang Chen  
*Department of Dermatology, Xiangya Hospital, Central South University*

PB04-005

**Characteristics of 356 Skin malignant solid tumor and 162 precancerous skin lesions**

Zi-Lian Liu, Chuan Ma  
*Peking University Third Hospital*

PB04-007

**Comprehensive therapy of basal cell carcinoma in the nasal wing: A case report**

Yi-Bin Fan, Xiao-Hua Tao, Wei-Li Pan, You-Ming Huang, Yong Yu, Meng-Bi Gong  
*Zhejiang Provincial People's Hospital*

PB04-008

**Aberrant expression and high-frequency mutations of SHARPIN in nonmelanoma skin cancers**

Yan-Hua liang, Yan Zheng, Yao Yang, Jia-Man Wang  
*Department of Dermatology, Shenzhen Hospital, Southern Medical University*

PB04-009

**Study of the expression and function of SHARPIN in melanoma**

Yan-Hua Liang, Si-Tong Zhou  
*Department of Dermatology, Shenzhen Hospital, Southern Medical University*

PB04-010

**A challenging case of primary cutaneous Hodgkin's lymphoma**

Ru-Jun Xue<sup>1,2</sup>, Xin Tian<sup>1,2</sup>, Xi-Bao Zhang<sup>1,2</sup>  
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2. *Institute of Dermatology, Guangzhou Medical University*

**PB05 Bullous Diseases**

PB05-003

**A review of 11 patients with pemphigus herpetiformis**

Guan-Ru Wu, Sheng-Ru Zhou, Meng Pan  
*Rui Jin Hospital Shanghai*

PB05-004

**A case of linear IgA bullous dermatosis during gestation**Jing Wang<sup>1</sup>, Xiao-Yue Wang<sup>2</sup>, Peng-Fei Song<sup>1</sup>1. *The Eighth Affiliated Hospital Sun Yat-sen University*2. *The College of Biological Science, University of California, Davis*

PB05-005

**Recessive dystrophic epidermolysis bullosa (RDEB) patient with COL7A1 gene mutation**

Soo Jung Kim, Jeung Hoon Lee, Mi Ra Choi, Chang Deok Kim

*Chungnam National University Hospital*

PB05-006

**Serum thymus and activation-regulated chemokine (TARC/CCL17) is a useful marker to predict the disease activity in patients with bullous pemphigoid**Mao Suzuki<sup>1,2</sup>, Yukie Yamaguchi<sup>2</sup>, Miwa Kanaoka<sup>2</sup>, Kazuko Nakamura<sup>1</sup>, Setsuko Matsukura<sup>3</sup>, Kazuo Takahashi<sup>4</sup>, Michiko Aihara<sup>2</sup>, Takeshi Kambara<sup>1</sup>1. *Yokohama City University Medical Center*2. *Department of Environmental Immuno-Dermatology, Yokohama City University Graduate School of Medicine*3. *Saiseikai Yokohama City Nanbu Hospital*4. *International University of Health and Welfare Atami Hospital*

PB05-001

**BCR repertoire of B cells in pemphigus lesions**

Sheng-Ru Zhou, Meng Pan

*Rui Jin Hospital, Shanghai Jiao Tong University School of Medicine*

PB05-002

**Refractory bullous pemphigoid treated with mycophenolate mofetil and leaving Beau lines and milia during recovery**

Han Ma, Zhi-Rui Chen, Mei-Rong Li, Chun Lu, Wei Lai

*Department of Dermatology, the Third Affiliated Hospital, Sun Yat-sen University***PB06 Collagen Diseases and Vasculitis**

PB06-002

**A case of verrucous hyperplasia of amputation stump**

Si Young Yang, Kang Su Kim, Ji Eun Hahm, Jae Won Ha, Chul Woo Kim, Sang Seok Kim

*Department of Dermatology, Kangdong Sacred Heart Hospital, Hallym University College of Medicine, Seoul*

PB06-003

**Calcitriol-induced Calcinosis cutis**

Kang Su Kim, Si Young Yang, Ji Eun Hahm, Jae Won Ha, Chul Woo Kim, Sang Seok Kim

*Department of Dermatology, Kangdong Sacred Heart Hospital, Hallym University College of Medicine, Seoul*

PB06-001

**Discoid lupus erythematosus at the site of a healed scald of edible oil: an illustration of isotopic response**Yong-Zhi Ji<sup>1</sup>, Fang-Li Wei<sup>2</sup>, Long Geng<sup>3</sup>, Song Zheng<sup>3</sup>, Hong-Duo Chen<sup>3</sup>1. *Second Hospital of Jilin University*2. *Affiliated Hospital of Tai'an Medical College*3. *No. 1 Hospital of China Medical University*

PB06-004

**Study correlation between the expression of CCR6-CCL20 axis in the serous membrane effusion and the internal organs of lupus mouse and the lupus-like symptoms**

Si-Jian Wen, Li-Dan Zhang, You-Kun Lin

*The First Affiliated Hospital of Guangxi Medical University*

*PB07 Cosmetic Dermatology*

PB07-001

**A decade retrospective study of light/laser devices in treating rosacea**

Yan Wu, Yan-Ping Zhang, Yuan-Yuan Xu, Tian-Hua Xu, Yuan-Hong Li, Xing-Hua Gao

*Department of dermatology, No. 1 hospital of China Medical University*

PB07-002

**Medical mechanism and clinical application of low level laser therapy**

Qiong Wang, Wei-Hui Zeng, Jian-Wen Ren, Song-Mei Geng

*Department of Dermatology, the Second Affiliated Hospital of Medical College of Xi'an Jiaotong University*

PB07-003

**Pathogenesis analysis of rosacea and other facial dermatitis in clinical practice**

Na Ni, Yang Xu, Bing-Rong Zhou, Juan Liu, Dan Luo

*First Affiliated Hospital of Nanjing Medical University*

PB07-004

**A prospective study of the safety and efficacy of a microneedle fractional radiofrequency system for global facial photoaging in Chinese**

Qiu-Ju Wu, Meng-Li Zhang, Tong Lin, Jing Fang

*Department of Cosmetic Laser Surgery, Hospital of Dermatology, Chinese Academy of Medical Sciences, Peking Union Medical College*

PB07-005

**Recurrence of nevus of ota after Q-switched laser treatment: case report and literature review**

Jing Yang

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PB07-006

**Effectiveness and tolerability of a facial serum containing Vitamin C/E and ferulic acid on photo-aging**Xin Zheng<sup>1</sup>, Yan Wu<sup>2</sup>, Zhi-Qi Song<sup>1</sup>, Yuan-Hong Li<sup>2</sup>, Xing-Hua Gao<sup>2</sup>, Hong-Duo Chen<sup>2</sup>*1. Department of Dermatology 1st Affiliated Hospital of Dalian Medical University**2. Department of Dermatology, No. 1 Hospital of China Medical University*

PB07-007

**A cases of large area symmetry Ito nevus**

Xian-Qi zhang

*Second Affiliated Hospital Zhejiang University School of Medicine**PB08 Dermatitis and Skin Allergy*

PB08-001

**Comparisons of positive and negative autologous serum skin test responses as related to clinical features of chronic urticaria in Asian patients: A systematic review and meta-analysis**

Xue-Li Niu, Mei-Hui Shi, Xing-Hua Gao, Hong-Duo Chen, Rui-Qun Qi

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PB08-002

**Research progress of Staphylococcus epidermidis**

Yining Wang

*No. 1 Hospital of China Medical University*

PB08-003

**Drug rash with eosinophilia and systemic symptoms associated fulminant myocarditis**

Zhenzhen Ye, Pei-Qiu Zhu, Xue-Yan Lu, Zhi-Qiang Xie, Chun-Lei Zhang

*Department of Dermatology, Peking University Third Hospital*

PB08-004

**MicroRNA-152 in the regulation of KLF5 in B cells and in the pathogenesis of systemic lupus erythematosus**

Shuangyan Luo, Qianjin Lu

*Second Xiangya Hospital of Central South University*

PB08-005

**Drug reaction with eosinophilia and systemic symptoms: Clinical features of 16 patients**

Yanjiao Ju, Zhi-Qiang Xie

*The Third Hospital of Beijing University*

PB08-006

**Down-regulated SHARPIN may accelerate the development of atopic dermatitis through activating Interleukin-33/ST2 signaling**

Lingjie Tang, Jia-Man Wang, Yan-Hua Liang

*Shenzhen Hospital, Southern Medical University**PB09 Fungal Infection*

PB09-001

**Effects of *Candida albicans*  $\beta$ -(1, 3)-glucan on cell cycle, apoptosis, and inflammatory response in DC2. 4 cell line and related signaling pathways**

Yu-jing Zhang, Rui-qun Qi, Xing-hua Gao

*Department of Dermatology, No. 1 Hospital of China Medical University*

PB09-002

**HSP90 C-terminal domain function study of *Candida albicans***

Gong Yuan, Jing-Shun Meng, Yu-Lian Wang, Jing Zhao, Jian-Hua Wu

*Department of Dermatology, Shanghai Changhai Hospital, Naval Military Medical University*

PB09-003

**Report of 2 cases of deep cutaneous candidiasis and literature review**

Yi Hu, Yan-Hong Sun, Jing-Si Zeng

*Affiliated Hospital of Huazhong University of Science and Technology*

PB09-004

**Ste20 is crucial for dimorphic switching of *Sporothrix schenckii***

Bin-Bin Hou

*The Second Hospital of Dalian Medical University*

PB09-005

**Herpes zoster-like lesions in a patient with sporotrichosis**Fuqiu Li<sup>1</sup>, Sha Lv<sup>1</sup>, Lin Qi<sup>1</sup>, Han-Fei Wu<sup>2</sup>1. *The Second Hospital of Jilin University*2. *The first clinical hospital of Academy of Science of TCM in Jilin Province*

PB09-006

**Clinical analysis of 180 cases of children sporotrichosis**Sha Lv<sup>1</sup>, Fu-Qiu Li<sup>1</sup>, Han-Fei Wu<sup>2</sup>1. *The Second Hospital of Jilin University*2. *The first clinical hospital of Academy of Science of TCM in Jilin Province*

PB09-007

**Population structure and genetic diversity of *Sporothrix globosa* in China according to 10 novel microsatellite loci**Mingrui Zhang<sup>1</sup>, Fu-Qiu Li<sup>1</sup>, Jie Gong<sup>2</sup>1. *Department of Dermatology, The Second Hospital of Jilin University*2. *State Key Laboratory of Infectious Disease Prevention and Control, Collaborative Innovation Center for Diagnosis and Treatment of Infectious Diseases, National Institute for Communicable Disease Control and Prevention, Chinese Center for Disease Control and Prevention*

PB09-008

**A case of chronic mucocutaneous candidiasis with azole resistance**

Fuqiu Li, Ming-Rui Zhang, Yang Li

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PB09-009

**A case report: repeatedly misdiagnosed HIV/AIDS combined with *Talaromyces Marneffei***

Yuye Li

*The First Affiliated Hospital of Kunming Medical University***PB10 Genetic Disorders**

PB10-001

**Premature aging syndrome, Penttinen type: Report of a Chinese case**Xue-Gang Xu<sup>1</sup>, Yan-Yan Wang<sup>2</sup>, Zhi-Yong Zhang<sup>3</sup>, Hong-Duo Chen<sup>1</sup>1. *Department of Dermatology, No. 1 Hospital of China Medical University*2. *Department of Ophthalmology, Affiliated Hospital of Inner Mongolia Medical University*3. *Department of Nuclear Medicine, Affiliated Hospital of Inner Mongolia Medical University*

PB10-002

**Detection of ADAR1 gene mutation in a Chinese Han family with dyschromatosis symmetrica hereditaria**

Jie Gao, Hong-Zhou Cui, Wang, Shu-Ping Guo

*Department of Dermatology, First Hospital of Shanxi Medical University*

PB10-003

**Ten cases of Darier's disease in one family**

Shi Gong

*Hainan Provincial Hospital of Skin Disease*

PB10-004

**Microbiological characteristics and identification of prototheca**

Jin Yang

*Huashan Hospital of Fudan University*

PB10-005

**Neurofibromatosis type 1 associated with vitiligo: case report**

Lixia Cui, Ge Peng, Zhen-Zhen Mu, Xiu-Ping Han

*Shengjing Hospital of China Medical University*

PB10-006

**Diffuse palmoplantar keratoderma with pseudoainhum**

Yuanyuan Xu, Guang Yin, Ding, Cheng-Xin Li, Hua Zhao

*Department of Dermatology, General Hospital of People's Liberation Army*

PB10-007

**A novel mutation in MBTPS2 causes ichthyosis follicularis, alopecia and photophobia (IFAP) syndrome**

Yanyun Jiang, Qiannan Jia, Kai Fang, Hong-Zhong Jin, Yue-Ping Zeng

*Department of Dermatology, Peking Union Medical College Hospital***PB11 Metabolic and Endocrine Disorders**

PB11-001

**A case of nodular primary cutaneous amyloidosis**

Wei Gao, Hongsheng Wang

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PB11-002

**A Case of Excessive Dog Liver Intake-induced Vitamin A Intoxication**Qian Sun<sup>1</sup>, Nan Wu<sup>1</sup>, Cong Peng<sup>2</sup>, Xian-Ling Cong<sup>1</sup>1. *China-Japan Union Hospital of Jilin University*2. *Children's Hospital of Dalian*

### *PB13 Pigmentary Disorders*

PB13-001

#### **A rare coexistence of cavernous hemangioma with Beckers nevus: Case report**

Lei-Wei Jiang<sup>1,2</sup>, Hong-Guang Lu<sup>2</sup>, Bin Lu<sup>2</sup>, Wei Zhang<sup>2</sup>, Pei-Hong Lv<sup>2</sup>, Zhi Liu<sup>2</sup>

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2. *Affiliated Hospital of Guiyang Medical College*

PB13-002

#### **SENP1 regulates TH1 chemokines via IFN- $\gamma$ -STAT1 signaling in keratinocytes through STAT3-deSUMOylation**

Fuquan Lin, Ai-E Xu

*Hangzhou Third People's Hospital*

PB13-003

#### **A search of vitiligo patients in the northeast of China using a questionnaire**

Yan Wu, Zheng Lin, Xing-Hua Gao

*The First Hospital of China Medical University*

PB13-004

#### **Clinical observation on the treatment of 90 cases of vitiligo with Qubai® double copper ion antibacterial gel**

Jialin Yang, Ya-Qin Zhang, Hong-Bo Jiang

*The Second Hospital of Jilin University*

PB13-005

#### **Study of Qubai® double copper ion antibacterial gel on tyrosinase activity**

Jia-Lin Yang, Ya-Qin Zhang, Hong-Bo Jiang, Ce Lin

*Second Hospital of Jilin University*

PB13-006

#### **Correlation between Nefatin-1 in the cortical signaling pathway and cellular immune function in patients with vitiligo**

Yuan Guo, Yu-Mei Li

*Department of Dermatology, Jiangsu University Hospital*

PB13-007

#### **A case of phacomatosis pigmentovascularis type IIb associated with Cayler cardiofacial syndrome**

Ximeng Zhang, Ge Peng, Li-Xia Cui, Peng-Yue Liu, Xiu-Ping Han

*Shengjing Hospital of China Medical University*

### *PB14 Psoriasis*

PB14-001

#### **A study for the bacterial resistance of imiquimod treated mice**

Hang Shi

*1st Hospital of Dalian Medical University*

PB14-002

#### **Long noncoding RNA expression profile and function analysis in psoriasis**

Jianjun Yan, Qing Sun

*Qilu Hospital of Shandong University*

PB14-003

#### **Sensitivity reaction in the Infliximab treatment for psoriasis: two cases**

Yuan Zhou, Xiao-Yong Man

*Dermatology Department, Second Affiliated Hospital, School of Medicine, Zhejiang University*

PB14-004

#### **Efficacy and safety of biologics targeting IL-17 and IL-23 in the treatment of moderate-to-severe plaque psoriasis: a meta-analysis of randomized controlled trials**

Lian Cui<sup>1,2</sup>, Rong-Fen Chen<sup>1,2</sup>, Qian Yu<sup>1</sup>, Yu Gong<sup>1</sup>, Ze-Chen<sup>1,2</sup>, Yu-Ling Shi<sup>1,2</sup>

1. *Department of Dermatology, Shanghai Tenth People's Hospital, Shanghai, China*

2. *Tongji University School of Medicine, Shanghai, China*

PB14-007

**Presentation of publications in psoriasis of the recent ten years: a bibliometric analysis**Lian Cui<sup>1,2</sup>, Heng-Li Lu<sup>1,2</sup>, Yu-Ling Shi<sup>1,2</sup>

1. Department of Dermatology, Shanghai Tenth People's Hospital, Shanghai, China

2. Tongji University School of Medicine, Shanghai, China

PB14-008

**Endoplasmic reticulum stress response and inflammation in keratinocytes contributes to the psoriasis vulgaris**

Guilan Yang, Min Zhao

Shenzhen Hospital, Southern Medical University

PB14-009

**Association study of the polymorphisms of REL, TNIP1 gene and negative emotion with psoriasis**

Qiang Zhang

Nanfang Hospital

PB14-010

**Genomic and expression changes of SHARPIN in psoriasis**

Yanhua Liang, Hai-Lan Fan

Department of Dermatology, Shenzhen Hospital, Southern Medical University

PB14-011

**Effect of IL-22 on the proliferation and differentiation of keratinocytes via regulating C/EBP $\alpha$** 

Hua Zhong

Qi Lu Hospital, Shandong University

*PB15 Sexually Transmitted Diseases*

PB15-001

**A case of neurosyphilis**

Min Zhang

Department of Dermatology, The First Affiliated Hospital of Army Medical University

PB15-002

**HPVE7 up-regulates CTLA-4 expression by epidermal regulatory to promote immune escape**

Yinjing Song, Qiang Zhou, Hao Cheng

Sir Runrun Shaw Hospital, Medical School of Zhejiang University

PB15-003

**HPV6b/11E7 promotes virus escape by regulating arachidonic acid metabolism**

Yinjing Song, Hao Cheng

Sir Runrun Shaw Hospital, Medical School of Zhejiang University

PB15-004

**Value of the quantitative test for Treponemal pallidum particle agglutination in the diagnosis of neurosyphilis**

Chao Bi

Guangzhou Institute of Dermatology

PB15-005

**Construction and identification of active Chlamydia Trachomatis bacteriophage and its effect on Chlamydia Trachomatis**

Ting-ting Lian

Tianjin Medical University General Hospital

PB15-006

**Improve the ability of capsid protein Vp1 of chlamydia phage  $\phi$ CPG1 adhere to its host by change the hydrophilicity of IN5 loop**

Quan Zhou, Lei Zheng, Yuan-Jun Liu, Quan-Zhong Liu

Tianjin Medical University General Hospital

PB15-007

**Annular secondary syphilis on penis**

Cai-Chou Zhao, Zheng Zhang, ling-Xi Liu, Bo Feng, Xing-Hua Gao, Jiu-Hong Li  
*No.1 Hospital of China Medical University*

PB15-008

**Vp1 is a potential therapeutic agent for *Chlamydia trachomatis* infection**

Jie Ren, Quan-Zhong Liu  
*Tianjin Medical University General Hospital*

PB15-009

**A study on the association between health risk behaviors and future drug use, drug trafficking and HIV infection among middle school students**

Renli Wang<sup>1</sup>, Shi-Ze Zhang<sup>1</sup>, Zhen Jiang<sup>2</sup>, Ling-Ling Dong<sup>1</sup>, Bing Gui<sup>1</sup>, Hong Yang<sup>1</sup>, Jian-Zhong Zhang<sup>3</sup>  
 1. *The first hospital of LiangShan Yi Autoprefecture*  
 2. *China Center for disease control and prevention of STD*  
 3. *Peking University People's Hospital*

PB15-010

**Evaluation of serum specific anti *Treponema pallidum*-IgM and risk factors of neurosyphilis in serofast syphilis patients**

Mei Shi  
*Shanghai Skin Disease Hospital*

PB15-011

**An unusual combination: Malignant syphilis associated with neurosyphilis in HIV-negative patients**

Lin Zhu, Mei Shi, Rui-Rui Peng, Xin Gu, Zhifang Guan, Pingyu Zhou  
*Department of Sexually Transmitted Disease Institute, Shanghai Skin Disease Hospital, Shanghai 200050, China*

**PB16 Therapies**

PB16-001

**Kimura disease has an excellent response to oral corticosteroid and methotrexate**

Han Ma, Zhi-rui Chen, Mei-Rong Li, Chun Lu, Wei Lai  
*Department of Dermatology, the Third Affiliated Hospital, Sun Yat-sen University*

PB16-003

**Clinical observation on the treatment of cholinergic urticaria with Qingxin Anzhen Decoction**

Yingying Ma  
*Heilongjiang University of Chinese Medicine*

PB16-007

**Efficacy and safety of phototherapy in early-stage mycosis fungoides: a single-center retrospective study**

Da-Wei Han, Shi-Yu Zhang, Tao Wang, Jie Liu, Yue-Hua Liu  
*Department of Dermatology, Peking Union Medical College Hospital, Chinese Academy of Medical Sciences*

PB16-008

**Topical ozone therapies improve atopic dermatitis via rapidly reducing *S. aureus* colonization and immunoregulation**

Jian-Yun Lu<sup>1</sup>, Ming Li<sup>2</sup>, Li-Hua Gao<sup>1</sup>, Miao-Miao Li<sup>1</sup>, Ya-Ping Xiang<sup>1</sup>, Jin-Hua Huang<sup>1</sup>  
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 2. *Xiangya medical school of Central South University*

PB16-010

**Clinical effect of chronic eczema treated by Lingnan fire-needle evaluated with symptom and life-quality score**

Shiyu Lin<sup>1</sup>, Xi Li<sup>2</sup>, Yong-Chao Zhang<sup>3</sup>, Jiang Li<sup>4</sup>, Ji-Chao Xu<sup>4</sup>  
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 2. *Panyu District Hospital of TCM*  
 3. *Tianhe District Hospital of TCM*  
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PB16-011

**Effect of the single advancement flap on repairing the medial cheek defects after resection of malignant tumor and precancerous lesions**Ganggang Li<sup>1,3</sup>, Mei-Feng Xu<sup>1</sup>, Xuan-Feng Tan<sup>1</sup>, De-Wu Zhang<sup>1</sup>, Na Gao<sup>1</sup>, Zi Wang<sup>1</sup>, Hui-Qun Ma<sup>1,2</sup>

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3. People's Hospital of Tongchuan

PB16-013

**Sturge-weber combined Klippel-Trenaunay Syndrome: A case report**Ri-Ga Wu<sup>1</sup>, Li Li<sup>2</sup>, Lin Ma<sup>2</sup>

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PB16-014

**Clinical characteristics and risk factors for methotrexate toxicity: A case report**

Liuyu Chen

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PB16-002

**Experience in the treatment of moderate to severe acne by TCM**

Xin-Yan Huang

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PB16-004

**Efficacy of off-label use of topical calcineurin inhibitors in Dermatology**

Bilal Abdul-fattah

Huazhong University of Science and Technology

PB16-006

**A case of fulminant purpura which was saved**

Kun Guo, Songmei Geng, Xiaopeng Wang

Second Affiliated Hospital of Xi'an Jiaotong University

PB16-009

**A case of scrofuloderma cured by topical 5-aminolevulinic acid photodynamic therapy**

Guilan Yang, Min Zhao, Fanjun Song, Bin Xiao, Hongyan Tang

Shenzhen Hospital, Southern Medical University

PB16-012

**High- throughput sequencing analysis of gut microbiome in patients treated with long term of minocycline**

Yuehua Men, Huimin Yan, Wei Jiang

Peking University Third Hospital

**PB17 Miscellaneous**

PB17-001

**Hypertrophic lichen planus with unique dermoscopic features: twisted glomerular vessels**

Yixin Luo, Jie Liu, Cheng Chi

Department of Dermatology, Peking Union Medical College Hospital, Beijing, China

PB17-002

**Research progress of temperature sensory proteins**

Shengnan Zhao, Xing-Hua Gao, Hong-duo Chen

No. 1 Hospital of China Medical University

PB17-003

**Safe and effective UV protection of microencapsulated sunscreen nanoparticles based on zeolitic imidazole frameworks**

Dan Luo, Li-Xian Xu, Bing-Rong Zhou, Di Wu, Yang Xu

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PB17-004

**Emerging epigenetic role of CD8+T cells in autoimmune diseases**

Qian-Cheng Deng, Rong Xiao

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PB17-005

**Computer-aided analysis with Image J for comparing different dermatoscopic patterns of dermatofibroma in Han Chinese population**

Juliandri, Xiao-Yan Wang, Zi-jing Liu, Yang Xu

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PB17-006

**Successful treatment of vulva recurrent papular acantholytic dyskeratosis using acitretin and laser therapy**

Yaping Tian

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PB17-007

**Norwegian scabies patients in China: A neglected population in urgent attention**

Jiu Yi, Wei Fang, Ya-Li Yang, Wei-Hua Pan, Wan-Qing Liao

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PB17-008

**A case of bullous dermatomyositis with postoperative recurrence of Schwannomas**Xueqing Zhu<sup>1</sup>, Ke Xue<sup>1</sup>, Xiao-Qing Zhao<sup>1</sup>, Liu-Guan Bian<sup>2</sup>, Jie Zheng<sup>1</sup>, Hua Cao<sup>1</sup>, Hao Li<sup>3</sup>1. *Department of Dermatology, Rui Jin Hospital, School of Medicine, Shanghai Jiao Tong University*2. *Department of Neurosurgery, Rui Jin Hospital, School of Medicine, Shanghai Jiao Tong University*3. *Department of Oncology, Rui Jin Hospital, School of Medicine, Shanghai Jiao Tong University*

PB17-009

**Research progress in the relationship between IL- 17 and various autoimmune diseases**

Yi-Feng Du

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PB17-010

**Clinical value of the neutrophil-to-lymphocyte ratio in the diagnosis of adult-onset Still's disease**

Mengqi Guan, Shan-Shan Li

*First Hospital of Jilin University*

PB17-012

**Concomitant systemic lupus erythematosus and primary biliary cirrhosis: one case report**

Mei-Ping Huang

*The First People's Hospital of Kunming*

PB17-013

**Chinese medicated bath therapy for psoriasis**Jian Gong<sup>1,2</sup>, Qiao Liu<sup>1</sup>, Feng-Ming Hu<sup>3</sup>1. *The Second Affiliated Hospital of Jiangxi University of Traditional Chinese Medicine*2. *Jiangxi University of Traditional Chinese Medicine*3. *Dermatology Hospital of Jiangxi Province*

PB17-014

**Micro-power vacuum dressing can promote granulation bed preparation before skin grafting**

Xue Zhang, Dan Deng, Huai-Shan Qi, Zhi-Rong Yao

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PB17-015

**Case report of multicentric reticulohistiocytosis and literature review**

Shengming Qu, Bo-Ping Li, Yi Wu

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PB17-016

**Case report of hypereosinophilic syndrome and literature review**

Shengming Qu, Ju-Hua Jin

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# **Chinese Medical Journal**

Volume 131 June 15, 2018 Supplement 2

## **Special Lecture**

SL-1	1
<b>IL-17 family cytokines in skin inflammation</b>	
Chen Dong	
SL-2	1
<b>Scaffolds for brain development, maintenance and repair</b>	
Kazunobu Sawamoto	
SL-3	1
<b>Can artificial intelligence provoke the revolutionary change in the medical field?</b>	
Uhn Lee	
SL-4	2
<b>Potential of adipose-derived stem cells for the treatment of recessive dystrophic epidermolysis bullosa</b>	
Shigaku Ikeda	
SL-5	2
<b>Skin-brain connection</b>	
Jin Ho Chung	
SL-6	3
<b>Prokineticin 2 plays a pivotal role in psoriasis</b>	
Lai Ren	

## **Concurrent Session**

### *CS01 Appendages' Diseases*

CS01-1	4
<b>Update on the pathophysiology and clinical aspects of rosacea with a focus on Korean patients</b>	
Soyun Cho	
CS01-2	4
<b>Expression and pathogenesis of DDB2 and SELL in severe acne</b>	
Mai Endo, Wen-Juan Wu	
CS01-3	5
<b>Clinical analysis of trichilemmal cyst in our department over the past 10 years</b>	
Mai Endo, Toshiyuki Yamamoto	
CS01-4	5
<b>Allogeneic hair transplantation: the current experiments in animal models and future clinical implication</b>	
Ohsang Kwon	
CS01-5	5
<b>What new in nail and nail disorders?</b>	
Dong-Youn Lee	
CS01-6	6
<b>Gut microbiota alterations in moderate to severe acne vulgaris patients</b>	
Hui-Min Yan, Hui-Juan Zhao, Du-Yi Guo, Pei-Qiu Zhu, Chun-Lei Zhang, Wei Jiang	

CS01-7	6
<b>Frequent intake of soft drinks is associated with moderate to severe acne in adolescents: the College Student Skin Health Survey</b>	
Xiao-Yan Huang, Jiang-Lin Zhang, Jie Li, Shuang Zhao, Yi Xiao, Yu-Zhou Huang, Dan-Rong Jing, Li-Ping Chen, Xing-Yu Zhang, Xiang Chen, Min-Xue Shen	
CS01-8	7
<b>Identity-by-descent analysis reveals F13A1 as a novel susceptibility gene for severe acne in Chinese Han cohort</b>	
Wen-Juan Wu, Xing-Yan Yang, Li He	
CS01-9	7
<b>Sequential cyclic change of hair roots in the mechanism of diffuse alopecia areata revealed by dermoscopy</b>	
Xing-Qi Zhang, Yan-Ting Ye, Yu-Qing Yang, Hui Cao, Zhao-Hui Zhu, Kevin McElwee, Yun-Xia Lin	
CS01-10	8
<b>Follicular occlusion tetrad: a rare case report</b>	
Rui-Xue Xu, Jiu-Hong Li, Tian-Hua Xu, Qian An	
<i>CS02 Bacterial and Viral Infection</i>	
CS02-1	8
<b>Novel strategies for the prevention of HIV transmission</b>	
Tatsuyoshi Kawamura	
CS02-2	8
<b>Clinical analysis for 401 cases of herpes zoster patients in hospital</b>	
Hui-Lan Yang	
CS02-3	9
<b>Induction of plasmablasts by follicular helper T cell-CXCL13 axis upon occurrence of herpes zoster</b>	
Kensuke Fukuchi, Takatoshi Shimauchi, Kazuki Tatsuno, Yoshiki Tokura	
CS02-4	9
<b>A clinical observation of 32 cases of leg erysipelas treated with Chinese medicine wet-dressing and ozone spa</b>	
Mei-Rong Bai	
CS02-5	9
<b>Epidemiology and clinical profile of cutaneous warts in Chinese college students: a cross-sectional and follow-up study</b>	
Jian-Jun Liu	
CS02-6	10
<b>Vacuum sealing drainage as an auxiliary therapy for complicated giant skin abscesses: a series of case studies</b>	
Qin Qin	
CS02-7	10
<b>Ecthyma gangrenosum caused by Burkholderia cepacia in immunocompetent man: the first case report in Chinese and English literature</b>	
Lan Zhang	
CS02-8	11
<b>Multiple misdiagnosis of diffuse multibacillary leprosy patient with Lucio's phenomenon and positive anticardiolipin antibodies</b>	
Wei Gao	
CS02-9	11
<b>Skin rash in a child with infectious mononucleosis</b>	
Xian-Hua Jin	

CS02-10		12
<b>A case of abdominal subcutaneous abscess caused by Eikenellacorrodens</b>		
Xiao Zhang		
<i>CS03 Basic Research</i>		
<i>Basic Research 1</i>		
CS03-1-1		12
<b>Immune mechanism of allergen-specific immunotherapy in atopic dermatitis</b>		
Kwang-Hoon Lee		
CS03-1-2		13
<b>Role of keratin 24 in human epidermal keratinocytes</b>		
Min Zheng, Min Min, Xi-Bei Chen, Ping Wang, Jia-Qi Chen, Wei Li, Sui-Qing Cai, Xiao-Yong Man		
CS03-1-3		13
<b>A novel antimicrobial (host defense) peptide AMP-IBP5 activates human keratinocytes</b>		
Francois Niyonsaba, Panjit Chieosilapatham, Ko Okumura, Shigaku Ikeda, Hideoki Ogawa		
CS03-1-4		13
<b>A virulence factor of <i>Candida albicans</i>, Candidalysin, modulates human keratinocyte functions</b>		
Pu Song, Francois Niyonsaba, Ko Okumura, Shigaku Ikeda, Hideoki Ogawa		
CS03-1-5		14
<b>Effects of platelet-rich plasma on proliferation and migration in human dermal fibroblasts</b>		
Ye-Ji Jang, Kwang-Joong Kim		
CS03-1-6		14
<b>Local hyperthermia promotes the healing of sporotrichosis by activating CRAC channel of immunocytes in lesions</b>		
Zheng-Xiu Li, Xing-Hua Gao		
CS03-1-7		15
<b>Over-expressed TNFAIP3 promotes melanoma growth, invasion, migration and immune escape function by activating STAT3/PD-L1 pathway</b>		
Jin-Yuan Ma, Wei-Nan Guo, Sen Guo, Shi-Yu Wang, Tian-Wen Gao, Chun-Ying Li		
CS03-1-8		15
<b>CX3CR1-deficiency alleviates skin inflammation by blocking Ly6Chi monocytes migration and Langerhans cell local repopulation</b>		
Ying-Ping Xu		
CS03-1-9		16
<b>1, 25-(OH)<sub>2</sub> Vitamin D3 inhibits autologous DNA immune complex induced dendritic cells activation and modulates Treg/Th17 immune balance in systemic lupus erythematosus</b>		
Li Luo, Chuan-Chuan Lin, Zhi-Qiang Song, Fei Hao, Na Luo		
CS03-1-10		16
<b>Genome-wide screening and function analysis of long noncoding RNA expression in CD4+ T cells of systemic lupus erythematosus</b>		
Hai-Hong Qin, Jin-Ran Lin, Xiao Liu, Jin-Hua Xu		
<i>Basic Research 2</i>		
CS03-2-1		17
<b>Research on susceptible genes and immunopathogenesis of cutaneous adverse drug reaction in Chinese Hans</b>		
Xiao-Qun Luo		
CS03-2-2		17
<b>Susceptibility of epithelial derived stationary tumor cells to hyperthermia</b>		
Xing-Hua Gao		

CS03-2-3	18
<b>Photodynamic therapy against both methicillin-resistant Staphylococcus aureus and Pseudomonas aeruginosa</b>	
Tomoko Hasuike, Toshiyuki Ozawa, Bumpei Katayama, Sakiko Kuzuya, Nobuko Ito, Kunio Awazu, Daisuke Tsuruta	
CS03-2-4	18
<b>17<math>\beta</math>-estradiol affects hair follicle growth via cannabinoid receptor type 1</b>	
Sayaka Togo, Koji Sugawara, Daisuke Tsuruta	
CS03-2-5	19
<b>Adiponectin promotes caspase-14 expression in normal human epidermal keratinocytes</b>	
Ga-Ram Ahn, Sun-Young Choi, Min-Jeong Kim, Ji-Yeon Hong, Kui-Young Park, Seong-Jun Seo	
CS03-2-6	19
<b>Targeting phosphorylation of p21 activated kinase 1 at Thr423 induces cell cycle arrest and apoptosis in cutaneous T-cell lymphoma cells</b>	
Yi-Meng Wang, Wei-Wei Li, Qian Zhang, Chun-Lei Zhang	
CS03-2-7	20
<b>Roles of the TGF-<math>\beta</math>1/Smad signalling pathway in the development of UV-induced cutaneous squamous cell carcinoma</b>	
Juan Zhang, Hui Jiang, Dan Xu, Wen-Juan Wu, Hong-Duo Chen, Li He	
CS03-2-8	20
<b>Role of thrombospondin 1 (TSP1) mediated by mouse skin-derived precursors (mSKPs) in the anti-UVB radiation damage via TGF-<math>\beta</math>/Smad pathway</b>	
Yi-Ming Li, Li-Dan Xiong, Jie Tang, Li Li	
CS03-2-9	21
<b>Hydrogen gas inhalation protects against cutaneous ischemia/reperfusion injury in a mouse model of pressure ulcer</b>	
Wei Fang, Gui Wang, Tang-LuYan, Hui-Lin Su, Hu-Yan Chen, Wan-Qing Liao, Jin-Hua Xu	
CS03-2-10	21
<b>Genome-wide analysis of protein-coding variants in leprosy</b>	
Hong Liu, Zhen-Zhen Wang, Xi-An Fu, Fang-Fang Bao, Yong-Hu Sun, Chuan Wang, Gong-Qi Yu, Fu-Ren Zhang	
 <i>CS04 Benign and Malignant Tumors</i>	
 <i>Benign and Malignant Tumors 1</i>	
CS04-1-1	22
<b>Role of fusion genes in the pathogenesis of cutaneous tumors</b>	
Masatoshi Jinnin	
CS04-1-2	22
<b>pH-triggered synergistic chemo-photothermal therapy to inhibit progression of melanoma by eliciting antitumor immunity</b>	
Ya-Min Zhang	
CS04-1-3	23
<b>Clinical analysis of calcifying epithelioma: a retrospective study during 11 years period</b>	
Shohei Igari	
CS04-1-4	23
<b>Integration of periostin, M2 macrophages and integrin in human and murine melanoma progression</b>	
Fumitaka Ohno, Takeshi Nakahara, Makiko Nakahara, Satoshi Nunomura, Kenji Izuhara, Masutaka Furue	
CS04-1-5	24
<b>Clinical analysis of 70 cases of eccrine poroma</b>	
Takashi Ito, Tatuhiko Mori, Mikio Otuka, Toshiyuki Yamamoto	
CS04-1-6	24
<b>Light responsive biodegradable transformer for theranostics of melanoma</b>	
Zhi-Ming Li	

CS04-1-7	24
<b>Wolf's isotopic response of cutaneous leukemic infiltration following herpes zoster: a case report</b>	
Hui Ke, Xiao-Pan Gong, Hui-Chun Su, Wei Su, Bo Cheng	
CS04-1-8	25
<b>Effect and underlying mechanisms of monocyte-derived tolerigenic langerhans cells on the development and metastasis of melanoma</b>	
Jun Li, Qiu-Ying Ma, Ming Yang, Juan Tao	
CS04-1-9	25
<b>Expression of activity-induced cytidine deaminase in melanoma and its correlation with the BRAF mutation and clinicopathological features</b>	
Xiao-Jing Kang, Yan-Jun Wang, Ying Wang, Jiao-Peng Lyu	
CS04-1-10	26
<b>Gardener fibroma with localized hypertrichosis: report of a Chinese case without the APC gene mutation</b>	
Xue-Yan Yao, Dan-Hua Shen, Dong-Dong Che, Guang-Dong Wen, Jian-Zhong Zhang, Cheng Zhou	
<i>Benign and Malignant Tumors 2</i>	
CS04-2-1	26
<b>Clinical and histopathologic features of nail unit melanoma</b>	
Dong-Youn Lee	
CS04-2-2	27
<b>Study of novel targeting molecules for melanoma treatment</b>	
Cong Peng	
CS04-2-3	27
<b>Efficacy of low dose 5-fluorouracil/cisplatin therapy for invasive extramammary Pagets disease</b>	
Hiroshi Kato, Motoki Nakamura, Ai Horio, Akimichi Morita	
CS04-2-4	28
<b>Two cases of malignant melanoma treated with BRAF/MEK inhibitors followed by premeditated switch to anti-programmed death-1 antibody</b>	
Asuka Amano, Satoshi Tsuboi, Takanobu Kan, Maiko Tanaka, Mikio Kawai, Michihiro Hide	
CS04-2-5	28
<b>TET2-mediated DNA hydroxymethylation epigenetically sensitizes melanoma to all-trans retinoic acid via BMI-1 pathway</b>	
Song-Mei Geng, Yan-Ting Liu, Zhao-Wei Chu, Su-Yun Xu, Xin-Yue Zhang, George Murphy, Christine Lian	
CS04-2-6	29
<b>Research progress of traditional Chinese medicine in treating skin malignant melanoma</b>	
Sheng-Yuan Hua, Wei-Wei Mao, Xin Li, Bin Li, Xiao Miao, Jie Chen	
CS04-2-7	29
<b>Application of surgery combined with photodynamic therapy in intractable skin tumors</b>	
Shuang Zhao, Kai Huang, Jin-Mao Li, Jiang-Lin Zhang, Jun-Jie Luo, Ming-Liang Chen, Li-Xia Lu, Fang-Fang Li, Juan Su, Wei Shi, Xiang Chen	
CS04-2-8	30
<b>DNA damage-inducible transcript 4 is an innate guardian for human squamous cell carcinoma and an molecular vector for anti-carcinoma effect of 1, 25(OH)2D3</b>	
Heng-Guang Zhao, Xiao Zhang	
CS04-2-9	30
<b>Cutaneous T cell lymphomas from Shanghai: clinicopathological correlation</b>	
Ye-Qiang Liu	
CS04-2-10	31
<b>Clinical and pathological analysis of cutaneous Rosai-Dorfman disease</b>	
Ying zhang, Hao Chen, Wei Zhang, Xiu-Lian Xu, Yi-Qun Jiang, Xue-Si Zeng, Jian-Fang Sun	

## *CS05 Bullous Diseases & Metabolic and Endocrine Disorders*

CS05-1	31
<b>Interaction between subcutaneous fatty tissue and hair follicles: hair growth-promoting effects of adiponectin</b>	
Ohsang Kwon	
CS05-2	32
<b>Application of topical treatments in pemphigus patients and its underlying mechanisms</b>	
Hui-Jie Yuan, Meng Pan	
CS05-3	32
<b>Risk factors of relapse in patients with pemphigus herpetiformis: a retrospective cohort study</b>	
Li Li	
CS05-4	33
<b>Indirect immunofluorescence on salt-split skin as a first choice in bullous pemphigoid diagnosis</b>	
Sui-Ying Feng	
CS05-5	33
<b>Identification of immunodominant Th2 cell epitopes in Chinese bullous pemphigoid patients</b>	
Jie-Yu Zhang	
CS05-6	34
<b>Azathioprine induced myelosuppression in two pemphigus vulgaris patients with homozygous polymorphism of NUDT15</b>	
Yen-Chi shi, Ya-Ru Zou	
CS05-7	34
<b>Diabetic ulcer and Acquired perforating dermatosis associated with diabetes: a case report</b>	
Tong Xiao	
CS05-8	35
<b>Effort of thalidomide on OSMR-related pathway in keratinocyte</b>	
Qian An	
CS05-9	35
<b>A case of disseminated cutaneous tophus</b>	
Jian-Xin Xia	
CS05-10	36
<b>Acquired reactive perforating collagenosis: one case report and review of the literature</b>	
Jun-Feng Yu	

## *CS06 Collagen Diseases and Vasculitis & Photodermatoses*

CS06-1	36
<b>B lymphocyte abnormalities in scleroderma</b>	
Shinichi Sato	
CS06-2	36
<b>Clinical characteristics, genotype - phenotype correlations and founder effects of xeroderma pigmentosum in Japan</b>	
Shinichi Moriwaki	
CS06-3	37
<b>Solar urticaria: clinical characteristics, treatment and prognosis in a series of 28 Japanese patients</b>	
Shinya Imamura, Yoshiko Oda, Ken Washio, Kaori Nakata, Atsushi Fukunaga, Chikako Nishigori	
CS06-4	37
<b>Clinicopathological study of eosinophilic fasciitis</b>	
Mariko Seishima, Hirofumi Niwa	

CS06-5	38
<b>Lupus erythematosus tumidus: retrospective study of 29 cases</b> Xiao-Lei Liu	
CS06-6	38
<b>Retrospective case-control study on dermatomyositis with interstitial lung disease in KMC</b> Dan-Qi Deng	
CS06-7	39
<b>Clinical research of combined leukotrienes receptor antagonist and total glucosides of paeony for treating henoch-schönleinpuroura with kidney damage</b> Yi-Ming Wang	
CS06-8	39
<b>Osler's nodes in systemic lupus erythematosus: a case report</b> Qing-Rong Ni	
CS06-9	40
<b>Dermatomyositis with secondary probable Evans syndrome in a 15-year-old girl: a case report</b> Jian-Kang Yang	
CS06-10	40
<b>Effect of AGEs on cathepsin expression in UVA-irradiated dermal fibroblasts</b> Jian-Kang Yang	
<i>CS07 Cosmetic Dermatology</i>	
CS07-1	41
<b>Laser treatment in scar management</b> Sang Ju Lee	
CS07-2	41
<b>A new whitening agent for the treatment of chloasma</b> Li He	
CS07-3	42
<b>MicroRNA-224-5p induced claudin-5 deficiency contributed defective permeability barrier in sensitive skin</b> Li Yang, Wen-Juan Wu, Le-Chun Lyu, Ying Tu, Hua Gu, Mao-Qiang Man, Li He	
CS07-4	42
<b>Seasonal variation of skin photoreaction and biophysical properties</b> Chao Yuan, Yi-Yi Zhang, Li Ma	
CS07-5	43
<b>Efficacy and safety of intense pulsed light in the treatment of inflammatory acne vulgaris with a novel filter</b> Juan Du, Sun-Yi Chen, Zhong Lu	
CS07-6	43
<b>A novel fractional radio-frequency technology for the treatment of keratosis pilaris: a pilot study</b> Yu-Xi Dong	
CS07-7	44
<b>Mottled hypopigmentation induced by Q-switched 1064 nm Nd: YAG Laser in the treatment of melasma: a two year follow-up study</b> Hua-Xu Liu	
CS07-8	44
<b>Cathepsin D contributes to the accumulation of advanced glycation end products during photoaging</b> Qing-Fang Xu, Xin-Ya Xu, Yue Zheng, Yun-Fen Huang, Yu-Ying Li, Chun Lu, Wei Lai	
CS07-9	45
<b>Epidermal barrier function and redox biochemistry are sensitive to exposure to air pollution</b> Nan Huang, Ting-Yan Mi, Si-Min Xu, Miao Miao, Guo-Qiang Chen, Tony Dadd, Ye Xu, Ya-Ping Du, Jane Matheson, Jian-Ming Lee, Uma Santhanam	

CS07-10		45
<b>Clinical application of hydroporation transdermal delivery system combined with new IPL technology</b>		
Dan Jian		
 <i>CS08 Dermatitis and Skin Allergy</i>		
CS08-1		46
<b>Recent Progress in atopic dermatitis</b>		
Norito Katoh		
CS08-2		46
<b>Skin microbiota and the metabolites in atopic dermatitis</b>		
Wei Li		
CS08-3		46
<b>Drug-induced hypersensitivity syndrome (DIHS) accompanied by rhabdomyolysis</b>		
Yasushi Ootake, Eri Morishita, Maki Sato, Masumi Kono, Kazuko Nakamura, Michiko Aihara, Takeshi Kambara		
CS08-4		47
<b>Heterozygote deficiency of the keratinocyte proline-rich protein enhances the skin barrier by increasing lysophosphatidic acid receptor expression</b>		
Ai Matsuno, Ayumi Yoshizaki, Hirofumi Nakanishi, Shumpei Ishikawa, Masashi Fukayama, Shinichi Sato		
CS08-5		47
<b>Clinical characteristics and genetic variations in atopic dermatitis patients with and without allergic contact dermatitis</b>		
Solam Lee, Hye-young Wang, Eunjung Kim, Hyun Jee Hwang, Eunhee Choi, Hyeyoung Lee, Eung Ho Choi		
CS08-6		48
<b>Hypereosinophilic syndrome associated with type I neurofibromatosis</b>		
Yu-Qing Hu		
CS08-7		48
<b>Characterization of the autoimmune subtypes and immunologic features of chronic spontaneous urticaria</b>		
Peng Geng		
CS08-8		49
<b>Patch test in Chinese patients with cosmetic allergy to cosmetic series and products</b>		
Ying Zou		
CS08-9		49
<b>Differentiation and polarization of T cells stimulated by TGM3</b>		
Hui-Chun Su		
CS08-10		50
<b>Study on images of common facial inflammatory skin diseases and AI-assisted diagnosis</b>		
Xiao-Ming Liu		
 <i>CS09 Fungal Infection</i>		
CS09-1		50
<b>Korean guideline for the diagnosis and treatment of onychomycosis</b>		
Jin Park		
CS09-2		51
<b>CARD9 deficiency and genetic susceptibility of dematiaceous fungal infection</b>		
Ruo-Yu Li		
CS09-3		51
<b>Evaluation of relationships between onychomycosis and vascular diseases using sequential pattern mining</b>		
Chul Hwan Bang, Ji Hyun Lee		

CS09-4	52
<b>Epidemiologic feature and clinical analysis of HIV/AIDS with Penicilliosis Marneffeii in Yunnan Province</b>	
Yu-Ye Li, Teng-Yan Li	
CS09-5	52
<b>Integration of quantitative proteomic and transcriptomic analysis in macrophage stimulated by mannoprotein of <i>Candida albicans</i></b>	
Hang-Hang Jiang, Rui-Qun Qi, Yu-Xiao Hong, Song Zheng, Xing-Hua Gao	
CS09-6	53
<b>Dermoscopy and fungal fluorescence staining detect infant kerion caused by <i>Arthroderma otae</i> with successful treatment of itraconazole</b>	
Bin Yin, Meng-Sha Ma, Li-Xin Fu, Qiao-Mei Sun, Wen-Ju Wang, Xue-Ying Liu	
CS09-7	53
<b>Silencing SOCS1 in dendritic cells protects from systemic <i>Candida albicans</i> by enhancing Th1-cell differentiation</b>	
Dong-Mei Shi, Wei-Da Liu	
CS09-8	54
<b>Comparative genomics and transcriptomics analyses of the fungal pathogen <i>Prototheca zopfii</i></b>	
Xuan-Hao Zeng	
CS09-9	54
<b>Establishment of a diagnostic system for cutaneous infectious granuloma</b>	
Ying-Gai Song, Xiao-Wen Wang, Ruo-Jun Wang, Wei Liu, Jin Yu, Ai-Ping Wang, Ruo-Yu Li	
CS09-10	55
<b>Ecological, phenotypic and phylogenetic analysis of <i>Cryptococcus gattii</i> in Southeastern China</b>	
Min Chen, Wan-Qing Liao	
 <i>CS10 Genetic Disorders</i>	
CS10-1	55
<b>Hereditary hypopigmentary disorders: a better understanding from a genetic view</b>	
Tamio Suzuki	
CS10-2	55
<b>HLA-B*13:01 screening to Prevent Dapsone Hypersensitivity Syndrome</b>	
Hong Liu	
CS10-3	56
<b>Neurofibromatosis type 1-associated serious hemorrhagic events successfully treated with steroid pulse therapy</b>	
Tatsuya Ogawa, Yosuke Ishitsuka, Sae Inoue, Yasuhiro Fujisawa, Manabu Fujiomoto	
CS10-4	56
<b>Permanent alteration of Abcc6 in vivo CRISPR-Cas9 genome editing</b>	
Da-Long Zhi	
CS10-5	57
<b>Novel MBTPS2 mutation in a Chinese pedigree with ichthyosis follicularis, alopecia, and photophobia syndrome</b>	
Zhou Yang	
CS10-6	57
<b>Non-invasive prenatal diagnosis for Neurofibromatosis type 1 of paternal mutation by next-generation sequencing</b>	
Jian-Ying Liang	
CS10-7	58
<b>Exome Sequencing in a Chinese Family Identifies TTC9 Mutation associated with Keratitis-Ichthyosis-Deafness (KID) syndrome</b>	
Xiao-Hua Wang	
CS10-8	58
<b>GWAS follow-up study discovers a novel genetic signal on 10q21.2 for atopic dermatitis in Chinese Han population</b>	
Xin-Ying Cai	

CS10-9	59
<b>Clinical and histopathological analysis of Blau Syndrome and Early-onset Sarcoidosis</b>	
Yi Zheng	
CS10-10	59
<b>Establishment of a sample database and clinical management system of hereditary epidermolysis bullosa in the West China Hospital</b>	
Guo-Qin Liu	
 <i>CS13 Pigmentary Disorders</i>	
CS13-1	60
<b>Melasma: updates and perspectives</b>	
Kyoung-Chan Park	
CS13-2	60
<b>Blocking the oxidative stress-induced CXCL16-CXCR6 chemotaxis to develop new targeted treatments for vitiligo</b>	
Chun-Ying Li	
CS13-3	60
<b>Natural course of nevus depigmentosus: long-term follow-up of 92 cases</b>	
Jae Min Sung, Ji Young Yang, Soo Hyun Kwon, So Min Kim, Jung Min Bae, Hee Sun Chang, Hyub Kim, Hee Young Kang, Eun-So Lee, You Chan Kim	
CS13-4	61
<b>Combination of 308-nm excimer laser with topical pimecrolimus for the treatment of childhood vitiligo</b>	
Hui-Lan Yang	
CS13-5	61
<b>Necroptosis is a novel way of melanocyte death in oxidative stress-related vitiligo pathogenesis</b>	
Bo-Wei Li	
CS13-6	62
<b>Mussel adhesive protein inhibits post-inflammatory hyperpigmentation through wound healing and attenuation of inflammation</b>	
Zi-Qi Liu	
CS13-7	62
<b>Plasma miRNAs profiles in Uyghur patients with nonsegmental vitiligo</b>	
Xiao-Jing Kang	
CS13-8	63
<b>Analysis of the effect of different doses of oral tranexamic acid in treating melasma: a multicenter prospective study</b>	
Chen-Yu Zhu	
CS13-9	63
<b>Novel heterozygous missense mutation in the exon 6 of the POFUT1 gene in Dowling-Degos disease</b>	
Ying-Da Wu	
CS13-10	64
<b>Impaired ACTivation of SIRT3 contributes to oxidative-stress induced mitochondrial dysfunction: a possible mechanism underlying the degeneration of melanocytes in vitiligo</b>	
Xiu-Li Yi	
 <i>CS14 Psoriasis</i>	
CS14-1	64
<b>Role of IL-17-producing cells in the pathogenesis of psoriasis</b>	
Tomotaka Mabuchi	
CS14-2	65
<b>Study on the efficacy and mechanism of matrine and its combination of acitretin for psoriasis</b>	
Wei-Wei Jiang	

CS14-3	65
<b>Fn14 deficiency ameliorates psoriasis-like skin disease in a murine model</b> Ling-Ling Peng	
CS14-4	66
<b>Immunological memory exists in the recurrent lesion and nonrecurrent skin after remission in psoriatic patients</b> Zhu Shen	
CS14-5	66
<b>Decrease of Galectin-3 in keratinocytes: a potential diagnostic marker and a critical contributor to the pathogenesis of psoriasis</b> Zhen-Rui Shi	
CS14-6	67
<b>Up-regulated E3 Ligase Trim21 contributes to keratinocytes proliferation and inflammation in psoriasis</b> Lu-Ting Yang	
CS14-7	67
<b>MiRNA-17-92 promotes proliferation and chemokine production of keratinocytes: implication for the pathogenesis of psoriasis</b> Sen Guo	
CS14-8	68
<b>CD8<math>\alpha</math>+T cells contribute to psoriasis by producing pro-inflammatory cytokin</b> Yang-Yang Zhang	
CS14-9	68
<b>Acitretin Down-regulates the Number of MDSCs in the Treatment of Psoriasis Vulgaris</b> Pan-Pan Liu	
CS14-10	69
<b>Study on the interferential and regulative role of chemokine-like factor 1-C-terminal peptides in psoriasis</b> Yi Zheng	
CS14-11	69
<b>HMGB1 inhibitor effectively alleviates psoriasis-like lesions and inflammatory cytokines in K14-VEGF transgenic mouse</b> Li-Xin Fu	
 <i>CS15 Sexually Transmitted Diseases</i>	
CS15-1	70
<b>Sexually transmitted viral diseases (genital herpes and human papilloma virus infection)</b> Eun-So Lee	
CS15-2	70
<b>Neurosyphilis: A neglect and persistent challenging complicated disease</b> Ping-Yu Zhou	
CS15-3	71
<b>Early congenital syphilis</b> Hong-Shuai Wang, Jun Li	
CS15-4	71
<b>Characteristics and geographical distribution of HIV/AIDS among adults over 50 years old in Ruili City from 1989 to 2016</b> Si-Le Li, Zhou-Lin Li, Er-Da Zheng, Chen-Bo Wang, Bang Liu, Xia Peng, Hong Li	
CS15-5	72
<b>Effects of 5-aminolevulinic acid photodynamic therapy for condylomata acuminata on local immunity</b> Fang Xie, Hai-Sheng Yu, Dong Wang, Yan-Ming Li, Hai-Ying Wen, Jiang-Bo Du, Wei Ba, Xian Meng, Jie Yang, Heng-Jin Li, Cheng-Xin Li, Li-Guo Zhang, Hua Zhao, Xiang-Dong Fang	

CS15-6	72
<b>Blinding ocular syphilis in China: A retrospective cohort study</b>	
Xin Gu, Ping-Yu Zhou	
CS15-7	73
<b>Levels of NF-L and pNF-H in cerebrospinal fluid and blood of patients with neurosyphilis</b>	
Wen-Hui lun, Dong-Mei Xu, Sheng-Nan Cai	
CS15-8	74
<b>Strong immunogenicity of Neisseria gonorrhoeae MtrE surface expressed Loop 2 fusion protein in vitro</b>	
Rui Han, Si-Yuan Sun, Hao Cheng, Stijn van der Veen	
CS15-9	74
<b>Regulatory role of estradiol to IL-36-JAK-STAT through REA/HDACs in pathogenesis mechanism of asymptomatic gonorrhea</b>	
Rong-Yi Chen, Shuang Liu, Fang Zhang, Hui-Zhi Yang, Zhi-Hua Wu	
CS15-10	75
<b>Tea polyphenols inhibits cell growth and induces apoptosis on HPV16 subgenes immortalized human cervical epithelial cells</b>	
Quan Chen, Zi-Yin Mo, Hua-Ping Li, Ri-Dong Yang, Hui-Lan Zhu	
 <i>CS16 Therapies</i>	
CS16-1	75
<b>Treatment of focal infection in several inflammatory skin diseases</b>	
Toshiyuki Yamamoto	
CS16-2	76
<b>TWEAK/Fn14 signals mediate burn wound repair</b>	
Yue-Min Xia	
CS16-3	76
<b>Low-dose thalidomide treatment for a generalized cutaneous Rosai-Dorfman disease</b>	
Jia-Yi Ying	
CS16-4	76
<b>Lichen aureus with hands and feet involvement responding well to tripterygium glycosides</b>	
Jing Sun	
CS16-5	77
<b>Successful treatment of infliximab in a patient with Reiter's syndrome: a case report</b>	
Xing-Xiao Lin	
CS16-6	77
<b>Febrile ulceronecrotic Mucha-Habermann disease in an 11-year-old boy responding to lymphoplasmapheresis and methotrexate</b>	
Ben Wang	
CS16-7	77
<b>Clinical efficacy and safety of using Minocycline in the treatment of unstable vitiligo</b>	
Jin Wang	
CS16-8	78
<b>Successful treatment of SAPHO syndrome with thalidomide: a case report</b>	
Qian-Nan Xu	
CS16-9	78
<b>Livedoid vaculopathy: clinical features and treatment as experienced in 24 Chinese patients</b>	
Sui-Ying Feng	
CS16-10	79
<b>Propranolol as an antiangiogenic agent for the treatment of Parkes-Weber syndrome</b>	
Jian-Yun Lu	

## *CS17 Miscellaneous*

CS17-1	79
<b>Cutaneous extranodal NK cell lymphomas in Korea</b> Mi Woo Lee	
CS17-2	80
<b>Transcription factor and aberrant epigenetic modifications in lupus T cells</b> Ming Zhao	
CS17-3	80
<b>Clinical experience of the treatment using negative pressure wound therapy (NPWT): a study of 34 cases</b> Akihito Maki, Hiroshi Kato, Ai Horio, Motoki Nakamura, Akimiti Morita	
CS17-4	81
<b>Dermatologic disorders in patients with multiple myeloma: a retrospective cohort study from Korean experience</b> Yu Ri Woo, Seung Hwan Baek, Yu Jin Jung, Jong Sic Kim, Ji Hong Ihm, Miri Kim, Hyun Jeong Park	
CS17-5	81
<b>First diagnosed nodal marginal zone lymphoma in excessive insect bite reaction: a case report</b> Si Jiang	
CS17-6	82
<b>RNA-seq analysis reveals unique transcriptome signatures in dermatomyositis</b> Ke Xue	
CS17-7	82
<b>A rare case of eosinophilic granuloma associated with adult xanthogranuloma</b> Li-Yun Zheng	
CS17-8	82
<b>Application of photodynamic therapy in some refractory skin diseases</b> Shuang Zhao	
CS17-9	83
<b>Demographic factors and prevalence of rosacea in dermatology outpatients in Shanghai</b> Qian-Li Yang	
CS17-10	84
<b>Cutaneous Rosai-Dorfman with acne-like appearance: a case report</b> Hong-Mei Zhou	

## **Poster**

### *PO01 Appendages' Diseases*

PO01-003	85
<b>Skin-colored to yellowish subungual flat plaque in a 16-year-old girl</b> Hyung Jin Park, Ye-Jin Lee, Chan-Yang Lee, Hye-Jin Ahn, Ki-Heon Jeong, Mu-Hyoung Lee, Min Kyung Shin	
PO01-007	85
<b>Efficacy and safety of tofacitinib in patients with recalcitrant alopecia totalis</b> Yong-Yon Won, Joong-Woon Choi, Ye-Jin Lee, Bark-Lynn Lew, Woo-Young Sim	
PO01-008	86
<b>Dermoscopic findings in acute and diffuse total alopecia</b> Yong-Yon Won, Joong-Woon Choi, Ye-Jin Lee, Bark-Lynn Lew, Woo-Young Sim	
PO01-013	86
<b>Clinical findings of onychophagia in Korean patients: A single centre experience</b> Dong young Roh, Woo-Il Kim, Min-Young Yang, Won-Ku Lee, Tae-Wook Kim, Sung-Min Park, Hyun-Joo Lee, Gun-Wook Kim, Hoon-Soo Kim, Hyun-Chang Ko, Byung-Soo Kim, Moon-Bum Kim	

PO01-017	87
<b>Clinical and histopathological characteristics of linear alopecia of the scalp in Korea: A single centre experience</b>	
Hak-Jun Kim, Hyang-Suk Ryu, Gun-Wook Kim, Hyun-Chang Ko, Hoon-Soo Kim, Byung-Soo Kim, Moon-Bum Kim	
PO01-022	87
<b>Disseminated keratosis follicularis squamosa</b>	
Wenrui Li, Xiulian Xu, Yiqun Jiang, Guoyi Zhang, Chengrang Li	
PO01-031	87
<b>A case of Trichorrhexis Nodosa and scanning electron microscopy study</b>	
Guanzhao Liang, Weida Liu	
PO01-033	88
<b>Epidemiologic and clinical features of hidradenitis suppurativa in Korea: A nationwide multicenter study</b>	
Dae Hun Suh, Jungyoon Moon, Ji Hoon Yang, Young Chul Kye, Kwang Joong Kim, Myeung Nam Kim, Young Suck Ro, Mi Youn Park, Hyo Hyun Ahn, Mi Woo Lee, Weon Ju Lee, Ju Hee Lee, Jee Bum Lee, Min Soo Jang, Yu Sung Choi, You Won Choi	
PO01-001	88
<b>Prostanoids and hair follicles</b>	
Xuegang Xu, Hong-Duo Chen	
PO01-002	89
<b>Child with early phase of extrinsic atopic dermatitis: A case report</b>	
Yang Han	
PO01-004	90
<b>Longitudinal melanonychia to treatment with hydroxychloroquine in systemic lupus erythematosus</b>	
Si Zhang, Cheng Zhou, Lin Cai, Jian-Zhong Zhang	
PO01-005	90
<b>Baicalin facilitates anagenic hair growth through regulating immune privilege of hair follicle in C57/BL6 mice</b>	
Fei Xing, Tie-Chi Lei	
PO01-006	91
<b>Efficacy of compound betamethasone combined with compound glycyrrhizin in the treatment of severe active alopecia areata: a randomized controlled study</b>	
Jun Zhao, You-Yu Sheng, Qin-Ping Yang	
PO01-009	91
<b>A collision tumor: Nevus lipomatosus cutaneous superficialis and steatocystoma simplex</b>	
Tong Xiao, Yan-Fei Zhang, Biao Yu, Yi-Guo Feng	
PO01-010	92
<b>Eccrine chromhidrosis</b>	
Lina Xu, Jian-Jun Qiao, Hong Fang	
PO01-011	92
<b>Analysis of clinical and pathological features of follicular sebaceous cystic hamartoma</b>	
Qiang Zhao, Song-Mei Geng, Hong-Mei Zhou, Qian Shang	
PO01-012	93
<b>A case report of Olmsted syndrome</b>	
Li-Wen Zhang	
PO01-014	93
<b>A case of inverted follicular keratosis and literature review</b>	
Yan Cheng, Yi-Ming Wang	
PO01-015	94
<b>An evaluation of the efficacy of potent corticosteroids occlusion in children with severe type of alopecia areata</b>	
Yanting Ye, Hui Cao, Yun-Xia Ling, Zi- Zeng, Jian Yang, Yu-Qing Yang, Xing Zhang	

PO01-016	94
<b>Multiple application of intramuscular compound betamethasone in the treatment of alopecia areata</b>	
Yan-Ting Ye, Fang Wang, Hui Cao, Yun-Xia Ling, Jian Yang, Yu-Qing Yang, Shi-Ling Qi, Shui-Feng Li, Xing-Qi Zhang	
PO01-018	95
<b>Analysis of drug resistance genes of <i>Corynebacterium acnes</i> in acne patients in Dongguan area</b>	
Huijing Tang, Jian-Bo Ruan	
PO01-019	95
<b>Primary cutaneous mucinous carcinoma: A case report</b>	
Min Lin, Jin-wen Huang, Fang Fang, Chao Ji, Bo Cheng	
PO01-020	95
<b>A case of Rombo syndrome with trichoepithelioma and differential diagnosis of atrophoderma vermiculatum</b>	
Jian-Ying Liang, Yi-Feng Guo, Hui Zhang, Cheng Ni, Yan Gu, Dan Deng, Xue Zhang, Hong Yu, Zhi-Rong Yao	
PO01-021	96
<b>A case of mixed tumor</b>	
Ru-Xin Zhao, Min Lin, Xiu-Cheng Wang, Chao Ji, Bo Cheng	
PO01-023	96
<b>Relationship between rosacea and dietary factors: A multi-center retrospective case-control survey</b>	
Ji Li, Xin Yuan, Ben Wang, Dan Jian, Wei Shi, Ying-Xue Huang, Hong-Fu Xie	
PO01-024	97
<b>Acne vulgaris patients have significantly altered gut microbiota and microbial metabolites in adolescents but not in adults</b>	
Yongqiong Deng, Xia Xiong	
PO01-025	97
<b>Effect of rbFGF on repair of rosacea</b>	
Yang Luo, Xiu-Li Luan, Yu-Jiao Sun, Li Zhang, Jian-Hong Zhang, Lan-Xi Wu	
PO01-027	98
<b>Trichofolliculoma: A case report</b>	
Meng-Ying Duan, qian Zhang	
PO01-028	98
<b>Acne flare following treatment: investigating the difference of gene expression in peripheral blood</b>	
Yuchen Jiang, Wei Lai	
PO01-029	99
<b>Efficacy of supernatant of hAMSCs in a mouse model of <i>Propionibacterium acnes</i>-induced inflammation.</b>	
Ni Zeng, De-Yu Li, Bi-Lan Cao	
PO01-030	99
<b>Pretreatment to cyst by fire needle improves effect of photodynamic therapy for cystic acne</b>	
Jianwen Ren, Wei-Hui Zeng, Liang Wang, Jing Zhang	
PO01-032	99
<b>Treatment of acne with new supramolecular salicylic acid and literature review</b>	
Li-Ying Tang, Jing Xue, Xi-yuan Zhou	
<i>PO02 Bacterial and Viral Infection</i>	
PO02-004	100
<b>Cutaneous <i>Mycobacterium massiliense</i> infection caused by skin coining “Gua Sha”</b>	
Jin Park, Eui-Sung Jung, Sang-Woo Park, Hyun-Bin Kwak, Su-Kyung Park, Seok-Kweon Yun, Han-Uk Kim	

PO02-005	100
<b>A case of cutaneous infection caused by <i>Mycobacterium gordonae</i></b>	
Chan-Yang Lee, Ye-Jin Lee, Hyung-Jin Park, Hye-Jin Ahn, Min Kyung Shin, Ki-Heon Jeong	
PO02-017	100
<b>Cutaneous <i>Mycobacterium massiliense</i> infection associated with bee venom acupuncture</b>	
Kyung muk Jeong, Seung Hwi Kwon, Yoo Sang Baek <sup>1</sup> , Jiehyun Jeon, Chil Hwan Oh, Hae Jun Song	
PO02-001	101
<b>A case of Kaposi varicelliform eruption in adults and literature review</b>	
Zhang-Yu Bu, Ren-Ping Xie	
PO02-006	101
<b>Case series of <i>Mycobacterium abscessus</i> complex cosmetic surgical site infections in China</b>	
Wei Gao, Hongsheng Wang	
PO02-009	102
<b>A case of ulcerative scrofuloderma misdiagnosed as necrobiotic xanthogranuloma for 9 years cured in 3 months</b>	
Yi-Guo Feng	
PO02-016	102
<b>Evaluation of serum-based exosomal miRNAs as potential diagnostic biomarkers for leprosy</b>	
Wei Gao, Hongsheng Wang	
PO02-018	102
<b>Cutaneous infections due to nontuberculous mycobacteria: a retrospective study of 95 cases</b>	
Wei gao, Hongsheng Wang	
PO02-025	103
<b>Progress of treatment of cutaneous nontuberculous mycobacterial infections</b>	
Wei Gao, Hongsheng Wang	
PO02-003	103
<b><i>Listeria monocytogenes</i> meningitis in a young girl with systemic lupus erythematosus</b>	
Xianqiong Huang	
PO02-006	104
<b>Skin ulcer on the penis: a case report</b>	
Abdulrahman Amer, Li-Jiu Hong	
PO02-008	104
<b>Effect of facial microflora of pregnant women on several common skin diseases and skin barrier function</b>	
Yu Huang, Xing-Hua Gao	
PO02-011	104
<b>A giant verruca plantaris treated with acitretin</b>	
Xiang Luo	
PO02-012	105
<b>Herpes zoster infection with sepsis</b>	
Na Cao	
PO02-013	105
<b>A report of two cases of misdiagnosis of leprosy</b>	
Han Li	
PO02-014	105
<b>A case of Kaposi varicelliform eruption in adults</b>	
Lisha He	
PO02-015	105
<b>A case report of erysipeloid</b>	
Qiao-Mei Sun, Tao Chen, Li-Xin Fu, Hao Yang, Jin Wang	
PO02-019	106
<b>A case of misdiagnosis of adult infectious mononucleosis</b>	
Xia Chen	

PO02-020	106
<b>Infant infected chickenpox after being in more frequently contact with the member of the same family who is diagnosed as herpes zoster: A case report</b>	
Jiang-Mei Xu	
PO02-021	106
<b>A case of mycobacterial infection after facial cosmetic injection</b>	
Zhen Zhang, Chao-Ying Gu	
PO02-022	107
<b>Tuberculous chancre on the left knee in a 3-year-old child</b>	
Xin Tian, Li-Dan Zhang	
PO02-023	107
<b>Report a case of ecthyma by the infection of <i>Staphylococcus Aureus</i> and <i>Candida Albicans</i></b>	
Pei-Qiu Zhu	
PO02-024	108
<b>A case report of faical infection caused by <i>Serratia marcescens</i></b>	
Yong-Xuan Hu, Zu-Hao Mao, Kang-Xing Liu, Yan-Qing Hu, Xian-Yi Zhou	
 <i>PO03 Basic Research</i>	
PO03-004	108
<b>Using the patent instrument to measure hypersensitivity ear swelling reactions in mice</b>	
Huiwen Deng, Yi Ren, Yuzhe Sun, Yali Gao, Ruiqun Qi, Xinghua Gao	
PO03-006	109
<b>DJ-1 protects against oxidative stress in melanocytes by regulating mitochondrial function</b>	
Man Li, Fang Wang, Juan Du, Lijuan Wang, Xiaolan Ding	
PO03-013	109
<b>Significance and main methods of hair morphological research</b>	
Jialong Chen, Hongwei Yan, Zhendong Wei, Ruiqun Qi, Xinghua Gao, Hongduo Chen	
PO03-015	110
<b>Protective roles of transcription factor NFIL3/E4BP4 in systemic lupus erythematosus</b>	
Zijun Wang, Jinghua Yin, Ming Zhao, Qianjin Lu	
PO03-027	110
<b>Mouse model supports gene “X” as a new susceptibility gene for alopecia areata</b>	
Qiao-Feng Zhao, Atsushi Takagi, Etsuko Komiyama, Nagisa Yoshihara, Mai Fujisawa, Shigaku Ikeda	
PO03-035	110
<b>Ionizing radiation, but not ultraviolet radiation, induces mitotic catastrophe in mouse epidermal keratinocytes</b>	
Zhi-Cao Yue	
PO03-039	111
<b>Citron essential oils alleviate mediators related to rosacea pathophysiology in epidermal keratinocytes</b>	
Jeon Hyeon Woo, Seung-Chul Lee, Jee-Bum Lee	
PO03-040	111
<b>Air-borne pollutants and other urban-rural differences in life-style and environment are associated with skin appearance and health</b>	
Nan Huang, Renjie Chen, Tingyan Mi, Robert Velthuisen, Ye Xu, Haidong Kan	
PO03-041	112
<b>Air pollution (ozone &amp; particulates) and impact on skin</b>	
Mei Yu, Kelly Dong, James McCarthy, Edward Pelle, Jiabin Sun, Lieve Declercq, Thomas Mammone, Nadine Pernodet	
PO03-042	112
<b>Defect of BDH2 promotes DNA hypomethylation in CD4+ T cells of systemic lupus erythematosus</b>	
Ming Zhao, Mengying Li, Xiaofei Gao, Jing Wang, Huihui Zhang, Haijing Wu, Qianjin Lu	

PO03-063	113
<b>AQP3 involves in skin wound healing maybe through interacting with Coronin 1c</b> Fangfen Liu, Yingzi Liu, Hongfu Xie	
PO03-064	113
<b>Involvement of AQP3 in TGF-<math>\beta</math> induced migration of epidermal cell migration via downstream Smad3 phosphorylation during skin wound healing</b> Fangfen Liu, Yingzi Liu, Hongfu Xie	
PO03-067	114
<b>MiRNAs involved in ultraviolet radiation induced bystander effects</b> Bingrong Zhou, Dan Luo	
PO03-071	114
<b>Suitable endogenous control for the quantification of serum exosome microRNAs</b> Wei Gao, Hongsheng Wang	
PO03-077	114
<b>Silver nanoparticles induce Egr-1 dependent psoriasin expression via the ERK and p 38 pathways</b> Chang Min Kim, Sang Hoon Jeong, Hana Lee, Sang Wook Son	
PO03-088	115
<b>GATA6 overexpression promotes tumor progression in cutaneous T-cell lymphoma</b> Hiroaki Kamijo, Tomomitsu Miyagaki, Naomi Shishido-Takahashi 1, Rina Nakajima, Tomonori Oka, Hiraku Suga, Makoto Sugaya, Shinichi Sato	
PO03-089	115
<b>Frequency of 6p25.3 translocation in primary cutaneous anaplastic large cell lymphoma; comparison with other CD30-positive cutaneous T-cell lymphomas</b> Hiroaki Kamijo, Makoto Sugaya, Tomomitsu Miyagaki, Naomi Shishido-Takahashi, Tomonori Oka, Hiraku Suga, Shinichi Sato, Seiji Sakata, Kengo Takeuchi	
PO03-093	116
<b>Four cases of advanced melanoma treated by sequential administration of nivolumab and dabrafenib/ trametinib therapy</b> Taku Fujimura, Yumi Kambayashi, Lyu Chunbing, Kayo Tanita, Yota Sato, Akira Hashimoto, Setsuya Aiba	
PO03-094	116
<b>RALDH1-producing dermal dendritic cells regulate skin fibrosis via retinoic acid-mediated regulatory T cell induction</b> Shunsuke Miura, Yoshihide Asano, Ryosuke Saigusa, Takashi Yamashita, Takashi Taniguchi, Takehiro Takahashi, Yohei Ichimura, Tetsuo Toyama, Ayumi Yoshizaki, Takafumi Kadono, Shinichi Sato	
PO03-105	117
<b>Sociodemographic characteristics of childhood Hand Foot Mouth Disease: First report on age and sex differentiation from Bangladesh</b> Md Azraf Hossain Khan, Anwar Kazi Selim, Md. Ahasan Ali	
PO03-110	117
<b>Phenotype of dermal dendritic cells is regulated by Fli1 and its deficiency promotes dermal fibrosis in bleomycin-treated mice</b> Shunsuke Miura, Yoshihide Asano, Ryosuke Saigusa, Takashi Yamashita, Kouki Nakamura, Megumi Hirabayashi, Takuya Miyagawa, Ayumi Yoshizaki, Maria Trojanowska, Shinichi Sato	
PO03-001	118
<b>MHY1485 ameliorates UV-induced skin cell damages via activating mTOR-Nrf2 signaling</b> Chao Ji, JinWen Huang, Bo Cheng	
PO03-002	118
<b>Regulatory role of lncRNA CD27-AS1 on CD27 contributes to melanomagenesis</b> Jingjing Ma, Peng Xu, Sen Guo, Qiong Shi, Tian-Wen Gao, Chun-Ying Li	
PO03-003	119
<b>Expression and significance of RASSF1A in psoriasis</b> Jinjing Jia, Yan Zheng	

PO03-005	119
<b>TRPM2 links oxidative stress to mitochondria-dependent apoptosis of melanocytes</b> Pan Kang, Wei-Gang Zhang, Shu-Li Li, Xu-Guang Chen, Gang Wang, Tian-Wen Gao, Chun-Ying Li	
PO03-007	120
<b>ALA-PDT suppressing the cell growth by Akt-/Erk-mTOR-p70 s6k pathway in human SZ95 sebocytes in vitro</b> Jiang Tuo, Wen-Jie Liu	
PO03-008	120
<b>Downregulation of miR-633 activated AKT/mTOR pathway by targeting AKT1 in lupus CD4+ T cells</b> Shuang Chen, Jin-Hua Xu	
PO03-009	121
<b>Role of Nrf2 in modulating H2O2-induced oxidative stress and Nrf2 target antioxidant gene expression in human melanocytes</b> Qing-Rong Ni, Shu-Li Li, Ting-Ting Cui, Xiu-Li Yi, Pan Kang, Chun-Ying Li, Zhe Jian	
PO03-010	121
<b>Susceptibility of epithelial derived stationary tumor cells to hyperthermia</b> Zheng-Xiu Li, He-Xiao Wang, Xing-Hua Gao	
PO03-012	122
<b>Anti-Gal3 antibody induces skin vasculitis by promoting IL-1<math>\beta</math> production through NLRP3 pathway on endothelial cells in systemic lupus erythematosus</b> Zhen-Rui Shi, Liang-Chun Wang, Guo-Zhen Tan, Yu-Ping Zhang, Lin Zheng, Liu-Yu Chen	
PO03-016	122
<b>Cthrc1 plays bidirectional roles in the process of keloid by reversing the TGF-<math>\beta</math> signaling as a negative feedback factor and modulating YAP subcellular location</b> Mengjie Zhao, Si-Yuan Chen, Xiao- Qu, Bilal Abdul-fattah, Ting Lai, Meng Xie, Shi-Di Wu, You-Wen Zhou, Chang-Zheng Huang	
PO03-017	123
<b>IgE recognition of bullous pemphigoid (BP)180 and BP230 in senile atopic dermatitis patients with intense pruritus</b> Jing Sun	
PO03-018	124
<b>TNF-<math>\alpha</math> and TRAIL are potential inducers of necroptosis in HaCaT cells through activation of ROS</b> Yong-Sheng Yang, Yan-Hong Shou, Zhen Zhang, Xiao-Qun Luo, Sheng-An Chen, Feng Li, Xiao-Hua Zhu, Jin-Ran Lin, Hai-Hong Qin, Juan Du, Sun-Yi Chen, Jin-Hua Xu	
PO03-019	124
<b><math>\beta</math>-catenin activation in hair follicle dermal stem cells induces skin fibrosis and ectopic hair follicle</b> Gang Ma, Yi-xin Tao, Lin He	
PO03-020	124
<b>Study of cell phenotype and molecular mechanisms under different culture conditions</b> Yiming Li, Li-Dan Xiong, Jie Tang, Li Li	
PO03-022	125
<b>Influence of <i>Malassezia furfur</i> culture supernatant on <i>Staphylococcus epidermidis</i>: From the point of view of proteome, acetylome and succinylome</b> Yang Han, Rui-Qun Qi, Xing-Hua Gao	
PO03-023	125
<b>Expression and function of circRNAs in the senescence of human fibroblasts induced by UVB irradiation</b> Chen-Chen Si, Bing-Rong Zhou, Dan Luo	
PO03-024	126
<b>Serum exosomal shuttled miRNAs mediate intercellular communication and exosomes induce pro-inflammatory immune response in systemic lupus erythematosus</b> Li-Na Tan, Hai-Jing Wu, Ming Zhao, Qian-Jin Lu	

PO03-025	127
<b>Anti-inflammatory effect of quercetin in IFN-<math>\gamma</math>/TNF-<math>\alpha</math>-treated HaCaT cells</b>	
Dian-Dong Hou, Rui-Qun Qi, He-Xiao Wang, Yu-Zhe Sun, Hong-Duo Chen, Xing-Hua Gao	
PO03-026	127
<b>Paeoniflorin depresses human T lymphocytes activation via inhibition of I<math>\kappa</math>B<math>\alpha</math>-NF-<math>\kappa</math>B signaling pathways, p38 kinase phosphorylation and interferon-<math>\gamma</math> production</b>	
Ao-Xue Wang, Yun-Ying Zhang, Xiao-Yi Qi, Jing Wang, Yan-Nan Ma	
PO03-028	128
<b>Candida cell wall mannoprotein synergizes with LPS to induce RAW264.7 inflammation through the jak2 / stat3 signaling pathway</b>	
Xing-Xing Bie, Rui-Qun Qi, Xing-Hua Gao, Hong-Duo Chen	
PO03-029	128
<b>Carbamazepine-10, 11-epoxide activates AhR-MLKL to induce NLRP3 inflammasome upregulation in keratinocytes and regulate CD8+ T-cell skin trafficking in SJS and TEN</b>	
Chen Zhang, Gang Wang, Meng Fu	
PO03-030	129
<b>Changes of cathepsins in hair follicle cycle</b>	
Yue Zheng, Jing-Zhu Bai, Wei Lai	
PO03-031	129
<b>Autophagic effect of UVB on SLE and the role of miR-125b-5p in this process</b>	
Wenting Cao, Dan-Qi Deng	
PO03-032	130
<b>DNAJA4 deficiency enhances NF-kappa B-related growth arrest induced by hyperthermia in human keratinocytes</b>	
Yu-Zhe Sun	
PO03-033	131
<b>Oxidative stress induced melanocytes release of HMGB1 is critical for keratinocyte production of IL8 and CXCL16 in vitiligo</b>	
Tingting Cui	
PO03-034	131
<b>Study on blood levels and clinical significance of IL-36 subfamily cytokines in patients with systemic lupus erythematosus</b>	
Shaozhen Mai, Qing Guo	
PO03-036	132
<b>Concomitant NOTCH1 and TP53 (p53) expression in HPV positive/negative epithelial cells during hyperthermia</b>	
Rui-Qun Qi	
PO03-037	132
<b>Sirt3-induced macrophage polarization through autophagy in promoting <i>Mycobacterium leprae</i> latent infection</b>	
De-Gang Yang, Yue-Long Ma, Qin Pei	
PO03-038	133
<b>Interaction of Cathepsins and non-coding RNA in human skin photoaging mechanisms</b>	
Yue Zheng, Wei Lai, Ya- Peng	
PO03-043	133
<b>Research progress on the effect of light on stem cell differentiation</b>	
Mingzhu Jin	
PO03-044	134
<b>Mechanism of SO<sub>2</sub>-induced oxidative and inflammatory injury in human skin keratinocytes</b>	
Junqin Liang	
PO03-045	134
<b>Expression of thermoTRPs in melanoma cells and the influence of menthol and 2-APB on cell proliferation and cell cycle of A2058 cells</b>	
Xue-Jing Tan, Wei Cheng, Fang Liu	

PO03-046	135
<b>Inhibition of the hedgehog pathway leads to antifibrotic effects in dermal fibrosis</b> Huali Cao, Jiong Zhou, Xi-Bei Chen, Jian-Qiang Yang, Jia-Qi Chen, Wei Li, Sui-Qing Cai, Min Zheng, Xiao-Yong Man	
PO03-047	135
<b>Effects of active ingredients of Chinese safflower on melanogenesis in human melanoma cells</b> Caixia Tu, Ting Wang, Rongxin Zhang, Yahui Chen	
PO03-048	136
<b>Rottlerin as a therapeutic approach in psoriasis: Evidence from in vitro and in vivo studies</b> Min Min, Bing-Xi Yan, Ping Wang, Jia-Qi Chen, Wei Li, Sui-Qing Cai, Min Zheng, Xiao-Yong Man	
PO03-049	136
<b>Comparative expression of PEDF and VEGF in human epidermal keratinocytes and dermal fibroblasts: from normal skin to psoriasis.</b> Bing-Xi Yan, Yu-Xin Zheng, Wei Li, Jia-Qi Chen, Jiong Zhou, Sui-Qing Cai, Min Zheng, Xiao-Yong Man	
PO03-050	137
<b>Molecular mechanisms of BCL6 regulating miR-142-3p/5p expression in CD4+ T cells and its role in the pathogenesis of systemic lupus erythematosus</b> Shu Ding, Qing Zhang, Shuang-Yan Luo, Qing-Hai Zeng, Li-Na Tan, Jin-Rong Zeng, Ming Zhao, Qian-Jin Lu	
PO03-051	137
<b>Suppressor of fused inhibits skin wound healing</b> Bei-bei Yang, Bing-Xi Yan, Hua-Li Cao, Jia-Qi Chen, Wei Li, Min Min, Ping Wang, Sui-Qing Cai, Min Zheng, Xiao-Yong Man	
PO03-052	138
<b>Study on the role of ACTL6a in psoriasis and wound</b> Bing-Xi Yan, Min Min, Bei-Bei Yang, Ping Wang, Jia-Qi Chen, Wei Li, Sui-Qing Cai, Min Zheng, Xiao-Yong Man	
PO03-053	139
<b>Mechanical tension enhances cell proliferation and collagen synthesis and promotes expressions of integrin <math>\alpha\beta3</math> in Human keloid-derived mesenchymal stem cells</b> Hai-feng Song, Tao Liu, Wen-ting Wang, Ya-Jie Lv, Tian-Yu Cao, Yan-Guo Zhang	
PO03-054	139
<b>6-Hydroxydopamine promotes keratinocyte damage and depigmentation in mouse.</b> Cuiping Guan , Wen Xu, Liu-Yu Li, Ai-E Xu	
PO03-056	140
<b>An improved method for detecting varicella-zoster virus and the preliminary application</b> Tingting Zhong, Yang Xu	
PO03-057	140
<b>Effects and mechanism of SPRY1 on the innate immunity system in psoriasis</b> Ping Wang, Yuan Zhou, Min Zheng, Xiao-Yong Man	
PO03-058	141
<b>Expression of death receptor 3 (DR3) on peripheral blood mononuclear cells in patients with psoriasis vulgaris</b> Lin Li	
PO03-059	141
<b>Total glucosides of paeony restores CD4+CD25+Treg cells through demethylation of the foxp3 promoter region in patients with Henoch-Schonlein purpura</b> Ye Shu, Rong Xiao	
PO03-060	142
<b>Investigation of 5-Fluorouracil and Ultraviolet B co-inducing lupus-like mouse model and its molecular mechanisms</b> Ya-Xiong Den, Di Long, Hai-Jing Wu, Qian-Jin Lu	

PO03-061	142
<b>Pathogenic role of 5-hydroxymethylcytosine in skin lesions of lupus</b>	
Qianwen Li	
PO03-062	143
<b>Identification and validation of differential expressed proteins in serum of chronic spontaneous urticaria patients with different duration of wheals</b>	
Yan-Yun Cao, Shun-Ming Xu	
PO03-065	143
<b>Ganoderma lucidum polysaccharides reduce melanocytes melanogenesis by inhibiting paracrine effect of keratinocytes and fibroblasts via IL6/ STAT3/FGF2 signaling pathway</b>	
Ling Jiang, Jin-Hua Huang, Jian-Yun Lu, Shuang-Hai Hu, Shi-Yao Pei, Yu-Jie Ou Yang, Yu-Fang Ding, Chu-Han Fu, Qing-Hai Zeng, Jing Chen	
PO03-066	144
<b>Salvianolic acid B attenuates experimental SSc inflammation and fibrosis by protecting endothelial cells against oxidative stress injury</b>	
Qing-Mei Liu, Xiang-Guang Shi, Lu-Yan Tang, Jia-Ying Lu, Jin-Hua Xu, Jiu-Cun Wang, Wen-Yu Wu	
PO03-068	144
<b>Study on anti-fibrotic mechanism of salvianolic acid B</b>	
Jiaying Lu	
PO03-069	145
<b>NLRP3 inflammasome mediated interleukin-1beta production in cancer-associated fibroblast contributes to ALA-PDT for Cutaneous squamous cell carcinoma</b>	
Shu Nie, Shan-shan Li, Guo-Long Zhang, Jie Ji, Lu-De Zhu, Pei-Ru Wang, Xiu-Li Wang, Hong-Wei Wang	
PO03-070	145
<b>Effect of 4-hydroxyphenyl-retinamide on type I pro-collagen and MMP-1 mRNA expression of keloid fibroblasts</b>	
Mei-lan Nan, Zhe-Hu Jin, Cheng-Long Jin	
PO03-072	146
<b>Photothermal-photodynamic therapy induced by Au<sub>25</sub>(Capt)<sub>18</sub>-nanocluster under single NIR irradiation for the treatment of cutaneous squamous cell carcinoma</b>	
Pei Liu, Lei Shi, Hai-Yan Zhang, Fu-He Zhang, Long Wen, Wei-Tao Yang, Jia-Ni Yu, Bing-Bo Zhang, Xiu-Li Wang	
PO03-073	146
<b>Tranexamic acid suppresses the activity of epidermal melanocytes of mice after ultraviolet B ear irradiation</b>	
Zhuren Ruan, Shan Jiang	
PO03-074	147
<b>Short-term ozone exposure stimulates insulin growth factor receptor (IGF1R) and epidermal growth factor receptor (EGFR) crosstalk to promote diabetic wound healing</b>	
Jian-Yun Lu, Xiao-Qi Wang, Li-Hua Gao, Jin-Hua Huang, Amy Paller	
PO03-075	147
<b>Ozonated oil suppresses and ameliorates allergic contact dermatitis induced by 2, 4-dinitrochlorobenzene in guinea pig</b>	
Jian-Yun Lu, Zhi-Bing Fu, Jie Zhang, Ya-Ping Xiang, Li-Hua Gao, Xiao-Qi Wang	
PO03-076	148
<b>Up regulation of <math>\beta</math>-catenin delay UVB-induced senescence in human skin fibroblasts by antioxidant stress and suppressing p16INK4a</b>	
Li-Ming Tian	
PO03-078	148
<b>Treatment and mechanism of alpha 1 antitrypsin on guinea pig skin photoaging model</b>	
Chunli Yao, Xue Li, Shuang Wang	
PO03-079	149
<b>Expression of IL-17 in different organs of MRL/lpr mice</b>	
Lihua Zeng, Xue-Biao Peng	

PO03-080	149
<b>Expression of IL-17-producing T lymphocytes in peripheral blood of patients with systemic lupus erythematosus and their correlations with disease activity</b>	
Lihua Zeng, Xue-Biao Peng	
PO03-082	150
<b>Long noncoding RNA associated-competing endogenous RNAs in UVB-induced premature senescence of human dermal fibroblasts</b>	
Na Ni, Dan Luo	
PO03-083	150
<b>Langerhans cells, dermal Langerin(+) dendritic cells and monocyte-derived dendritic cells contribute differentially to atopic dermatitis in mice via modulating TSLP production in early stage</b>	
Zhen-Lai Zhu, Chun-Ying Xiao, Chen Zhang, Er-Le Dang, Yu-Feng Liu, Gang Wang, Wei Li	
PO03-084	151
<b>Study of correlation between HLA allele and leprosy in Guizhou province</b>	
Jie Fang	
PO03-085	151
<b>Study on mechanism of atenolol in treatment of infantile hemangioma</b>	
Keyao Li, Jian-Ping Tang	
PO03-086	151
<b>Effect and mechanism of IL-33 on skin wound healing in diabetic mice</b>	
Rong-Guo He, Kang Zeng	
PO03-087	152
<b>Comparison of the effect of propranolol and itraconazole on biological behavior of HUVEC</b>	
Yi Zhao, Hong Liang	
PO03-090	152
<b>Pruritus: progress toward pathogenesis and treatment</b>	
Jing Song, Jian-Qiao Zhong, Xia Xiong, De-Hai Xian, Rui Lai, Ling-Yu Yang	
PO03-091	153
<b>Mechanism about treatment of nourishing the liver and kidney to regulate melanocyte apoptosis induced by oxidative damage</b>	
Hui-Na Zhang, Chang-Liang Mao, Ping Li, Ju-Sheng Wang	
PO03-092	154
<b>miRs-103/107 regulate autophagy in the epidermis</b>	
Sijia Wang	
PO03-095	154
<b>Serum levels of brain-derived neurotrophic factor are associated with depressive symptoms in patients with acne vulgaris</b>	
Hong-yi He, Yong-qiong Deng, Yong-mei Liao, Deng-mei Xia, Ai-guo Xu, Jing Fang, Jin-lan Tian, Yang Xu, Chang-qiang Li	
PO03-096	155
<b>Regulation of hair follicle development by exosomes derived from dermal papilla cells</b>	
Lijuan Zhou, Zhong-Fa Lyu	
PO03-097	155
<b>IL-17R adaptor Act1 D10N missense variant impairs CD40 signaling in human B-cells</b>	
Ning Yu, James	
PO03-098	156
<b>Long Noncoding RNA RP11-670E13.6 Activate DAG/PKC Signaling pathway by inhibiting Diacylglycerol kinase epsilon expression in UVB Damaged Human Dermal Fibroblasts</b>	
Mengna Li	
PO03-099	156
<b>Toll-like receptor 4 attenuates a murine model of atopic dermatitis through inhibition of langerin-positive DCs migration</b>	
Lin Lin, Le-Dong Sun	

PO03-100	157
<b>Diclofenac potentiates vemurafenib-induced apoptosis in human melanoma cells</b> Zheng Li	
PO03-101	157
<b>LncRNA UCA1 inhibits the melanogenesis by inhibiting cAMP/CREB signaling pathway.</b> Shi-Yao Pei, Jing Chen, Jian-Yun Lu, Shuang-Hai Hu, Ling Jiang, Yu-Jie Ouyang, Chu-Han Fu, Yu-Fang Ding, Qing-Hai Zeng, Jin-Hua Huang	
PO03-102	158
<b>Dendrobium candidum polysaccharide stimulates melanocytes melanogenesis by paracrine effect of keratinocytes and activate cAMP/PKA and MAPK signaling pathway</b> Shuanghai Hu, Jin-Hua Huang, Jian-Yun Lu, Ling Jiang, Shi-Yao Pei, Yu-Jie Ouyang, Yu-Fang Ding, Qing-Hai Zeng, Jing Chen	
PO03-103	158
<b>Establishment of SPINK6 knockout mouse model</b> Rong-Bing Zheng, Yuan-Yuan Wu, Jia-Yi Shen, Dan Li, Xiao-Xiao Chen, Fang-Yuan Bao, Wei-Jun Xia, Zhi-Hong Wu	
PO03-104	159
<b>Establishing filaggrin-2 gene knockout mice</b> Yuan-Yuan Wu, Rong-Bing Zheng, Jia-Yi Shen, Dan Li, Xiao-Xiao Chen, Fang-Yuan Bao, Wei-Jun Xia, Zhi-Hong Wu	
PO03-106	159
<b>TUG1 negatively regulates melanogenesis</b> Chu-Han Fu, Qing-Hai Zeng, Jin-Hua Huang, Shi-Yao Pei, Yu-Jie Ouyang, Shuang-Hai Hu, Ling Jiang, Yu-Fang Ding	
PO03-107	160
<b>Traditional Chinese medicine SK promotes wound healing by up regulation of TGF-<math>\beta</math>1 expression</b> Yufang Ding, Jinhua Huang, Shuanghai Hu, Ling Jiang, Aiyuan Guo, Chuhan Fu, Shiyao Pei, Yujie Ouyang, Xiaojiao Zhao, Li Lei, Jing Chen, Qinghai Zeng	
PO03-108	160
<b>Therapeutic role of Sphingosine Kinase 1 (sphk1) inhibitor in the passive cutaneous anaphylaxis (PCA) model</b> Si Yan, Wang-Qing Chen, Ni Tang, Man-Yun Mao, Jie Li, Xiang Chen	
PO03-109	161
<b>Network integration of parallel metabolic and transcriptional data reveals metabolic modules in azithromycin induced macrophage M2 polarization</b> Jiu Yi	
<i>PO04 Benign and Malignant Tumors</i>	
PO04-006	161
<b>A case of HMB-45 and Melan-A negative melanoma</b> Won Choi, Kyoung Geun Lee, Joon Soo Lim, Ki Bum Myung, Hyung Jin Hahn, Seung Hyun Cheong	
PO04-007	162
<b>A case of trichoblastoma with plasma cell infiltration</b> Won Choi, Kyoung Geun Lee, Joon Soo Lim, Ki Bum Myung, Hyung Jin Hahn, Seung Hyun Cheong	
PO04-008	162
<b>A case of adenoid type basal cell carcinoma on philtrum</b> Won Choi, Kyoung Geun Lee, Joon Soo Lim, Ki Bum Myung, Seung Hyun Cheong, Hyung Jin Hahn	
PO04-009	162
<b>A case of extramammary Paget's disease restored with modified keystone flap</b> Minsung Kim, Hoon Choi, Bongseok Shin, Chanho Na	

PO04-021	163
<b>Epidermodysplasia verruciformis associated multiple sweat gland tumors and squamous cell carcinomas</b>	
Young Wook Ko	
PO04-022	163
<b>Primitive non-neural granular cell tumor: S-100-negative granular cell tumor</b>	
Dong Seok Shin	
PO04-023	164
<b>Acantholytic mammary Paget's disease with ductal carcinoma <i>in situ</i></b>	
Joung Soo Kim, Ju Wang Jang, Dong Uk Cheon, Sung Soo Han, Hyun-Min Seo, Hee Joon Yu	
PO04-024	164
<b>Clinical study of basal cell carcinoma developed in young adults</b>	
Min-Jeong Kang, Joong-Woon Choi, Ye-Jin Lee, Bark-Lynn Lew, Woo-Young Sim	
PO04-025	165
<b>Molluscum contagiosum occurring in an epidermal cyst developed on frontal hairline</b>	
Sang-Myung Park, Joong-Yoon Choi, Ye-Jin Lee, Bark-Lynn Lew, Woo-Young Sim	
PO04-029	165
<b>CD34 stromal expression is inversely proportional to smooth muscle actin expression and extent of morphea</b>	
Ji Su Lee, Hyun-sun Park, Hyun-Sun Yoon, Jin Ho Chung, Soyun Cho	
PO04-030	166
<b>Angioimmunoblastic T cell lymphoma presenting as Henoch-Schonlein purpura</b>	
Jun Young Lee, Yeong Ho Kim, Seung Ah Yoo, Hyo Jung Kim, Hyun Ji Lee, Yu Mee Song, Ju Hee Han, Chul Hwan Bang, Ji Hyun Lee, Young Min Park	
PO04-032	166
<b>Two cases of lymphomatoid papulosis type D</b>	
Yeong Ho Kim, Yu Mee Song, Hyo Jung Kim, Hyun Ji Lee, Ju Hee Han, Chul Hwan Bang, Ji Hyun Lee, Young Min Park, Jun Young Lee	
PO04-036	167
<b>Two cases of HPV-positive Bowen's disease of nail unit</b>	
Young Min Park, Yeong Ho Kim, Jae Yeon Ryu, Hyun Ji Lee, Yu Mee Song, Ju Hee Han, Chul Hwan Bang, Ji Hyun Lee, Jun Young Lee	
PO04-037	167
<b>A case of extraskeletal chondroma developed on the neck, an unusual location</b>	
Young Min Park, Yeong Ho Kim, Jae Yeon Ryu, Ju Hee Han, Chul Hwan Bang, Ji Hyun Lee, Jun Young Lee	
PO04-060	168
<b>A case of cutaneous interdigitating dendritic cell sarcoma</b>	
Jin Young Song, Kyung Muk Jeong, Yoo Sang Baek, Jiehyun Jeon, Chil Hwan Oh, Hae Jun Song	
PO04-062	168
<b>Solitary juvenile xanthogranuloma: Clinical and dermoscopic findings</b>	
Dae-Lyong Ha, Tae-wook Kim, Sung-min Park, Hyun-joo Lee, Gun-Wook Kim, Hoon-Soo Kim, Hyun-Chang Ko, Byung-Soo Kim, Moon-Bum Kim	
PO04-063	169
<b>Large infantile hemangioma on subfacial location: It may have features of the malignancy on clinical &amp; radiologic findings?</b>	
Hoon-Soo Kim, Dae-Lyong Ha, Woo-Il Kim, Won-Ku Lee, Tae-Wook Kim, Sung-min Park, Hyun-Joo Lee, Gun-Wook Kim, Byung-Soo Kim, Moon-Bum Kim	
PO04-075	169
<b>Pedunculation in squamous cell carcinoma: Is this a predictive factor of less invasiveness?</b>	
Hoon-Soo Kim, Kyung-Nam Bae, Woo-Il Kim, Min-Young Yang, Won-Ku Lee, Tae-Wook Kim, Sung-Min Park, Hyun-Joo Lee, Gun-Wook Kim, Hyun-Chang Ko, Byung-Soo Kim, Moon-Bum Kim	

PO04-076	170
<b>Three zone of purple, red and white patch, a characteristic dermoscopic sign for glomus tumor</b> Geun-Hwi Park, Woo-Haing Sim, Woo-Il Kim, Min-Young Yang, Won-Ku Lee, Tae-Wook Kim, Sung-Min Park, Hyun-Joo Lee, Gun-Wook Kim, Hoon-Soo Kim, Hyung-Chang Ko, Byung-Soo Kim, Moon-Bum Kim	
PO04-077	170
<b>A case of lymphangioma like kaposi sarcoma</b> Chan-Yang Lee, Ye-Jin Lee, Hyung-Jin Park, Hye-Jin Ahn, Min Kyung Shin, Ki-Heon Jeong	
PO04-079	171
<b>Solitary folliculotropic mycosis fungoides presenting as a nodule on the forehead in a young female patient</b> Jiyun Seo, Seung Hwi Kwon, Jiehyun Jeon, Hae Jun Song, Chil Hwan Oh, Yoo Sang Baek	
PO04-108	171
<b>Two cases of congenital Becker's nevus presenting only linear hypertrichosis in children</b> Hyun-Bin Kwak, Eui-Sung Jung, Seok-Kweon Yun, Han-Uk Kim, Jin Park	
PO04-110	172
<b>Three prognostic factors in human melanoma: PD-L1 expression is associated with M2 macrophage infiltration but not with stromal periostin.</b> Fumitaka Ohno, Takeshi Nakahara, Masutaka Furue	
PO04-112	172
<b>Long-term observation of dermoscopic findings in patients with infantile hemangioma</b> Jinnin Masatoshi, Satoshi Fukushima, Hironobu Ihn2	
PO04-114	173
<b>A case of metastatic angiosarcoma on the abdominal wall following pelvic lymph node dissection</b> Hwee Chyen Lee	
PO04-119	173
<b>Cytotoxic mycosis fungoides with clinical features of hypopigmentation and poikiloderma at the same time</b> Shinwon Hwang, Jaemin Kim, Sun Och Yoon, Sang Ho Oh	
PO04-120	174
<b>A case of virginal malignant melanoma treated with Mohs paste therapy</b> Ryo Saito, Mikio Kawai, Kayoko Hirakawa, Michihiro Hide	
PO04-122	174
<b>Successful treatment of mycosis fungoides with mogamulizumab: Report of two cases.</b> Chunbing Lyu, Taku Fujimura, Yumi Kambayashi, Kayo Tanita, Yota Sato, Akira Hashimoto, Setsuya Aiba	
PO04-125	174
<b>Langerhans cell sarcoma on the shoulder</b> Hirofumi Niwa	
PO04-127	175
<b>An extradigital glomus tumor on the back mimicking keloid scar</b> Ha Neul Oh, Sook In Ryu, Bo Young Kim, Ji Hyun Park, Sang Wook Son, Il-Hwan Kim, Hye Rim Moon	
PO04-130	175
<b>A case of cutaneous dermoid cysts on the eyebrow and the neck</b> Koji Nakajima, Mika Takahashi, Ayumi Korekawa, Eijiro Akasaka, Daiki Rokunohe, Takahide Kaneko, Hajime Nakano, Daisuke Sawamura	
PO04-142	176
<b>A case of the rapidly growing fibro-osseous pseudotumor of the digit after trauma</b> In Soon Jung, Sook Jung Yun	
PO04-143	176
<b>Basal cell carcinoma in the genital areas: a report of 11 cases</b> Takashi Ito, Mikio Otuka, Toshiyuki Yamamoto	

PO04-144	176
<b>Thirteen cases of nodular cystic fat necrosis</b> Shohei Igari, Toshiyuki Yamamoto	
PO04-145	177
<b>An unusual case of lymphomatoid papulosis showing histological features of both type D and type E</b> Mikio Ohtsuka, Toshiyuki Yamamoto	
PO04-048	177
<b>Aneurysmal fibrous histiocytoma: clinicopathology analysis of 30 cases of a rare variant of cutaneous fibrohistiocytoma</b> Amelia Nabatanzi	
PO04-109	178
<b>Fifteen cases of pilomatricoma with bullous appearance in children: analysis of the clinical and pathological features</b> Juan Sun, Xiao-Feng Han, Jiao-Sheng Xu, Lin Ma	
PO04-115	178
<b>A case of classical kaposi sarcoma in young men</b> Mei-Ni Deng, Ming-Kai Ji, Bo Cheng	
PO04-135	178
<b>Diagnostic value of immunohistochemical E2-2 expression in blastic plasmacytoid dendritic cell neoplasm (BPDCN)</b> Jing-Shu Xiong, Hai-Sheng Yu, Hao Chen, Xiu-Lian Xu, Wei Zhang, Yi-Qun Jiang, Li-Guo Zhang, Jian-Fang Sun	
PO04-049	179
<b>Extramammary Paget disease: female is more affected than is male?</b> Yi-Guo Feng, Yan Zheng, Song-Mei Geng	
PO04-146	179
<b>Cutaneous and hepatic hemangioma associated with Kasabach-Merritt syndrome in an adult patient with discoid lupus erythematosus</b> Wei Gao, Hong-Sheng Wang	
PO04-002	180
<b>A rare case of sebaceous adenoma on the face and its dermoscopic features</b> Yi-Xin Luo, Jie Liu, Hua Feng	
PO04-001	180
<b>Retrospective reviews of 34 cases of microscopic excision of digital glomus tumor</b> Jian-Bo Zhong, Ping Yang, Li-Ming Wu	
PO04-003	180
<b>Efficacy and safety of interferon-alpha-2a intralesional injection for the treatment of focally recalcitrant mycosis fungoides</b> Shi-Yu Zhang, Da-Wei Han, Tao Wang, Yue-Hua Liu, Hong-Zhong Jin, Kai Fang	
PO04-004	181
<b>TWEAK/Fn14 interaction confers aggressive properties to cutaneous squamous cell carcinoma</b> Guang-Lei Hu, Yu-Min Xia, Wei-Hui Zeng, Li-Li Liang, Ya-Le Liu	
PO04-005	181
<b>Granular cell tumor of skin: presenting as a task</b> Min Wang	
PO04-010	182
<b>Expression and significance of TIPE1 in skin squamous-cell carcinoma</b> Yan Zheng, Pei-Wen Yang, Chang-Ji Li	
PO04-011	182
<b>Skin metastases of lung cancer as the first sign: a case report and review</b> Si Zhang, Xiao-Yang Liu, Heng Zhang, Jun Jia, Lin Cai	

PO04-012	183
<b>Synergistic targeted chemo-photothermal therapy mediated by pH-triggered controlled drug release from ZnO-functionalized Gold@Mesoporous silica to elicit antitumor immunity and inhibit progression of melanoma</b>	
Ya-Min Zhang, Jin-Tao Zhu, Juan Tao	
PO04-013	183
<b>Leclercia adecarboxylata in a patient with malignant solitary fibrous tumor</b>	
Wei-Tao Zhang, Peng-Jun Zhou, Yan-Fei Zhang	
PO04-014	184
<b>Vulvar edema: a sign of metastatic carcinoma</b>	
Yan-Fei Zhang, Tong Xiao, Yi-Guo Feng	
PO04-015	184
<b>Mycosis fungoides palmaris et plantaris: Clinicopathological study and comparison between the Asian and Western patients</b>	
Meng-Jie Zhao, Bilal Abdul-fattah, Yun Zhao, Ling-Yun Zhang, Si-Yuan Chen, Li Zhu, Chang-Zheng Huang	
PO04-016	185
<b>A case of cutaneous plasmacytosis</b>	
Si Zhang, Wen-Hai Li, Yan Zhao, Lin Cai	
PO04-017	185
<b>A case reported of hypopigmented mycosis fungoides in a middle-aged woman misdiagnosed as tinea versicolor</b>	
Guan-Nan Zhu, Meng Fu, Gang Wang	
PO04-018	186
<b>Diagnosis of subclinical extramammary Paget's disease with a combination of non-invasive photodynamic diagnosis and reflectance confocal microscopy: A case report</b>	
Li-Ming Huang, Min-Zhi Wu, Liang Zhao	
PO04-019	186
<b>A case of clear cell acanthoma</b>	
Liang Sun	
PO04-020	186
<b>Study of Mohs microsurgery modified by photodynamic diagnosis combined with ultrasonography to treat extramammary Paget's Disease</b>	
Jia-Ning Yang, Geng-Wu Dai, Dong-Mei Wu, Chuan-Peng Ying	
PO04-027	187
<b>Superficial angiofibroma of the scrotum in a child: A case report and literature review</b>	
Qi Wang, Kuan Lai, Yan Gao, Xin-Yao Zheng, Hai-Mei Lan, Kang Zeng	
PO04-028	187
<b>ATP-citrate lyase contributes to melanoma growth and MAPK inhibition resistance by regulating P300-MITF-PGC1<math>\alpha</math> signaling and mitochondrial function</b>	
Wei-Nan Guo, Jin-Yuan Ma, Sen Guo, Hui-Na Wang, Shi-Yu Wang, Tian-Wen Gao, Chun-Ying Li	
PO04-031	188
<b>Clinicopathological and immunohistochemical analysis of the outpatients diagnosed with tufted angioma at Xijing Hospital</b>	
Xin Su, Qi-Wen Lai, Lei Wang, Cui-Ling Ma	
PO04-033	188
<b>Role of cathepsin D in human skin melanocytes and skin melanoma cells</b>	
Yue Zheng, Qing-Fang Xu, Yun-Fen Huang, Wei Lai	
PO04-034	189
<b>Oncogenomic analysis identifies novel biomarkers for tumor stage mycosis fungoides</b>	
Zheng-Bang Dong, lu Gan, Jian-Fang Sun	
PO04-035	189
<b>Hydroa vacciniforme-like lymphoma: a case report</b>	
Rong-Yi Chen, Hui-Zhi Yang, Wei Wu	

PO04-038	190
<b>Clinical and pathological analysis of 10 patients with microcystic adnexal carcinoma</b> Ying Zhang, Hao Chen, Wei Zhang, Xiu-Lian Xu, Yi-Qun Jiang, Xue-Si Zeng, Jian-Fang Sun	
PO04-039	190
<b>Two cases of metastatic breast cancer with special skin manifestations</b> Yan-Yan Feng	
PO04-040	190
<b>Rosai-Dorfman disease presenting with auricular enlargement as the first manifestation</b> Lu Gan, Wan-Ting Yu, Jian-Fang Sun, Yi-Qun Jiang, Wei-Da Liu	
PO04-041	191
<b>Lymphomatoid papulosis type D: Case reports and literature review</b> Hao-Ze Shi, Hai-Lun Wang, Jing-Shu Xiong, Hao Chen, Jian-Fang Sun	
PO04-042	191
<b>Cutaneous schwannoma on the back with a targetoid clinical feature</b> Li-Qiang Zheng, Wei Ba, Cui-Hao Song, Cheng-Xin Li	
PO04-043	192
<b>One case of primary cutaneous follicle center lymphoma</b> Min Hang, Feng-Mei Zhao, Song Zheng, Bo Li, Long Geng	
PO04-044	192
<b>A case of generalized eruptive histiocytoma</b> Jian-Xin Xia	
PO04-045	192
<b>A case of hepatocellular carcinoma diagnosed as facial cutaneous metastasis survives for 18 months</b> Jing-Xin Zeng, Xi-Bao Zhang, Quan Luo, Hui-Lan Zhu	
PO04-046	193
<b>A case of multiple clear cell acanthoma</b> Sha Zhou, Jian-Jun Qiao, Juan Bai, Yin-Hua Wu, Yun-Lei Pan, Si-Ting Zheng, Hong Fang	
PO04-047	193
<b>Skin metastasis of breast carcinoma a case report</b> Jun-Qin Liang, Wen-Jing Chen	
PO04-050	193
<b>A case of mycosis fungoides in late adolescent</b> Cai-Xia TU, Xiu-Hua Sun, Chao Yu, Xin-Di Mu	
PO04-051	194
<b>A subungual squamous cell carcinoma of the thumb clinically mimicking a glomus tumour</b> Xiu-Fen zheng, Ren-Liang He	
PO04-052	194
<b>Eccrine angiomatous hamartoma with plexiform vascular hyperplasia</b> Qian Shang, Hong-Mei Zhou, Qiang Zhao, Song-Mei Geng	
PO04-053	195
<b>Rosai-Dorfman disease with systemic multiple involvement: A case report.</b> Jiang-Fan Yu, Bing-Si Tang, Ya-Qian Shi, Pu-Yu Zou, Gui-Ying Zhang, Rong Xiao	
PO04-054	195
<b>Influence of acitretin on the growth and apoptosis of fibroblasts of keloid</b> Da-Wei Zhang	
PO04-055	196
<b>Lymphomatoid papulosis with folliculotropism, eccrinotropism and neurotropism</b> Wei Ba, Cheng-Xin Li	
PO04-056	196
<b>A misdiagnosed case of cutaneous Rosai-Dorfman disease</b> Yi-Ming Wang	
PO04-057	196
<b>Clinical and pathological analysis of 19 mycosis fungoides</b> Ling-Yi Zhao, Hui Tang	

PO04-058	197
<b>Squamous cell carcinoma combined with basal cell carcinoma: A case report</b> Yi Zhou	
PO04-059	197
<b>A case report of blastic plasmacytoid dendritic cell neoplasm</b> Yi-Ming Wang	
PO04-061	197
<b>Clinical and pathological analysis of arteriovenous hemangiomas in 13 cases</b> Tian Wang, Ying Guo, Zhuang-Li Tang, Song-Mei Geng	
PO04-064	198
<b>Clinical and pathological study on mixed tumors of the skin</b> Hui-Ying Wan, Chao-Qun Wang	
PO04-065	198
<b>Effects of RNA interference targeting <i>hTERT</i> gene on the proliferation of the human malignant melanoma cell line A375</b> Xiao-Jing Kang, Zulihumaer Mosha, Li Chai, Juan Zhao, Ting-Ting Li, Hong-Juan Wang	
PO04-066	199
<b>Two cases of primary osteoma cutis occurring in children</b> Cui-hao Song, Li-Qiang Zheng, Zi-Gang Zhao, Cheng-Xin Li	
PO04-067	199
<b>Paget's disease of scrotum: Three cases report</b> Xue Chen, Xiao-Yong Man	
PO04-068	200
<b>Natural killer/T-cell lymphoma with hemophagocytic syndrome: A case report</b> Shuo-Shuo Liu, Jian-Zhong Zhang	
PO04-069	200
<b>Solitary Eccrine Syringofibroadenoma of dorsum manus</b> Pei-Mei Zhou	
PO04-070	200
<b>Trichofolliculoma: A clinicopathological analysis of nine cases</b> Qing-Yan Li, Li-Hong Zhao, Song-Mei Geng	
PO04-071	201
<b>SFRP5 inhibits the invasion and migration potential of melanoma cells through Wnt signal pathway</b> Jin Chen, Yang-Mei Chen, Yu Liu, Dao-Pei Zou	
PO04-072	201
<b>Treatment of the ear giant keratoacanthoma with topical imiquimod</b> Shi-Jun Shan	
PO04-073	202
<b>A case of perineal polypoid basal cell carcinoma and review of the literature</b> Xue-Yan Yao, Yan Zhao, Guang-Dong Wen, Jian-Zhong Zhang, Cheng Zhou	
PO04-074	202
<b>Implication of glutathione peroxidase 3 expression in pathogenesis of melanoma</b> Zhehu Jin, Zhen-Long Zheng, Cheng-Long Jin, Lian-Hua Zhu, Ying-Ji Jin, Peng Wang, Lian-Hua Li	
PO04-078	202
<b>Multiple keratoacanthoma centrifugum marginatum: A case report and systemic literature review</b> Yi-Man Wang, Li Li	
PO04-080	203
<b>Study of clinical features, treatment and miRNA expression characteristics of unilesional mycosis fungoides</b> Zai-Yue Shu, Xiao-Yan Shen, Jie Zheng	
PO04-081	203
<b>Three cases report of blastic plasmacytoid dendritic cell neoplasm</b> Xian-Hua Jin, Jian-Xin Xia, Li Chang, Xin-Yi Huang	

PO04-082	204
<b>Giant ulcer type basal cell carcinoma</b> Si-Jian Wen, Yan-Ping Chi, Ting Guo, Wen-Jun Zheng, You-Kun Lin	
PO04-083	204
<b>Photodynamic combined operation for the treatment of skin tumors</b> Wen-Bo Bu, Fang Fang	
PO04-084	204
<b>Eccrine angiokeratomatous hamartoma: A case report</b> Jin-Wen Huang, Chao Ji, Min Lin, Jing Zhang, Ming-Kai Ji, Bo Cheng	
PO04-085	205
<b>A case of simple lymphangioma</b> Min Lin, Jin-Wen Huang, Jing Zhang, Chao Ji, Bo Cheng	
PO04-086	205
<b>A case of cutaneous mastocytoma</b> Min Lin, Jin-wen Huang, Jing Zhang, Chao Ji, Bo Cheng	
PO04-087	205
<b>First reported S-100 negative myxoid neurothekeoma in China: A case report and review of the literatures</b> Jing Zhang, Ming-Kai Ji, Chun-Yan Guo, Chao Ji, Bo Cheng, Jin-Wen Huang	
PO04-088	206
<b>Eight cases of melanoma resection with the width of the cutting edge greater than 2 cm</b> Kai Huang, Shuang Zhao, Jin-Mao Li, Jiang-Lin Zhang, Jun-Jie Luo, Ming-Liang Chen, Li-Xia Lu, Fang-Fang Li, Juan Su, Xiang Chen	
PO04-089	206
<b>A case of diffuse of primary cutaneous diffuse large B-cell lymphoma, leg type</b> Yu Guan, Chao Ji	
PO04-090	206
<b>A case of morpheaform basal cell carcinoma</b> Meng-Ting Lin, Chao Ji, Zi-Ping Zhang, Bo Cheng	
PO04-091	207
<b>Inverted follicular keratosis with prominent clear cell changes: A rare case</b> Jing Zhang, Chao Ji, Bo Cheng, Jin-Wen Huang, Meng-Ting Lin	
PO04-092	207
<b>A case of urticaria pigmentosa limited to forehead</b> Suo Li, Sui-Ying Feng, Zhi-Liang Li, Ke Jing, Rui-Yu Xiang, Han-Mei Zhang	
PO04-093	207
<b>Rare type of Lymphomatic papulosis on the nose: A case report and literature review</b> Hong-Mei Zhou, Qiang Zhao, Qian Shang, Li-Hong Zhao, Tian Wang, Song-Mei Geng	
PO04-094	208
<b>A chinese patient with multiple primary melanomas</b> Xue-Feng Wan, Jun-Wei Fan, Abuliz Palida	
PO04-095	208
<b>Dermoscopic findings of pseudoxanthomatous mastocytosis localized on vulva</b> Qiao-Fei Li	
PO04-096	208
<b>A case of kissing nevus</b> Yan-Qing Wang, Ying Ji, Sen-Lin Dong	
PO04-097	209
<b>A case of Extranodal NK/T-cell lymphoma, nasal type</b> Dan Yan	
PO04-098	209
<b>Spitz nevus with characteristic histopathological and dermoscopic features</b> Zhao-Rui Liu, Jie Liu	

PO04-099	210
<b>Analysis of 622 cases of epithelial skin malignant and premalignant lesions from the southwest China plateau</b>	
Dan Xu, Rui-Xian Niu, Tong-Yun Liu, Juan Zhang, Ying Tu, Li-Lei Su, He Li	
PO04-100	210
<b>Table tennis bat shape flap pedicled with the orbicularis oculi muscle for reconstruction of periorbital skin defect</b>	
Chun-Li Yao, Wen-Juan Yang, Hong-Xia Li, Teng-Fei Liu	
PO04-101	211
<b>A case of Pediatric Rhabdomyosarcoma</b>	
Jian-Xin Xia, Xian-Hua Jin, Xin-Yi Huang, Yan Mou	
PO04-102	211
<b>Skin high-frequency ultrasonographic and dermoscopic features of seborrheic keratosis</b>	
Shi Wang, Jie Liu, Zhao Liu, Cheng Chi, Yue-Hua Liu, Hong-Zhong Jin	
PO04-103	212
<b>Multiple warty dyskeratomas of the scalp: A case report and literature review</b>	
Hong-Mei Zhou, Qiang Zhao, Qian Shang, Li-Hong Zhao, Tian Wang, Song-Mei Geng	
PO04-104	212
<b>Down-regulated TRPV1 expression contributes to melanoma growth via calcineurin-ATF3-p53 pathway</b>	
Yu-Qi Yang, Wei-Nan Guo, Jing-Jing Ma, Chun-Ying Li	
PO04-105	213
<b>Cold atmospheric plasma induces apoptosis of melanoma cells via Sestrin2-mediated iNOS Signaling</b>	
Jun Xia	
PO04-106	213
<b>Application of axial lip myocutaneous flap in reconstructing defect after tumour excision in lip</b>	
Xue Li, Chun-Li Yao, Hong-xia Li	
PO04-107	214
<b>Role of B7-H3 in skin cancer: clinical significance and related mechanism</b>	
Dan Li, Wei Min, Dan Luo1	
PO04-111	214
<b>ALA-PDT for cutaneous squamous cell carcinoma induces the production of CXCL13 chemokine in CAF to exerts antitumor effects</b>	
Lu-De Zhu, Guo-Long Zhang, Pei-Ru Wang, Ling-Lin Zhang, Xiao-Jing Liu, Qian Zhou, Zhe Zheng, Shu-Zhan Shen, Jing-Jun Zhao, Xiu-Li Wang	
PO04-113	215
<b>Reconstruction of full-thickness lower eyelid defects involving more than half of the lower eyelid margin by the transposition skin flap: Case report</b>	
Chun-Li Yao, Wen-Juan Yang, Hong-Xia Li	
PO04-116	215
<b>A case of blastic plasmacytoid dendritic cell neoplasm (BPDCN)</b>	
Ru-Shan Xia, Chang-Rui Jing, Jia Tan, Shi-Qin Tao, Zhi Wang, Li-Jia Yang	
PO04-117	216
<b>Melanoma on previous vitiligo</b>	
Zhong-Shuai Wang, Jun Li	
PO04-118	216
<b>Analysis on clinical and dermoscopic characteristics of 164 acral melanocytic lesions.</b>	
De-Hua Liu, Hang Li1	
PO04-121	216
<b>A case of multiple cutaneous metastases of face from primary hepatocellular carcinoma</b>	
Xiao-Yang Liu, Jiang Jin, Si Zhang, Heng Zhang, Lin Cai, Jian-Zhong Zhang	
PO04-123	217
<b>Report of one case of repairing whole lower lip defect</b>	
Chun-Li Yao, Jaeyeong Oh, Lei Yang, Nan-Nan Hu	

PO04-124	217
<b>A case report: Basal cell carcinoma of the nipple-areola complex in a 65-year-old woman</b> Sheng-Jiang Liang <sup>1</sup> , Ting-Lu Ye, Bo Yu, Ban-Cheng Chen <sup>1</sup>	
PO04-126	218
<b>Apocrine sweat gland adenocarcinoma in the left retroauricular area: A rare case report</b> Xing Liu, Zhang-Hui Yue, Chun Pan, Yan Wang, Xiu-Lian Xu, Fang Fang	
PO04-128	219
<b>Amelanotic acral melanoma in China</b> Hui-Zi Gong	
PO04-129	219
<b>SHARPIN overexpression promotes TAK1 expression and activates JNKs pathway in mycosis fungoide</b> Yan-Hua Liang, Biao Chen	
PO04-131	220
<b>One case of ovarian cancer skin metastasis</b> Hai-Bo Wang, Bo Cheng, Chao Ji, Meng-Ting Lin, Jing Zhang, Jin-Wen Huang	
PO04-132	220
<b>Natural killer/T-cell lymphoma with hemophagocytic syndrome</b> Shuo-Shuo Liu	
PO04-133	220
<b>Photosensitizer-loaded liposomes-gold nanocages for enhanced phototherapy eliciting anti-melanoma immune responses</b> Jun Xie <sup>1, 2, 3</sup>	
PO04-134	221
<b>Squamous cell carcinoma case report</b> Rong-Rong Guo, Bo Cheng, Chao Ji	
PO04-136	221
<b>Carcinoma of the penis: A case report</b> Chun-Shui Yu, Qian Liao, Han-Wen Wang, Lin-Li Liu	
PO04-137	222
<b>A case of hair matrix tumors.</b> Li Zhao	
PO04-138	222
<b>A case of a cutaneous squamous cell carcinoma at the site of previous sporotrichosis: a novel pathogenetic association</b> Yong-Zhi Ji, Shi-Rui Liu, Fu-Qiu Li	
PO04-139	222
<b>Benserazide suppresses growth of melanoma by targeting PKM2</b> You-You Zhou, Xiang Chen, Cong Peng	
PO04-140	223
<b>Hepatic fibrosis, Squamous Cell Carcinoma and Multiple Bowen's Disease in a Patient with a History of Consumption of Traditional Chinese Herbal Balls: A six -year follow-up</b> Bin Chen	
PO04-141	223
<b>Sporotrichosis: A case report</b> Xiao-Pan Gong, Chao Ji, Bo Cheng, Qi-Le Zheng	
<i>PO05 Bullous Diseases</i>	
PO05-005	223
<b>Recessive dystrophic epidermolysis bullosa patient with COL7A1 gene mutation</b> Jeunghoon Lee, ChangDeok Kim, SooJung Kim, Mi-Ra Choi	
PO05-010	224
<b>Coexistence of bullous pemphigoid and pemphigus vulgaris</b> Jae seong Joo, Sook Jung Yun, Seung Chul Lee, Jee Bum Lee	

PO05-013	224
<b>A case of pemphigus vulgaris accompanied by acquired hemophilia A</b> Ozumi Tomita, Takashi Inozume, Shinji Shimada, Tatsuyoshi Kawamura	
PO05-014	225
<b>Recessive dystrophic epidermolysis bullosa patient (RDEB) with COL7A1 gene mutation</b> Jeunghoon Lee, Mi-ra Choi, Soo-jung Kim, Chang-Deok Kim	
PO05-018	225
<b>A paraneoplastic pemphigus with Unicentric mediastinum Castleman's disease: a case report</b> Yun-Zhu MU	
PO05-001	225
<b>Focal pemphigoid vegetans on the lower limbs of a boy with bullous pemphigoid</b> Hui-Chun su, Ling Yu, Zhi-Liang Li, Xu Yao, Su-Ying Feng, Bao-Wang	
PO05-002	226
<b>Application of indirect immunofluorescence on the diagnosis of autoimmune subepidermal bullous disease</b> Ling Yu, Su-Ying Feng, Zhi-Liang Li	
PO05-003	226
<b>A case report of drug-induced toxic epidermal necrolysis with secondary aspergillus fumigatus infection</b> Si Zhang, Cheng Zhou, Guang-Dong Wen, Lin Cai, Jian-Zhong Zhang	
PO05-004	227
<b>A case report of pemphigus foliaceus converting into bullous pemphigoid with clinical and immunopathological features</b> Feng Hu, Xiang-Dong Wang, Xiao-Yong Zhou, Liu-Qing Chen	
PO05-006	227
<b>Correlation of autoantibodies and cytokines related to eosinophilia with disease severity in patients with bullous pemphigoid</b> Zhi-Qi Song, Wei Wu	
PO05-007	228
<b>Analysis of prevalence of internal medicine diseases in patients with bullous pemphigoid</b> Fang Su, Qing-Yan Chen, Tie-Nan Li	
PO05-008	228
<b>Pemphigoid nodularis mimicking nodular prurigo in an immunocompetent patient</b> Chi-Peng Guo, Pei-Ying Feng, Xiao-Yuan Xie, Xin Zhou, Jia-Qi Fang, Wei Lai, Chun Lu	
PO05-009	229
<b>A case of pediatric pemphigus vulgaris with nail dystrophy</b> Lu Zheng	
PO05-011	229
<b>MiR-338-3p: a potential biological diagnostic marker of pemphigus</b> Nai-Yu Lin, Qing-Xiu Liu, Meng-Lei Wang, Kang Zeng	
PO05-012	229
<b>A case of infantile bullous pemphigoid</b> Huan-Huan Qu, Zhe Jian, Cui-Ling Ma, Gang Wang	
PO05-015	230
<b>Bullous pemphigoid combined with anti-Caspr2 encephalitis</b> Ya-Nan Wang, Yue-Ping Zeng, Li Li	
PO05-016	230
<b>A case of bullous pemphigoid complicated by Turner syndrome</b> Yan Mou, Jian-Xin Xia, Ying-Zhou, Fu-Qiu Li	
PO05-017	230
<b>Clinical and pathological analysis of four cases of nodular pemphigoid</b> Zhen-Feng Liu, Li-Dan Liu, Jin-Yi Li, Yong-Feng Chen	

## *PO06 Collagen Diseases and Vasculitis*

- PO06-002 231  
**Occlusive dressing and epidermal growth factor cream as a successful treatment for multiple, large, systemic lupus erythematosus-associated vasculitic ulcers**  
Young Wook Ko
- PO06-003 231  
**A case of generalized acquired cutis laxa**  
Hoo Min Choi, Sung Min Kim, Jong Baik Kim, Byung In Ro, Eun Jeong Ko, Han Kyoung Cho
- PO06-007 232  
**Immunoabsorption: a potent treatment option for severe systemic lupus erythematosus**  
Xin Wang, Hai Long
- PO06-010 232  
**Thalidomide in the treatment of pyoderma gangrenosum: a case series of 8 patients**  
Li-Hong Chen, Xiao-Qing Zhao, Ruo-Fei Shi, Jie Zheng
- PO06-015 233  
**Analysis of possible structures of inducible skin-associated lymphoid tissue (iSALT) in lupus erythematosus profundus**  
Takashi Nomura, Toshiaki Kogame, Kenji Kabashima
- PO06-016 233  
**Unbalanced Th17/Treg axis intensifies the bleomycin-induced systemic sclerosis-like phenotypes of Treg-specific Fli1 conditional knock out mice.**  
Kouki Nakamura, Yoshihide Asano, Takuya Miyagawa, Megumi Hirabayashi, Takashi Yamashita, Ryosuke Saigusa, Shunsuke Miura, Tetsuo Toyama I, Takehiro Takahashi, Takehiro Takahashi, Yohei Ichimura, Takashi Taniguchi, Ayumi Yoshizaki, Maria Trojanowska, Shinichi Sato
- PO06-017 234  
**Serum levels of Soluble PD-1 and PD-L2 associate with abnormal immune activation and disease severity in patients with systemic sclerosis**  
Ayumi Yoshizaki, Takemichi Fukasawa, Satoshi Ebata, Asako Yoshizaki, Yoshihide Asano, Yutaka Kazoe, Kazuma Mawatari, Takehiko Kitamori, Shinichi Sato
- PO06-018 234  
**A case of Schnitzler syndrome**  
Mayuko Yamamoto, Ema Kusume, Ai Fujioka, Kimiko Nakajima, Ryuta Nishikomori, Kazushi Izawa, Shigetoshi Sano
- PO06-019 235  
**A case of subcutaneous-type sarcoid with granulomatous vasculitis**  
Ai Fujioka, Yukiko Tsuji, Hideki Nakajima, Masasi Nomoto, Keiko Miura, Ko-Ron Chen, Shigetoshi Sano
- PO06-020 235  
**Systemic sclerosis-like vasculopathy underlies the delayed wound healing in Fli1/Klf5 double-heterozygote knockout mice: Abnormal angiogenesis activation with vasculogenesis impairment**  
Kouki Nakamura, Yoshihide Asano, Takuya Miyagawa, Megumi Hirabayashi, Takashi Yamashita, Ryosuke Saigusa, Shunsuke Miura, Tetsuo Toyama I, Takehiro Takahashi, Yohei Ichimura, Takashi Taniguchi, Ayumi Yoshizaki, Maria Trojanowska, Shinichi Sato
- PO06-001 236  
**Lichen sclerosus et atrophicus-a disease that can not be neglect**  
Yan-Fei Zhang, Yi-Guo Feng, Zheng-Xiao Li
- PO06-004 236  
**Research of Cthrc1 and TGF-β1 effect on fibroblast collagen synthesis in fibroblast**  
Yi Liu
- PO06-005 237  
**A case of reactive perforating collagenosis**  
Hui-Min Meng

PO06-006	237
<b>Pancreatic panniculitis in a patient with chronic pancreatitis: A rare condition in misdiagnosed</b>	
Mao Luo, Zhuo-Fu Luo, Ji-Xiang Xu, Jian-Qiao Zhong, Xia Xiong, Yang Xu	
PO06-008	237
<b>Correlation between the expression of lncRNAs in PBMC and their clinical manifestations in patients with SLE</b>	
Dan-Qi Deng, Xiao A, Li-Mei Yuan, Wen-Ti Cao	
PO06-009	238
<b>Recognition of stiff skin syndrome</b>	
Song-Mei Geng, Li-Hong Zhao, Jin-Gang An	
PO06-011	238
<b>Acute hemorrhagic edema of infancy: a case report</b>	
Liu-Qing Chen, Ling-Ling Zeng, Min Jiang	
PO06-012	239
<b>CTCF regulates CD70 expression in lupus CD4+ T cells</b>	
Ying Zhou, Liu Duan, Qian-Jin Lu	
PO06-013	239
<b>A case of acquired reactive perforating collagenosis associated with psoriasis</b>	
Bei Kan	
PO06-014	240
<b>Acquired reactive perforating collagenosis: A case report</b>	
Min Lin, Jin-Wen Huang, Chao Ji, Bo Cheng	
<i>PO07 Cosmetic Dermatology</i>	
PO07-003	240
<b>A face-split study to evaluate the effects of microneedle radiofrequency with Q-switched Nd: YAG laser for the treatment of melasma</b>	
JinWoong Jung, WonOh Kim, SangDon Yoon, SungAe Kim, YoungWook Ryoo	
PO07-004	240
<b>Treatment of ear keloids by surgical excision combined with intralesional corticosteroid injections and pulsed dye laser therapy</b>	
Sang-Myung Park, Joong-Yoon Choi, Ye-Jin Lee, Bark-Lynn Lew, Woo-Young Sim	
PO07-007	241
<b>Niacinamide and 12-hydroxystearic acid prevented benzo(a)pyrene and squalene monohydroperoxides induced hyperpigmentation in skin equivalent</b>	
Tingyan Mi, Nan Huang, Yiyong Dong, Guoqiang Chen	
PO07-028	241
<b>Successful treatment of scar using microneedle radiofrequency device with polydeoxyribonucleotide injection</b>	
Ji Hyun Park, Ko Eun Kim, Sook In Ryu , Bo Young Kim, Sang Wook Son , Hye Rim Moon	
PO07-030	242
<b>Skin aging and interfollicular epidermal stem cells</b>	
Kyoung-Chan Park	
PO07-001	242
<b>Applications and efficacy of platelet-rich plasma in dermatology: a systematic review of clinical trials</b>	
Mei-Jie zhang, Bing-Rong Zhou, Dan Luo	
PO07-002	243
<b>Inhibitory effect of topical calcineurin inhibitor on the laser-induced angiogenesis</b>	
Si-Yu Wang, Gang Liu, Lei Yan, Jun Xie, Zhu Shen	
PO07-005	243
<b>Clinical application of facial anatomy in the treatment of skin laxity by monopolar radiofrequency</b>	
Kai Li, Lin Gao, Lin-Han Qian, Ni Gao, Gang Wang	

PO07-006	244
<b>Research progress and standardized operation of hyaluronic acid intradermal injection</b> Kai Li, Lin Gao, Ni Gao, Lin-Han Qian, Gang Wang	
PO07-008	244
<b>Treatment of freckle with the large spot size, low fluence Q-switched 1064 nm Nd: YAG laser</b> Hua-Xu Liu, Yan Lin, Xiao-Jun Chi	
PO07-009	245
<b>Paradoxical hyperplasia in a Chinese man: A rare side effect associated with cryolipolysis</b> Ling-Ling Hu, Wei-Min Song	
PO07-010	245
<b>Combination of tretinoin and 1565 nm non-ablative fractional laser for the treatment of acne</b> Lin Gao, Li Wang	
PO07-011	245
<b>Update of laser and light therapies in melasma</b> Yao-Jia Luo	
PO07-012	246
<b>Acneform reactions induced by laser hair removal of long-pulse Nd: YAG</b> Hai-En Wu, Yong-Bin Liu	
PO07-013	246
<b>Comfort and result: Pain and energy management during monopolar radiofrequency treatment</b> Kai Li, Lin Gao, Li Wang, Ni Gao, Gang Wang	
PO07-014	247
<b>Dual-wavelength, Nd: YAG, Picosecond-domain laser safely and effectively of skin rejuvenation in Chinese</b> Kai Li, Ming-Shan Su	
PO07-015	247
<b>A study of combining nano-microneedle with 5% minoxidil in androgenetic alopecia treatment</b> Yuan-Hong Li	
PO07-016	247
<b>Clinical evaluation of the efficacy and safety of combined bipolar radiofrequency and Intense Pulsed Light vs. bipolar radiofrequency alone for facial/hand skin rejuvenation treatment.</b> Fei-Yan Lin, Xiao-Juan Yao	
PO07-017	248
<b>Enhancing hair growth in male androgenetic alopecia by a combination of 1550 nm fractional erbium-glass laser therapy and 5% minoxidil tincture</b> Qiong Wang, Wei-Hui Zeng, Jian-Wen Ren, Song-Mei Geng	
PO07-018	248
<b>Comparison of a pulsed dye laser and a narrow-spectrum intense pulsed light in the treatment of acne vulgaris</b> Jin Chen, Yu Liu, Yang-Mei Chen, Qing Zhao	
PO07-019	249
<b>Clinical efficacy of gold microneedles radiofrequency combined with AAPE in the treatment of atrophic acne scars</b> Cai-Xia Tu, Yan-Lin Liu, Yu-Ling Yang, Lu Wang	
PO07-020	249
<b>Dermoscopic features of alopecia areata and their clinical significance</b> Jia Liu	
PO07-021	250
<b>Er:YAG fractional laser combining BBL treatment for pediatric hypertrophic scars</b> Dan Deng, Xue Zhang, Zhi-Rong Yao	
PO07-022	250
<b>Repair methods and strategy for complication of cosmetic laser</b> Dong-Ni Li, Bing Cai, Yan-Hua Liu	

PO07-023	250
<b>Applications of skin imaging techniques in cosmetic dermatology</b> Zhao-Rui Liu, Jie Liu	
PO07-024	251
<b>Efficacy and safety of 532nm KTP laser in the treatment of port-wine stains: A case series.</b> Qian-Li Yang, Zhong Lu	
PO07-025	251
<b>Excision of apocrine glands and flaps with selective preservation of subcutaneous fat septal vessels for therapy of bromhidrosis</b> Chang-Gui Lan, Cheng-Qi Liao, Li-Ping Hu, Xiao-Feng Mei, Yi Wang, Xiao-Xi Zhou, Lin Gan, Can Li	
PO07-026	252
<b>Treatment of atrophic acne scarring with fractional micro-plasma radio-frequency in chinese patients: A prospective study</b> Rui Yin	
PO07-027	252
<b>Overview of chemical peels: Why, when and how?</b> Yan Wu, Shao-Min Zhong, Chen Yuan, Meng-Yen Hsieh, Li Yang	
PO07-029	253
<b>Combining application of topical 30% salicylic acid and oral minocycline on rosacea in Asian patients: A randomized split-face controlled study</b> Shu-Juan He	
PO07-031	253
<b>Classification of dark circles and treatment options</b> Yan Wu, Chen Yuan, Shao-Min Zhong, Meng-Yan Xie	
PO07-032	254
<b>Survey of injection habit of botulinum toxin in Chinese dermatologists and plastic surgeons for aesthetic treatments</b> Yan Wu, Chen Yuan, Shao-Min Zhong, Meng-Yan Xie	
PO07-033	255
<b>Effects of varying dermal delivery methods of different hyaluronic acid-based products on skin rejuvenation</b> Yan Wu, Meng-Yan Xie, Chen Yuan, Shao-Min Zhong	
PO07-035	255
<b>Activation of aryl hydrocarbon receptors in human sebocytes by Propionibacterium acnes and peptidoglycan in vitro and its significance in the pathogenesis of acne</b> Ke Cao, Qiang Ju	
PO07-036	256
<b>Aryl hydrocarbon receptor modulates the expression of TNF-<math>\alpha</math> and IL-8 in human sebocytes via myd88- p65NF-<math>\kappa</math>B /p38MAPK signaling pathways</b> Xiao- Hou, Guang-Jie Chen, Ting-Ting Hu, Lan-Qi Wang, Zhan-Yan Pan, Ling-Yi Lu, Ke Cao, Ying Ma, Amir Hossini, Christos.C Zouboulis, Long-Qing Xia, Qiang Ju	
PO07-037	257
<b>Non-invasive skin evaluation for the diagnosis, differential diagnosis and treatment of port-wine stains</b> Xian Jiang, Lian Liu	
PO07-038	257
<b>Aesthetic application of local flap in repair of periorbital skin defects</b> Dong-mei Wu	
PO07-039	257
<b>Combination therapy of acne scars by using versatility erbium: YAG laser platform</b> Kai Li, Lin Gao, Lin-Han Qian, Gang Wang	

PO07-041		258
<b>New method for facial aging evaluation of Chinese population</b>		
Qian-Qian Wang		
<i>PO08 Dermatitis and Skin Allergy</i>		
PO08-003		258
<b>Associations between urine iodine and allergic diseases in the Korean National Health and Nutrition Examination Survey 2013–2015</b>		
Young Bok Lee, Soo Young Lee, Jin Young Kim, Min Ji Kang, Jin Wou Lee, Dong Soo Yu		
PO08-007		259
<b>A case of DRESS syndrome initially misdiagnosed as <i>Salmonella</i> infection</b>		
Jisook Yoo, Taehan Koo, Eun-Jung Park, Mingyul Jo, Min-Soo Kim, Mihn-Sook Jue		
PO08-013		259
<b>Effectiveness of high-dose ultraviolet A-1 phototherapy on acute exacerbated atopic dermatitis</b>		
Min Soo Jang		
PO08-014		260
<b>A case of fulminant type 1 diabetes in the course of drug-induced hypersensitivity syndrome (DIHS)</b>		
Yue-Qi Jiang, Jin-Ran Lin		
PO08-015		260
<b>Lichen simplex chronicus secondary to scald injury and skin flap transplantation.</b>		
Zhi-Qiang Yin		
PO08-017		260
<b>A case of hyperimmunoglobulinemia E syndrome and Kimura’s disease</b>		
Tae Jun Park, Ha Neul Oh, Bo Young Kim, Chang Min Kim, Sang Wook Son		
PO08-023		261
<b>Acetaminophen-induced generalized bullous fixed drug eruption (GBFDE) coincided with influenza</b>		
Jin Young Song, Kyung Muk Jeong, Seung Hwi Kwon, Yoo Sang Baek, Hae Jun Song, Chil Hwan Oh, Jiehyun Jeon		
PO08-026		261
<b>Alitretinoin can be a good treatment option for idiopathic recalcitrant trachyonychia in adults: An open-label study</b>		
Kihyuk Shin, Tae-Wook Kim, Sung-Min Park, Hyun-Joo Lee, Hyunju Jin, Hyang-Suk You, Woo-Haing Shim, Gun-Wook Kim, Hoon-Soo Kim, Hyun-Chang Ko, Byung-Soo Kim, Moon-Bum Kim		
PO08-027		262
<b>Histopathologic study of morbilliform drug eruption: Differences between chemotherapeutic agents and antibiotics</b>		
Soo Yeon Cho, Soohyun Kwon, Ji Eun Kwon, Jae-Ho Han, You Chan Kim		
PO08-028		262
<b>Comorbidity of vitamin A and vitamin D deficiency exacerbates the severity of atopic dermatitis in children</b>		
Juan Xiang, Hua Wang, Ting-Yu Li		
PO08-034		263
<b>Significance and correlation of thyroid associated autoantibodies in patients with chronic urticaria</b>		
Jing Qi, Zi-Gang Zhao, Cheng-Xin Li		
PO08-036		263
<b>Generalized lichen nitidus following anti-programmed cell death 1 antibody treatment</b>		
Takashi Nomura, Maria Cho, Atsushi Otsuka, Saeko Nakajima, Kenji Kabashima		
PO08-037		264
<b>Efficacy of Oregedokuto in a murine model of atopic dermatitis</b>		
Naoya Mori, Yoko Yoshihisa, Tsugunobu Andoh, Mati Ur Rehman, Tadamichi Shimizu		

PO08-039		264
<b>Toxic epidermal necrolysis with several immune-related adverse events followed by nivolumab in a patient with malignant melanoma</b>		
Yuko Watanabe, Yukie Yamaguchi, Junko Mukaijo, Naoko Takamura, Hiroko Takeyama, Nobuaki Ikeda, Hidefumi Wada, Michiko Aihara		
PO08-040		265
<b>Ragweed pollen allergen is a danger signal for the skin via activation of NLRP3 inflammasome in keratinocytes</b>		
Xiu-Ju Dai, Mikiko Tohyama, Masamoto Murakami, Ken Shiraishi, Koji Sayama		
PO08-041		265
<b>Granulomatous periorificial dermatitis in a fiberglass industry worker</b>		
Ko Eun Kim, Tae Jun Park, Bo Young Kim, Ji Hyun Park, Sang Wook Son, Il-Hwan Kim, Hye Rim Moon		
PO08-043		266
<b>Inducible urticaria in children: Its clinical and laboratory features.</b>		
Koji Masuda, Junko Hattori, Risa Tamagawa-Mineoka, Norito Katoh		
PO08-048		266
<b>Erythema multiforme-like contact dermatitis caused by Lysimachia clethroides</b>		
Xu-Hua Tang, Zi-Xun Zeng, Hui Zhou		
PO08-001		266
<b>Itching and its related factors in subtypes of eczema: a cross-sectional and multicenter study in tertiary hospitals of China</b>		
Xin Wang, Lin-Feng Li, Xiao-Dong Shi		
PO08-002		267
<b>A case of allergic dermatitis resembling infectious granuloma</b>		
Xiao-Yang Liu, Yan Zhao, Lin Cai, Jian-Zhong Zhang		
PO08-004		267
<b>Patch testing in facial dermatitis using Chinese baseline series (60 allergens) and cosmetic series (58 allergens)</b>		
Fen Peng, Zhang-Lei Mu, Chen-Hong Xue, Zhou Chen, Jian-Zhong Zhang		
PO08-005		268
<b>Evaluation of the reduction of risk in patients with moderate-to-severe atopic dermatitis receiving Dupilumab</b>		
Yue Han, Xu Yao		
PO08-006		268
<b>Efficacy of vitamin D supplementation in the reduction of risk of children with atopic dermatitis: A meta-analysis of randomized controlled trials</b>		
Yue Han		
PO08-008		269
<b>Procalcitonin as a diagnostic indicator for systemic bacterial infections in patients with Stevens-Johnson syndrome/toxic epidermal necrolysis</b>		
Qian Wang, Wei Liu, Li-Xia Zhang		
PO08-009		270
<b>Prevalence of chronic spontaneous urticaria, eczema and tinea among chinese young adults are significantly correlated with ethnicity and original family socioeconomic status</b>		
Yi Xiao, Jie Li, Si-Yu Yan, Ni Tang, Xiao-Yan Huang, Yu-Zhou Huang, Min-Xue Shen, Xiang Chen		
PO08-010		270
<b>Mediators in the association of chronic spontaneous urticaria with anxiety and depression in adolescents</b>		
Yu-Zhou Huang, Min-Xue Shen, Jie Li, Xiang Chen		
PO08-011		271
<b>Correlation analysis of serum 25-OH vitamin D level and atopic dermatitis in children</b>		
Peng-Yue Liu, Ge Peng, Li-Xia Cui, Fan Yang, Zhen-Zhen Mu, Xiu-Ping Han		
PO08-012		271
<b>Sublingual immunotherapy in mite-sensitized patients with atopic dermatitis: A multi-centre, randomized, double-blind, placebo-controlled study</b>		
Lun-Fei Liu, Ji-Su Chen, Min Zheng		

PO08-016	272
<b>Serum miR-125a-5p and CCL17 as potential biomarkers for chronic spontaneous urticaria</b> Li-Ming Zhang, Rui-Qun Qi, Yang Yang, Hong-Duo Chen, Ting Xiao	
PO08-018	272
<b>A case report of skin ulcer</b> Yao Qin, Jin-Zhu Guo, Qing-Hua Song, Chun-Lei Zhang	
PO08-019	273
<b>Epidemiology of Stevens-Johnson syndrome and toxic epidermal necrolysis in China</b> Jing Zhang, Jin-Wen Huang, Chao Ji, Bo Cheng, Min Lin	
PO08-020	273
<b>Associations between vitamin D receptor gene polymorphisms and chronic spontaneous urticaria in Chinese Han population</b> Yi-Ping Ma	
PO08-021	274
<b>Combination of traditional Chinese and Western medicine treatment of childhood eczema</b> Tao-Ying Cheng	
PO08-022	274
<b>Decreased interleukin-35 serum levels in patients with chronic spontaneous urticarial</b> Li-Xin Fu, Tao Chen, Qiao-Mei Sun	
PO08-024	275
<b>A case of trichloroethylene induced medicamentosa-like dermatitis (DMLT) complicated with Hemophagocytic Syndrome (HPS)</b> Jia-Qi fang, Xiao-Yuan Xie, Wei Lai, Jun-Ye Yang, Xiang-Zhong Zhang, Ruo-Zhi Xiao	
PO08-025	275
<b>Clinical efficacy and safety of biologic agents in moderate to severe atopic dermatitis: a meta-analysis</b> Ge Peng, Li-Xia Cui, Peng-Yue Liu, Xi-Meng Zhang, Yue Zhang, Xiu-Ping Han	
PO08-029	276
<b>TSLP promote MoDCs uptake OVA and induce allergic TH2 immunity by Dectin-2</b> Yun-Sheng Liang, Bi-Hui Yu	
PO08-030	276
<b>Suppression of Osthole on PMA-induced degranulation of rat basophilic leukemia RBL-2H3 cells</b> Qiu-Qiu Zhang, Tie-Chi Lei	
PO08-031	277
<b>Lichen planus: an immunohistochemical study of LC3B, mTOR, Rab11a and a unifying hypothesis of pathogenesis</b> Ya-Li Gao, Xiu-Zu Song	
PO08-032	277
<b>Curative effect of high-dose Levocetirizine in treating recalcitrant chronic spontaneous urticaria and the serum IP3 concentration detection</b> Xian-Qiong Huang, Ren-Shan Sun	
PO08-033	278
<b>Baboon syndrome: A rare cutaneous reaction induced by inhalation of mercury vapour</b> Jin-Gang An	
PO08-035	278
<b>An analysis of the prevalence of AD prevalence in a primary school in sha district, urumqi</b> Wen-Hui Zuo, Man-Yu Zhou, Fei Guo, Hong-Xia Liu	
PO08-038	279
<b>Paraphimosis due to butenafine hydrochloride ointment allergy</b> Jin-Lan Tian, Chang-Qiang Li, Jing Fang, Xin Ye, Xia Feng, Hong-Yi He	
PO08-042	279
<b>Research on the efficacy and safety of APCC-1502 moisturizer among dry skin and mild to moderate atopic dermatitis population in northern China</b> Li Zhang, Xing-Hua Gao	

PO08-044	280
<b>Effects of TGM3 on monocyte-derived dendritic cell (MDDC) activation</b> Hui-Chun Su, Xu Yao, Bao-Xi Wang	
PO08-045	280
<b>Study on the binding ability of CD209 and transglutaminase 3 (TGM3)</b> Hui-Chun Su, Xu Yao, Bao-xi Wang	
PO08-046	280
<b>Study on the interference efficiency of CD209 SiRNA to CD209</b> Hui-Chun Su, Xu Yao, Bao-Xi Wang	
PO08-047	281
<b>TGMs expression in the epidermal lesions of atopic dermatitis</b> Hui-Chun Su, Xu Yao, Bao-Xi Wang	
PO08-049	281
<b>Clinical observation of ebastine combined with topical recombinant human epidermal growth factor gel in treatment of eczema on face</b> Jin-Feng Wang, Lan-Xiang Jiang, Fu-Qiu Li	
 <i>PO09 Fungal Infection</i>	
PO09-005	282
<b>An unusual case of cutaneous penicilliosis Due to <i>Penicillium citrinum</i> in an immunocompetent individual</b> Xiao-Yan Wu, Jia-Min Huang, Jing Zhang, Huai-Qiu Huang	
PO09-008	282
<b>Factitial panniculitis with secondary <i>Candida parapsilosis</i> infection in a patient: A case report</b> Yan-Yang Guo, Jian-Kang Yang, Cui-Ling Ma, Gang Wang, Meng Fu	
PO09-021	282
<b>RNA-Seq of macrophages infected with <i>Fonsecaea monophora</i></b> Ming-Lan Shi, Jun-Min Zhang	
PO09-033	283
<b>Immunomodulatory effects of itraconazole on macrophage M1/M2 Polarization and improvement of phagocytic capacity to <i>Candida albicans</i></b> Xiao-Li Zheng, Guan-Zhao Liang, Wei-Da Liu, Guan-Zhi Chen	
PO09-034	283
<b>Cutaneous Mucormycosis caused by <i>Mucor irregularis</i> in a healthy patient</b> Xiang-Xi Wang, Jin Yu, Ai-Ping Wang	
PO09-035	284
<b>Identification of dermatophyte species by matrix-assisted laser desorption ionization-time-of-flight mass spectrometry</b> Jin Shao, Zhe Wan, Ruo-Yu Li, Jin Yu	
PO09-041	284
<b>Immune response of immunosuppressed mice to <i>Aspergillus fumigatus</i></b> Min Zhu	
PO09-001	285
<b>Newly characterization of a <i>Candida albicans</i> isolate from a cervical lymphadenitis patient and its clinic indication</b> Cheng-Zhen Zhang, Wen-Juan Wang, Qing-Tao Kong, Jiang-Ye Chen, Hong Sang	
PO09-002	285
<b>Kerion celsi caused by <i>Trichophyton violaceum</i>: A case report and literature review in China from 2011 to 2017</b> Jian-Qin Wang, Lei Shao, Jing-Yao Liang, Si-Ying Xiong, Xin Tian, Xiao-Dong Li, Li-Jie Chen, Dong-Mei Li, Yu-Mei Liu	
PO09-003	286
<b>Skin microbiome changes in patients with interdigital superficial fungal infection</b> Ruo-Jun Wang, Ying-Gai Song, Jin Yu, Ruo-Yu Li	

PO09-004	286
<b>Mycobacterium Chelonae/abscessus complex infection of the limbs: A challenging clinical case</b> Li-Dan Zhang, Xin Zhou, Ling Lin, Quan Luo	
PO09-006	286
<b>Sprothrix globosa causing sporotrichosis in Jilin Province (Northeast of China): Prevalence and molecular characterization</b> Yan Cui, Lei Yao, Li-Pei Zhao, Shan-Shan Li	
PO09-007	287
<b>Diagnostic and therapeutic study of kerion Caused by <i>Alternaria Alternata</i></b> Gong-Jie Zhang, Dong-Ming Li, Ting-ting Sun, Fang Zhou	
PO09-009	287
<b>Six cases of chronic mucocutaneous candidiasis</b> Ji-Xin Gao, Rong-Rong Liu, Yu Liu, Meng Fu	
PO09-010	288
<b>Clioquinol, an alternative antimicrobial agent against common pathogenic microbe</b> Zi-Meng You, Xin Ran, Ya-Ling Dai, Chao-Liang Zhang, Yu-Ping Ran	
PO09-011	288
<b>Efflux pump inhibitor tetrandrine exhibits synergism with fluconazole or voriconazole against <i>Candida parapsilosis</i></b> Ya Zhao, Ling Jiang, Hao-Tian Wu, Shui-Xiu Li, Yan-Jun Song, Hui Guo, Wei-Da Liu, Yong-Nian Shen, Dong-Mei Li, Kun-Ju Zhu, Hong Zhang	
PO09-012	289
<b>A case of sporotrichosis presented with multiple crusted nodules, papules and infiltrated plaques on the left cheek: an unusual clinical presentation</b> Ya-Bin Zhou, Ruo-Yu Li, Zhe Wan, Wei Chen, Xiao-Qing Liu, Wei Liu	
PO09-013	289
<b><math>\alpha</math>-(1, 6)(1, 2)-Mannoprotein of <i>Candida albicans</i> promotes proliferation and inhibits apoptosis of macrophages through akt activation</b> Hang-Hang Jiang, Rui-Qun Qi, Yang Han, Yu-Zhe Sun, Yu-Jing Zhang, Xing-Hua Gao	
PO09-014	290
<b>Nonprofessional phagocytic cells invasion by <i>Candida albicans</i>: induced endocytosis vs active penetration</b> Bo Pan, Jiang-Han Chen, Xiao-Gang Liu, Wei-Hua Pan <sup>1</sup> , Wan-Qing Liao, Yao-Ping Liu, Solis Norma, Scott Filler	
PO09-015	290
<b>Superficial fungal infections of the male penis and scrotum: 32 cases series report</b> Mei-Rong Li, Song-Chao Yin, Ling Wei, Han Ma, Chun Lu, Pei-Ying Feng	
PO09-016	290
<b>A case of fungal immunofluorescence in the diagnosis of Facial tinea</b> Wen-Ju Wang, Ming Chen, Xue-Ying Liu, Yong-Hong Lu	
PO09-017	291
<b>Anti-Interferon-<math>\gamma</math> autoantibodies are underlie the disseminated <i>Talaromyces marneffe</i> infection</b> Cun-Wei Cao, Xin-Qiang Ning	
PO09-018	292
<b>Synergistic activity of tacrolimus or triamcinolone acetonide with itraconazole, terbinafine, bifonazole, and amorolfine against clinical dermatophyte isolates</b> Jin-Qing Zhang, Jing-Wen Tan, Yan-Ling He	
PO09-019	292
<b>Evaluation of the effects of photodynamic therapy alone and combined with standard antifungal therapy on biofilms of <i>T. rubrum</i>, <i>T. mentagrophytes</i> and <i>Microsporium gypseum</i></b> Bo-Rui chen, Yi Sun, Jing-Jun Zhao, Xiao-Mo Wu, Jin-Yan Zhang	
PO09-020	293
<b>AcuD gene is involved in morphogenesis and virulence of the human pathogenic fungus <i>Talaromyces marneffe</i></b> Li-Ya He, Jiao Feng, Li-Yan Xi	

PO09-022	293
<b>Transcriptional profiling of macrophages infected with <i>Fonsecaea monophora</i></b> Ming-Lan Shi, Jun-Min Zhang	
PO09-023	294
<b>Topical use of 1% luliconazole cream cured with <i>Fusarium oxysporum</i> infected refractory ulcers on an elderly patients leg and ankle</b> Xin Ran, Xian Jiang, Sheng Wang, Yu-Ping Ran	
PO09-024	294
<b>An <i>in vitro</i> study of photodynamic inactivation on <i>Fonsecaea Monophora</i> by TMPyP4</b> Ya He, Li-Yan Xi	
PO09-025	295
<b>Zygomycosis patients with diabetes type 2 in the mainland of China: A hidden challenge</b> Jiu Yi, Min Chen, Jing-Yu Zhao, Wei-Hua Pan, Wei Fang, Ju-Lin Gu, Wan-Qing Liao	
PO09-026	295
<b>Study on drug susceptibility of <i>Candida albicans</i> in free state and biofilm state</b> Jing Yang	
PO09-027	296
<b>Correlation between mutation/overexpression of Mrr2 , CDR1 genes and fluconazole-resistant in <i>Candida albicans</i> isolates</b> Wen-Li Feng, Ying Ji, Jing Yang, Zhi-Qin Xi, Lu Yang, Xin Zhu, Yan Ma, Yuan Wu	
PO09-028	297
<b>Mutations and/or overexpressions of ERG3 and Efg1 genes in clinical azoles-resistant isolates of <i>Candida albicans</i></b> Wen-Li Feng, Zhi-Qin Xi, Jing Yang, Ying Ji, Xin Zhu, Lu Yang, Yan Ma, Xiao-Qiang Jia	
PO09-029	297
<b>Role of Bem46 gene in the polar growth of <i>Aspergillus fumigatus</i></b> Yan Ma, Wen Li, Jia-Juan Li, Rui-han Sun	
PO09-030	298
<b>Study on the expression of murine dendritic cells to stimulate the <i>Sporothrix schenckii</i> complex produce inflammatory factors</b> Xiao-Dong Wang	
PO09-031	298
<b>Isolation and identification of 359 strains of <i>Candida albicans</i> and its susceptibility to 5 kinds of antifungal agents</b> Yue-Bin Zeng, Ming-Hang Li, Di Wang, Bing Hou, Yuan-Chun Huang, Yuan-Shu Qian4	
PO09-032	299
<b>Genotype and virulence factors analysis in the human fungal pathogen <i>Cryptococcus neoformans</i></b> Yi-Wu Yu	
PO09-036	299
<b>Comparative transcriptome analysis of <i>Sporothrix Schenckii</i> during dimorphic switch</b> Zhen-Ying Zhang, Bin-Bin Hou, Wen-Wen Zheng, Fang-Liang Zheng	
PO09-037	300
<b>A case of tattoo complicating lymphocutaneous sporotrichosis</b> Yan Mou, Jian-Xin Xia, Fu-Qiu Li	
PO09-038	300
<b>In vitro activities of eight antifungal drugs and their combinations against dematiaceae strains</b> Ying Ji, Ruo-Yu Li, Wei Liu, Zhe Wan, Qian Wang, Hao Zhang	
PO09-039	300
<b>Melanin of <i>fonsecaea monophora</i> modulates murine macrophage polarization</b> Ying-hui Liu, Hong-Fang Liu, Yang-Xia Chen, Li-Yan Xi, Yun-Sheng Liang	
PO09-040	301
<b>Clinical aspects and pathogen identification of tinea incognito</b> Qin-Qin Tang	

PO09-042	301
<b>A case of Candida Balanitis with hyperplastic plaque mimicking vascular neoplasm</b> Xue-Yao Yao, Xiao-Bin Zhou, Wen-Ge Zhang, Guang-Dong Wen, Jian-Zhong Zhang, Cheng Zhou	
PO09-043	301
<b>Tenosynovitis infection of <i>Mycobacterium marinum</i>: A case report and literature review</b> Min-Min Jiang	
PO09-044	302
<b>A case of an invasive fungal infection which was misdiagnosed as an IgG4 related disease</b> Hong-Mei Lyu, Jin-Zhu Guo, Yi-Dan Sun, Xin-Yue Li, Dong-Ming Li	
<i>PO10 Genetic Disorders</i>	
PO10-002	302
<b>Juvenile xanthogranuloma occurred in a patient based on the juvenile myelomonocytic leukemia and neurofibromatosis type 1 after allogeneic hematopoietic stem cell transplantation</b> Yan Gao	
PO10-004	303
<b>First report of DDB2 mutations in a Chinese Han family with xeroderma pigmentosum</b> Rui Yang, Qing-Tao Kong, Yun Hui, Su-Yang Huang, Fang Liu, Cai-Yun Zhang, Hong Sang	
PO10-005	303
<b>A case of aquagenic wrinkling of the palms</b> INHO BAE, Hoon Choi, Chanho Na, Minsung Kim, Bongseok Shin	
PO10-007	304
<b>Olmsted syndrome with severe pruritus and mutation in TRPV3</b> Ru-zeng Xue	
PO10-008	304
<b>Two cases of xeroderma pigmentosum with ERCC2/ERCC5 gene mutation</b> Zhou Yang, Zhe Xu, Lei Jiao, Shan Wang, Lin Ma	
PO10-011	305
<b>Genetic analysis of autosomal dominant multiple syringomas</b> Toshihide Higashino, Chao-Kai Hsu, Christos Petridis, Christos Tziotzios, Alexandros Onoufriadis, Wei-Ming Wu, Michael Simpson, John McGrath	
PO10-017	305
<b>Five novel RECQL4 mutations in four patients with Rothmund-Thomson syndrome and analysis of RECQL4 mRNA expression in one typical patient</b> Qiu-yun She, Lu-zhu Chen, Ting-mei Wang, Ying-ying Dong, Yun-hua Deng	
PO10-018	306
<b>SASH1 related autosomal-dominant dyschromatosis</b> Ting-Mei Wang, Qiu-Yun She, Ying-Ying Dong, Yun-Hua Deng	
PO10-023	306
<b>A novel type of hereditary angioedema: HAE due to a plasminogen mutation</b> Georg Dewald	
PO10-028	307
<b>A novel mutation in keratin 5 cause a mild recessive epidermolysis bullosa simplex</b> Ming Li, Fu-Ying Chen, Dan Deng, Xue Zhang, Yan Gu, Ru-hong Cheng, Jian-ying Liang, Lu-yao Zheng, Yue Li, Zhi-Rong Yao	
PO10-030	307
<b>Comorbidities or different entities? Phenotype variability associated with psen1 mutations</b> Wen-Rui Li, Hao-Xiang Xu, Yan-Yan He, Lin Lin, Cheng-Rang Li	
PO10-037	308
<b>Terminal osseous dysplasia with pigmentary defects in a Chinese girl with FLNA mutation</b> Zhong-Tao Li, Yao Xie, Lin Wang	

PO10-040	308
<b>Junctional epidermolysis bullosa complicated with nephrotic syndrome</b> Li Ding, Xing-Li Zhou, Pradhan Ojaswi, Krista Shrestha, Xiao-Ping Du, Mei Yang, Song Lei, Wei Li	
PO10-001	308
<b>Association between polymorphisms in the promoter region of miR-17-92 cluster and systemic lupus erythematosus in a Chinese population</b> Rong Wang	
PO10-003	309
<b>Rothmund-thomson syndrome: 4 new cases from three unrelated families in China</b> Xin-Yue Zhang, Yi Zheng, Qiang Zhao, Qing-Yan Li, Zhao-Wei Chu, Song-Mei Geng	
PO10-006	309
<b>A case of Blau syndrome with H313R and R471C mutations in NOD2/CARD15.</b> Yi Zheng, Xin-Yue Zhang, Qiang Zhao, Jing Li, Song-Mei Geng	
PO10-009	310
<b>Progressive osseous heteroplasia in a five-month-old boy: a case report</b> Zheng-Xiu Li, Xing-Hua Gao	
PO10-010	310
<b>Severe combined immunodeficiency presented as mixed infection</b> Cong-Cong Xu, Hao Chen, Jian-Fang Sun	
PO10-012	311
<b>Novel compound heterozygous mutations in RAG1 in a patient with cutaneous lymphoproliferative disease: A case report</b> Cong-Cong Xu, Zhi-Ming Chen, Jing-Shu Xiong, Hao Chen, Jian-Fang Sun	
PO10-013	311
<b>Fine mapping and subphenotyping implicates ADRA1B gene variants in psoriasis susceptibility in a Chinese population</b> Xing Fan	
PO10-014	312
<b>A case of primary erythromelalgia</b> Rong-Xin Zhang, Cai-Xia Tu, Ling Sun, Ling Jin	
PO10-015	312
<b>Generalized linear porokeratosis coexisted with multiple SCCs</b> Qiang Zhao, Song-Mei Geng, Hong-Mei Zhou, Qian Shang	
PO10-016	313
<b>Gene mutation analysis of one Chinese patient with keratosis follicularis spinulosa decalvans</b> Zhuang-Li Tang, Sheng-Xiang Xiao, Xin-Wu Niu, Xiao-Peng Wang	
PO10-019	313
<b>Missense mutation of the ABCC11 gene is associated with axillary osmidrosis susceptibility and clinical phenotypes in the Chinese Han population</b> Yun-Qing Ren, Hua-Tuo Dai, Lun-Fei Liu, Min Zheng	
PO10-020	313
<b>Trichoepithelioma in monozygotic twins: A case report</b> Zhao-Yuan Wang, Xue-yan Chen, Xiao-Yong Man	
PO10-021	314
<b>Lamellar ichthyosis: A case report</b> Juan Bai, Jian-Jun Qiao, Yin-Hua Wu, Hong Fang	
PO10-022	314
<b>A novel frameshift SERPINB7 mutation in a Chinese case with Nagashima-type palmoplantar keratosis: case report and review of the literature</b> Sheng-Yuan Hua, Xiao Miao, Wei-Wei Mao, Liang Hua, Jie Chen, Bin Li	
PO10-024	314
<b>A diagnostic algorithm of genetic reticulate pigmentary disorders</b> Jia Zhang, Ming Li, Zhi-Rong Yao	

PO10-025	315
<b>Effects of DOCK8 deficiency on IL-10 producing regulatory B cells</b> Jin-Qiu Jiang, Tao Qin, Xiao-Dong Zhao, Xiao-Yan Luo, Hua Wang	
PO10-026	315
<b>First male infant with incontinentia pigmenti and a deficiency in the NEMO pathway in China</b> Jing Zhang, Min Lin, Meng-Ting Lin, Jin-Wen Huang, Chao Ji, Bo Cheng	
PO10-027	316
<b>A case report of scrotum steatocystoma multiplex</b> Yan Li	
PO10-029	316
<b>Novel compound heterozygous mutations in GJB3 gene in a family with erythrokeratoderma variabilis et progrssiva</b> Yong-Qiong Deng, Xia Xiong	
PO10-031	316
<b>A case of collodion baby report</b> Shi Gong, Qiao Liu, Qing-Shan Li	
PO10-033	317
<b>A case report of pachydermoperiostosis</b> Jin Qing, Mei-Ping Huang	
PO10-034	317
<b>Eruptive pruritic papular porokeratosis: A case report and literature review</b> Wanlu Zhang, Cheng-Rang Li	
PO10-035	317
<b>A Chinese Hermansky–Pudlak Syndrome patient with two novel mutations on HPS4 gene</b> Teng Liu, Ye-Feng Yuan, Xiu-Min Yang, Ai-Hua Wei	
PO10-036	318
<b>Application of MLPA in the genetic testing of oculocutaneous</b> Ying-Zi Zhang, Da-Yong Bai, Zhan Qi, Su-Zhou Zhao, Xiu-Min Yang, Wei Li, Ai-Hua Wei	
PO10-038	318
<b>Case series of neck accessory tragus</b> Jian Shi, Zhi-Xiang Hua, Xu Miao	
PO10-039	318
<b>A rare splicing mutation of MVK gene in one family with facial porokeratosis</b> Hui Chen, Rui-Feng Sun, Wei Zhu, Shi Lian	
PO10-041	319
<b>Genetic diagnosis of one patient misdiagnosed with epilepsy: A case report</b> Lin-Li Liu, Chun-Shui Yu	
PO10-042	319
<b>Novel mutations in Chinese Han patients with tuberous sclerosis complex: case series and review of the literature</b> Li-Yun Zheng, Min Gao	
PO10-043	319
<b>CHILD syndrome with alopecia: the NSDHL gene and its role in hair follicle development</b> Dan Wang, Sheng Wang	
PO10-044	320
<b>A novel heterozygous missense mutation of the DSG1 gene in a Chinese family with diffuse non-epidermolytic palmoplantar keratoderma</b> Dan Wang, Sheng Wang	
PO10-045	320
<b>Mutation analysis in a family with woolly hair</b> Cong Yu, Xue-Yan Yao, Guang-Dong Wen, Cheng Zhou, Jian-Zhong Zhang, Hong-Jun Xu	

## *PO11 Metabolic and Endocrine Disorders*

- PO11-001 321  
**Investigation and analysis of humoral autoimmunity in the risk factors of pretibial myxedema**  
Chang-Gui Lan
- PO11-002 321  
**Pretibial myxedema presenting as elephantiasis**  
Sang-Myung Park, Joong-Yoon Choi, Ye-Jin Lee, Bark-Lynn Lew, Woo-Young Sim
- PO11-003 322  
**Skin vegetations: a rare sign of primary systemic amyloidosis**  
Meng-Hua Li, Li-Ming Wu, Zhang-Yu Bu
- PO11-004 322  
**Primary system amyloidosis: a case report and review of the literature**  
Jia-Jia Xie, Xiang Xie, Kang Zeng, Kai Cui
- PO11-005 322  
**Porphyria cutanea tarda**  
Xia Hua, Yong-Hong Lu
- PO11-006 323  
**Papular xanthomas with a destructive osteoarthropathy: A rare association**  
Pei-Mei Zhou, Lin Wang, Fan Li, Si-Yu Chen
- PO11-007 323  
**Generalized erythematous papules, plaques and thereafter hardening of the skin**  
Lu Gan, Hao Chen, Yi-Qun Jiang, Jian-Fang Sun
- PO11-008 323  
**Scleromyxedema: A case report**  
Wen-Yuan Ding, Xin-Xiang Lyu
- PO12 Photodermatoses*
- PO12-005 324  
**n-3 PUFA protect skin from ultraviolet induced acute injury on SKH-1 hairless mice**  
Pei-Ru Wang, Yu-Ting Xu, Jia-Tong Han, Xiu-Li Wang
- PO12-006 324  
**Knowledge, attitudes and practice about solar ultraviolet radiation between urban and rural residents in Beijing**  
Fen Peng, Man Li, Zhou Chen, Jian-Zhong Zhang
- PO12-008 325  
**Voriconazole enhances skin tumor development by UVB through the mechanism its induction of inflammatory response**  
Nozomi Yamano, Makoto Kunisada, Chieko Hosaka, Chihiro Takemori, Chikako Nishigori
- PO12-001 325  
**Degraded melanosomes are incompetent to protect epidermal keratinocytes against UV damage**  
Tie-Chi Lei
- PO12-003 326  
**Association of chronic sun exposure with distinct histone acetylation changes in human skin**  
Shu Ding, Jing Chen, Qing-Hai Zeng, Ai-Yuan Guo, Jian-Yun Lu, Li-Na Tan, Jian Kang, Jin-Hua Huang
- PO12-004 326  
**Risk factors for rosacea in China: A retrospective case-control study**  
Ben Wang, Ying-Xue Huang, Ji Li, Dan Jian, Hong-Fu Xie, Wei Shi
- PO12-007 327  
**In vivo CLSM features of rosacea**  
Yu-Juan Xiao, Qing-Chun Diao, Kang Zeng
- PO12-009 327  
**Observation of Colloid Milium by dermoscopy and Literature Review**  
Ying Ji, Wen-Li Feng, Yan Ma, Jin-Yu Zhang, Jia-Jia Wang, Xiao-Qiang Jia

## *PO13 Pigmentary Disorders*

- PO13-004 327  
**Using reflectance confocal microscopy to observe in vivo melanolysis after treatment with the picosecond alexandrite laser and Q-switched Nd: YAG laser in melasma**  
Da Jung Jo, In-Hye Kang, Ji Hwoon Baek, Min Jae Gwak, Sang Jun Lee, Min Kyung Shin
- PO13-007 328  
**Linearly distributed multiple melanocytic nevi on the right shin**  
Yeong Ho Kim, Hyun Ji Lee, Soo Young Lee, Hyo Jung Kim, Yu Mee Song, Ju Hee Han, Chul Hwan Bang, Ji Hyun Lee, Young Min Park, Jun Young Lee
- PO13-013 328  
**Comparison of dermoscopic features between congenital and acquired acral melanocytic nevi in Korean patients**  
Dongyoung Roh, Woo-Il Kim, Min-Young Yang, Won-Ku Lee, Tae-Wook Kim, Sung-Min Park, Hyun-Joo Lee, Gun-Wook Kim, Hoon-Soo Kim, Hyun-Chang Ko, Byung-Soo Kim, Moon-Bum Kim
- PO13-019 329  
**Psychological and neurological effects in the onset, development and prevention of vitiligo**  
Man Li, Juan Du
- PO13-023 329  
**Incontinentia pigmenti in a Japanese female infant with a novel frameshift mutation in the *IKBKG* gene**  
Min Li
- PO13-024 329  
**Repigmentation of vitiligo-associated leucotrichia with traditional Chinese medicine**  
Qi-Ping Chen, Xian-Ting Xu, Min-De Chen
- PO13-025 330  
**Ashy dermatosis with positive patch test to gold sodium thiosulfate, cobalt chloride and carba mix**  
Ayumi Korekawa, Koji Nakajima, Hajime Nakano, Daisuke Sawamura
- PO13-027 330  
**Involvement of Dickkopf-related protein 1 in melanogenesis: focus on solar lentigo lesion**  
Yin-Juan Wang, Céline Viennet, Jean Yves Berthon, Li He, Philippe Humbert
- PO13-001 331  
**Dermal nevus cells from congenital nevi or acquired pigmented nevus can penetrate the dermis when seeded on the de-epidermized dermis alone**  
Xian Dong, Hong-Guang Lu, Lei-wei Jiang, Yuan-Zhi Huang
- PO13-002 331  
**Oxidative stress enhances CD8+T cells activation and cytotoxicity in vitiligo via upregulating IL-15 expression through activating the NFκB pathway in keratinocytes**  
Xu-Guang Chen, Jia-Xi Chen, Pan Kang, Shu-Li Li, Gang Wang, Tian-Wen Gao, Chun-Ying Li
- PO13-003 332  
**Clinical application exploration of VISIA in nursing of patients with chloasma**  
Shi-Qin Tao
- PO13-005 332  
**A pilot study of oral tranexamic acid and glycyrrhizin compound in the treatment of recalcitrant Riehl's melanosis**  
Zhong-Yi Xu, Xiao-Xue Xing, Li Chen, Lei-Hong Xiang
- PO13-006 332  
**TRPM2-dependent NLRP3 inflammasome activation exacerbates the oxidative stress-driven immune response in patients with vitiligo**  
Shu-Li Li, Pan Kang, Wei-Gang Zhang, Xiu-Li Yi, Gang Wang, Tian-Wen Gao, Zhe Jian, Chun-Ying Li
- PO13-009 333  
**Clinical research of 308 nm excimer lamp combined with 830 nm infrared light in the treatment of vitiligo**  
Caixia TU, Mei-Ya Jiang, Yang Wang, Ya-Hui Chen

PO13-010	333
<b>Association analysis revealed one susceptibility locus associated with vitiligo in the Chinese Han population</b>	
Fang Fang, An-Ping Zhang, Xian-Fa Tang, Jing-Jing Yang, Su-Li Zhao	
PO13-011	334
<b>Dermoscopy evaluation the efficacy of isotretinoin treatment of confluent and reticulated papillomatosis</b>	
Xin Zhou	
PO13-012	335
<b>A case report of pigmented pityriasis rosea in child</b>	
Yong-hong Lu, Min Lin	
PO13-014	335
<b>A case of facial nevus depigmentosus getting remarkable repigmentation by treatment with 308-nm excimer laser</b>	
Qing-Hai Zeng, Qi Shi, Jin-Hua Huang, Jian Huang, Zhen Tang, Cai-Yun Xi, Jing Chen	
PO13-015	335
<b>A Case of Laugier-Hunziker syndrome with platelet reduction misdiagnosed as multiple hairpins</b>	
Chun-Yang Zhang, Xue-Li Li, Zhen-Lu Li, Qi Zhang, Hong Chen	
PO13-016	336
<b>Effects of PINK1 on melanocyte damage induced by oxidative stress</b>	
Li-Juan Wang, Xiao-Lan Ding, Zhen Li, Man Li, Qian-Xi Xu, Jian-Zhong Zhang, Juan Du	
PO13-017	336
<b>Regulation of miRNA-211 by MMP9 affects the adhesion ability of epidermal melanocyte to basement membrane</b>	
Meng-Yun Su, Tie-Chi Lei	
PO13-018	337
<b>Vitamin C and its derivatives suppress melanogenesis through acidification in melanocytes</b>	
Fang Miao, Tie-Chi Lei	
PO13-020	337
<b>Metformin: ameliorate the melanocyte of vitiligo by inducing autophagy through AMPK/mTOR signal pathway</b>	
You Hua, Xiu-Zu Song	
PO13-021	337
<b>Melanotic lupus erythematosus: A report of two cases and literature review</b>	
Qian-Yue Xu, Yu-Wei Kong, Bo Ling, Yan Li, Hong Yu, Zhi-Rong Yao	
PO13-022	338
<b>Clinical observation on the treatment of vitiligo with carbon dioxide fractional laser together with topical medication</b>	
Chen-Chen Si, Dan Luo	
PO13-026	338
<b>Dowling–Degos disease: uptodate progresses in research</b>	
Yingda Wu, Wen-Rui Li, Wan- Zhang, Ping Cheng, Cheng-Rang Li	
PO13-028	339
<b>Characteristics and clinical significance of dermoscopy and reflectance confocal microscopy in children with hypopigmented diseases</b>	
Jian-Ping Tang, Huan Wang	
<i>PO14 Psoriasis</i>	
PO14-003	340
<b>IL17F rs763780 polymorphism is associated with psoriasis and increases serum levels of interleukin-17F</b>	
Yong Beom Choe, Ji Youn Hong, Jin Hee Kim, Joo Ran Hong, Hye In Cheon, Min Seok Hur, Byung Gon Choi, Song Hee Han, Yang Won Lee, Kyu Joong Ahn	

PO14-004	340
<b>A case of psoriasis vulgaris developed in an epidermolysis bullosa simplex patient</b>	
Mi-youn Park, Ji-young Ahn, Hye-jung Jung, Hong-lim Kim, Joo-yoon Bae, Jae-in Lee, Dong-hyek Jang	
PO14-005	340
<b>Disseminated tuberculosis after adalimumab therapy in psoriasis patient</b>	
Hai-Jin Park, Jae Hong Oh, Hee Jae Park, Cheong Ha Woo, Mira Choi, Seung Pil Ham	
PO14-010	341
<b>Beneficial effect of Montecatini thermal water upon various enzymes including NADH dehydrogenase in modulation of epidermal keratinization.</b>	
Tomohiro Noguchi, Kazue Kato, Takashi Ishikawa	
PO14-018	341
<b>Good response to secukinumab in patient with palmoplantar pustulosis resistant to other biologics</b>	
InJae Jeong, SeungHui Seok, JiHae An, SeonGu Lee, HeeJung Lee, MoonSoo Yoon, DongHyun Kim	
PO14-019	342
<b>A case of interstitial lung disease and autoimmune thyroiditis associated with ustekinumab</b>	
Seon Gu Lee, Seung Hui Seok, Ji Hae An, In Jae Jeong, Dong Hyun Kim, Moon Soo Yoon, Hee Jung Lee	
PO14-020	342
<b>Down-regulation of LncRNA RP6-65G23.1 inhibits cell proliferation by p-ERK/p-AKT pathway</b>	
Qi-Qi Duan, Yan Zheng	
PO14-034	343
<b>Development of pemphigus vulgaris in a patient with erythrodermic psoriasis: because of virus?</b>	
Xin Zhao, Xiao-Qing Zhao, Meng Pan, Jie Zheng	
PO14-044	343
<b>A case of generalized pustular psoriasis with incremental administration of infliximab and granulocytapheresis in response to weak effect of secukinumab</b>	
Fuminao Kanehisa	
PO14-048	343
<b>Secukinumab decreases the serum KL-6 level in psoriasis patients with elevated serum KL-6 level</b>	
Hideaki Uchida, Masahiro Kamata, Chika Chijiwa, Shintaro Takeoka, Saki Fukaya, Kotaro Hayashi, Atsuko Fukuyasu, Takamitsu Tanaka, Takeko Ishikawa, Takamitsu Ohnishi, Yayoi Tada	
PO14-051	344
<b>Increased risk of atherosclerotic cardiovascular disease among the patients with psoriasis in Korea: a 17-year nationwide prospective cohort study</b>	
Jongwook Oh, Tae-Gyun Kim, Keum Ji Jung, Jae Won Lee, Minseok Lee, Sun Ha Jee, Min-Geol Lee	
PO14-054	344
<b>Prevalence of nonalcoholic fatty liver disease diagnosed by ultrasonography in psoriasis patients with abnormal liver function test</b>	
Hyunyi Suh, Ji Young Ahn, Mi Youn Park, Jai Il Youn	
PO14-001	345
<b>Pathological actors of surgical wound healing in psoriasis</b>	
Hang Shi	
PO14-002	345
<b>Study on the role of RIPK3 in the pathogenesis of psoriasis</b>	
Meng-Di Zhang, Yan Zheng	
PO14-006	346
<b>A case of inflammatory polyarthritis in a patient with psoriasis-psoriatic arthritis or rheumatoid arthritis</b>	
Xu-Guang Chen, Guan-Nan Zhu, Xiao Zhang, Meng Fu, Gang Wang, Tian-Wen Gao, Chun-Ying Li	

PO14-007	346
<b>Intradermal and topical bioavailability of a vasodilator in normal and psoriatic skin</b> Yue Zheng, Wei Lai, Howard Maibach	
PO14-008	347
<b>IL-22 downregulates Cx43 expression and decreases gap junctional intercellular communication through activating JNK pathway in psoriasis</b> Jing-Yao Liang, Ping-Jiao Chen, Chang-Xing Li, San-Quan Zhang, Ru-Jun Xue, Jian-Qin Wang, Xi-Bao Zhang	
PO14-009	347
<b>Long-term safety and efficacy of continuous acitretin monotherapy for three children with different severe hyperkeratotic disorders in China</b> Jing-Yao Liang, Ping-Jiao Chen, San-Quan Zhang, Xin Tian, Xi-Bao Zhang	
PO14-011	347
<b>Waist-to-hip ratio) and body mass index: The comparison of the predictive value of the severity of psoriasis</b> Dan-Rong Jing	
PO14-012	348
<b>Microbiome community analyses identify propionibacterium and corynebacterium as psoriasis-specific taxa</b> Cheng Quan, Jie Zheng	
PO14-013	348
<b>A new risk polymorphism rs10403848 of CARD8 significantly associated with psoriasis vulgaris in northeastern China</b> Pei Yu, Yu-Zhen Li	
PO14-014	349
<b>Circular RNA expression profile and analysis of their potential function in psoriasis</b> Meng Qiao	
PO14-015	349
<b>Depression and anxiety among patients with psoriasis: a hospital-based study</b> Xing-Yu Zhang, Yi Xiao	
PO14-016	350
<b>A randomized, double-blind, controlled clinical study on the curative effect of Huaier on mild-to-moderate psoriasis and an experimental study on the proliferation of Hacat cells</b> Feng Zhang	
PO14-017	350
<b>Comparison of efficacy and factors affecting relapse after drug withdrawal of two biologics in treatment of moderate to severe psoriasis</b> Xia Li, Ni Na	
PO14-021	351
<b>Association of <i>NLRP1</i> and <i>NLRP3</i> polymorphisms with psoriasis vulgaris risk in northeastern China</b> Pei Yu, Yu-Zhen Li	
PO14-022	351
<b>Expression and function of CGRP and 5-HT in the mouse psoriasis model with depression</b> Hong-Mei Wang, Hui Wang	
PO14-023	352
<b>Successful treatment of three cases refractory psoriasis with infliximab</b> Jian-Xin Xia, Xian-Hua Jin, Yan Mou, Xin-Yi Huang	
PO14-024	352
<b>Enhanced Cyr61 levels in patients with psoriasis vulgaris</b> Li-Xin Fu, Tao Chen, Qiao-Mei Sun, Pei-Mei Zhou, Li-Wen Zhang	
PO14-025	353
<b>Enhanced serum interferon-lambda 1 interleukin-29 in patients with psoriasis vulgaris</b> Li-Xin Fu, Tao Chen, Qiao-Mei Sun, Pei-Mei Zhou, Li-Wen Zhang	

PO14-026	353
<b>A case of generalized verrucous planus lichen combined with thymoma and cirrhosis</b> Li-Li Deng	
PO14-027	354
<b>Research progress of traditional chinese medicine treatment for psoriasis vulgaris</b> Wen-Zhao He, Hua Du	
PO14-028	354
<b>PD-1 targeted therapies rebalance T-cell activity to erect autoimmunity in psoriasis</b> Shiguang Peng, Mei Cao, Xin Li, Hong-Shen Wang, Sheng-Cai Qi, Yan-Ling He	
PO14-029	354
<b>Efficacy and safety of infliximab in the treatment of the Chinese patients with psoriasis</b> Jin-Zhu Guo, Wen-Hui Wang, Chun-Lei Zhang	
PO14-030	355
<b>Advanced findings of proteomic in psoriasis</b> Yuan Zhou, Min Zheng	
PO14-031	356
<b>MiR-20a-3p regulates TGF-<math>\beta</math>1/Survivin pathway to affect keratinocytes proliferation and apoptosis by targeting SFMBT1 in vitro</b> Rong-Hua Li	
PO14-032	356
<b>Investigation of the clinical and immunological characteristic of eczematous psoriasis</b> Di-Xin Wang, Jie Zheng	
PO14-033	357
<b>A case of psoriasis rupioides</b> Yun-Lei Pan, Shun-Li Tang, Si-ting Zheng, Sha Zhou, Li-Na Xu, Jian-Jun Qiao, Hong Fang	
PO14-035	357
<b>Local production of prolactin in lesions may play a pathogenic role in psoriatic patients and imiquimod-induced psoriasis-like mouse model</b> Hui Yang, Xia Li, Feng Xue, Qun-Li Xia, Xin Zhao, Di- Wang, Li-Hong Chen, Hua Cao, Han Xu, Xiao-Yan Shen, Wei-Ru Yuan, Xiao-Qing Zhao, Ruo-Fei Shi, Jie Zheng	
PO14-036	358
<b>Observation of the clinical efficacy in long-term infliximab treatment of psoriasis</b> Xin Guan, Chun-Lei Zhang	
PO14-037	358
<b>Progress of psoriasis and PD-1 correlation research</b> Sheng-Yuan Hua, Jie Chen, Bin Li, Rong Xu, Yi-Fei Wang, Wei-Wei Mao, Xiao Miao	
PO14-038	358
<b>Study on the relationship between the TCM four diagnosis methods and the curative effect of psoriasis based on the four-element connection number</b> Sheng-Yuan Hua, Bin Li, Qi Zheng, Rong Xu, Xin Li, Ke-Qin Zhao	
PO14-039	359
<b>Research progress of psoriasis and PRINS lncRNA correlation</b> Sheng-Yuan Hua, Xiao Miao, Wei-Wei Mao, Xin Li, Bin Li, Jie Chen	
PO14-040	359
<b>Sexual function in psoriatic males</b> Jing Zhang, Chao Ji, Bo Cheng, Jin-Wen Huang, Min Lin	
PO14-041	360
<b>Microbiota unbalance deteriorated psoriasiform dermatitis by T cell response</b> Jing-Wen Deng, Ling Han, Chuan-Jian Lu	
PO14-042	360
<b>Clinical application of Etanercept (Yisaipu®) to treat 5 patients with severe psoriasis</b> Ying-Guo ding, Shan Zhang, Xiao-Min Li	
PO14-043	361
<b>A young man with recurrent cough, fever, skin rash, headache, muscle and joint pain: SAPHO syndrome involving lung and dura mater</b> Zhen-Ying Zhang	

PO14-045	361
<b>Enhancement of Epidermal Function Delays Relapse of Psoriasis: A Pilot Self Controlled Trial</b> Li Ye, Jeong Sekyoo, Jongmi Lim, Wenhai Luo, Chengzhi Lv, Zhen Wang, M.Elias Peter, Mao-Qiang Man	
PO14-046	362
<b>Urine squamous cell carcinoma antigen in psoriasis patients: the first pilot study</b> Yi Zhao, Zi-Wen Sun, Xiao-Min Shi, Yun Wang, Su-Zhen Ji	
PO14-047	362
<b>Relationship between traditional Chinese medicine constitutional types with psoriasis vulgaris (winter type): an observational study</b> Jiao Yang, Chen-Chen Xu, Zhan-Shuo Xiao, Bing-Nan Cui	
PO14-049	363
<b>Differentially expressed genes of psoriasis in Xinjiang by gene expression profile</b> Fei Guo, Liang Feng, Fang-Ling Ma, Rui Yang, Hong-Xia Liu	
PO14-050	363
<b>Molecular mechanism of paeoniflorin regulating keratin 17 expression in the targeted therapy of psoriasis</b> Xiao-Cui Bai, Chen Yu, Er-Le Dang, Gang Wang	
PO14-052	364
<b>Self-management system for psoriasis patients based on artificial intelligence technology</b> Xiao-Ming Liu, Kai Liu, Su-Chun Hou, Zhen-Ying Zhang, Zheng-Feng Li, Ying Yang, Yu-Lin Zheng	
PO14-053	364
<b>Efficacy of etanercept and acitretin on erythrodermic psoriasis</b> Feng Li	
<i>PO15 Sexually Transmitted Diseases</i>	
PO15-004	365
<b>Histologic and immunohistochemical analysis of secondary syphilis</b> Yu-Wei Wang, Ying Zhou	
PO15-016	365
<b>Chronic syphilitic monoarthritis in a delayed diagnosis of the patient without lesion</b> Chen Li, Xi-Guang Liu	
PO15-022	365
<b>Epidermiological Investigation of HPV and Chlamydia trachomatis Co-Detection on cervical samples of women with external genital warts</b> Man-Li Qi, Lin Zhu	
PO15-027	366
<b>CXCL13+ fibroblast-like cells and inducible skin-associated lymphoid tissue (iSALT)-like structures in secondary syphilis</b> Takashi Nomura, Toshiaki Kogame, Kenji Kabashima	
PO15-001	366
<b>HIV associated cell death: necrosis enhances, while apoptosis restricts viral transmission</b> Jian-Bo Zhang, Shi-Song Jiang, Wenshu Lu, Hui Luo, Xu-Ying Zhou, Qing-Ling Li	
PO15-002	367
<b>Human papillomavirus-like particles activate Toll-like receptor signaling pathway and inhibit autophagy in dendritic cells</b> Si-Yuan Sun, Rui Han, Hao Cheng	
PO15-003	367
<b>Expression and significance of lncRNA RP11-1100L3.8 in condyloma acuminatum</b> Xiao-Yan Liu, Li-Ming Ruan, Yu Zhang	
PO15-005	368
<b>A comparative study of intestinal flora, short-chain fatty acids, and injury of intestinal mucosal in HIV-positive and -negative subjects</b> Fan Cui, Hang-Yu Xie, Yong Qing	

PO15-006	368
<b>Clinical analysis of HIV/AIDS patients with solar dermatitis</b>	
Yu-Ye Li, Ummair Saeed	
PO15-007	369
<b>Clinical prediction and diagnosis of neurosyphilis in patients without human immunodeficiency virus infection</b>	
Wu-Jian Ke	
PO15-008	369
<b>Successful treatment of Jarisch-Herxheimer reaction in a patient with neurosyphilis</b>	
Xin Su, Ming-Ming Liu, Xiao-Wen Xue, Wen-Jun Liao, Gang Wang, Cui-Ling Ma	
PO15-009	369
<b>A novel nested real-time PCR for Treponema pallidum DNA in syphilis biospecimens</b>	
Xing-Dong Ye, Yi Zhang, Xiang-Nong Dai, Ze-Fang Ren, Hong-Da Lin	
PO15-010	370
<b>Detection and clinical significance of self-made HPV16 E7 polyclonal antibody in cervical lesions</b>	
Ling-Jing Chen, Hao Cheng	
PO15-011	371
<b>Autophagy activation is involved in HPV11 E6 transfected HaCaT cell via mTOR pathway</b>	
Boya Zhang, Hao Cheng	
PO15-012	372
<b>Transcriptional regulation of genes in cervical epithelial cell line containing HPV16 E6</b>	
Si-Yuan Sun, Rui Han, Hao Cheng	
PO15-014	372
<b>Analysis of clinical features of asymptomatic neurosyphilis</b>	
Cheng Zhan, Pei-Hong Sun	
PO15-015	373
<b>Expert Consensus: Determine and ermeasures on drug-resistance and persist infection of Chlamydia trachomatis genital Infection</b>	
Man-Li Qi	
PO15-017	373
<b>Relapsing secondary syphilis of reintection: a case report</b>	
Mei Yang	
PO15-018	373
<b>A systematic review of atypical cutaneous manifestations of secondary syphilis</b>	
Xiao-Ke Liu, Jun Li	
PO15-019	374
<b>Papulonodular secondary syphilis presenting as pseudolymphoma of the skin</b>	
Guo-Zhang Ma, Xi-Guang Liu	
PO15-020	374
<b>Predictors for serofast state after treatment among patients with syphilis: A systematic review</b>	
Xiao-Ke Liu	
PO15-021	375
<b>Malignant syphilis in a HIV negative male patient</b>	
Liu-Yuan Wang, Hong-Fang Liu, Bin Yang, Li-Gang Yang	
PO15-023	375
<b>Molecular prevalence of 23S rRNA resistant mutation sites 2058G and 2059G in Xinjiang Treponema pallidum</b>	
Xiao-Dong Wang	
PO15-024	375
<b>Clinical significance of abnormal expression of IL-21 inpatients of GH</b>	
Shi Gong, Qiao Liu, Qing-Shan Li	

PO15-025	376
<b>Changes of the Serum IL-21 Levels in the patients with genital herpes before and after valciclovir joint thymopeptid enteric-coated tablets therapy</b>	
Shi Gong, Qiao Liu, Qing-Shan Li	
PO15-026	376
<b>Sensitive detection of Treponema pallidum DNA from the whole blood of patients with syphilis by the nested PCR assay</b>	
Cui-Ni Wang, Yuan-Yuan Cheng, Yuan-Yuan Wang, Wei-Ming Gong, Yi-Hong Qian, Zhi-Fang Guan, Hai-Kong Lu, Xin Gu, Mei Shi, Ping-Yu Zhou	
PO15-028	377
<b>Prevalence and genotype of Human Papillomavirus in different sites of condyloma acuminatum patients</b>	
Chun-Ping Ao, Jia-Jia Xie, Li-Fen Jiang, Hui Liu, Jun-Peng Li, Kang Zeng	
PO15-029	377
<b>Secondary syphilis presented with impetigo-like lesions: A rare case report</b>	
Qiao-Fei Li, Xue-Biao Peng	
PO15-030	378
<b>Circulating microRNAs as potential biomarkers for the diagnosis of neurosyphilis</b>	
Kai-Qi Wu, Su-Fang Zhang, Ping-Yu Zhou	
PO15-031	379
<b>HSV-2 related recurrent genital ulcerate disease: Where we are?</b>	
Ping-Yu Zhou	
<i>PO16 Therapies</i>	
PO16-010	379
<b>Comparison of micro-insulated needle radio frequency (RF) versus carbon dioxide (CO<sub>2</sub>) laser in the treatment of syringoma</b>	
Mi-youn Park, Ji-young Ahn, Hye-jung Jung, Hong-lim Kim, Joo-yoon Bae, Jae-in Lee, Dong-hyek Jang	
PO16-011	380
<b>Large steatocystoma multiplex of forehead successfully treated with a novel 1, 927 nm diode laser</b>	
You Jin Jung	
PO16-012	380
<b>Hair growth-promoting effect of sphingolipid-mimetic compounds</b>	
Jun Hong Park, Dong Hyuk Eun, Jun Young Kim, Yong Hyun Jang, Seok-Jong Lee, Do Won Kim, Weon Ju Lee	
PO16-013	381
<b>Successful dose tapering of adalimumab by increasing interval between doses in treatment of psoriasis</b>	
Mi-youn Park, Jai-il Youn, Ji-young Ahn, Hye-jung Jung, Hong-lim Kim, Joo-yoon Bae, Jae-in Lee, Dong-hyek Jang	
PO16-014	381
<b>Two cases of wound healing by combining negative pressure wound therapy with noninvasive surgical skin closure device</b>	
Toru Kawai, Daisuke Yamada, Jun Omatsu, Yuka Mizuno, Keiko Fukazawa, Satoshi Toyama, Ai Kuzumi, Minami Sakamoto, Shunsuke Miura, Naomi Takahashi-Shishido, Kaname Akamata, Shinichi Sato	
PO16-018	381
<b>A case of subungual wart invading the nail root successfully cured with surgery combined with photodynamic therapy</b>	
Min-Zhi Wu, Liang Zhao	
PO16-020	382
<b>Fractional ultrapulse carbon dioxide laser ablation of xanthelasma palpebrarum: A case series</b>	
Sangju Lee, Wonsoon Chung	

PO16-021	382
<b>Mycobacterium Chelonae/abscessus complex infection of the limbs: a challenging clinical case</b> Li-Dan Zhang, Xin Zhou, Ling Lin, Xin Tian, Quan Luo	
PO16-026	382
<b>Therapeutic observation and mechanism analysis of the lymphoplasma exchange therapy in refractory severe immune related dermatosis</b> Shi-Jia Rao, Bi-Juan Li, Ji Li, Hong-Fu Xie, Ming-Liang Chen, Shuang Zhao, Ya-Ling Wang, Wei Shi, Qian-Jin Lu	
PO16-035	383
<b>Plum-blossom needling enhanced efficacy of ALA photodynamic therapy for the treatment of Bowen's disease</b> Yun Wu, Pei-Ru Wang, Ling-Lin Zhang, Bo Wang, Xiu-Li Wang	
PO16-038	383
<b>Survey on usage and perception for acne patches and cosmetics advertised as effective against acne, compared with hospital treatments</b> Mi-youn Park, Ji-young Ahn, Hye-jung Jung, Hong-lim Kim, Joo-yoon Bae, Jae-in Lee, Dong-hyek Jang	
PO16-039	384
<b>ALA-PDT promotes IL-1<math>\beta</math> secretion and pyroptosis in SZ95 human sebocytes via activation of NLRP3 inflammasome</b> Yu-Fen Zhang	
PO16-048	384
<b>Multi-layered polyurethane foam technique as a skin graft bolster</b> Hiroshi Kato, Motoki Nakamura, Ai Horio, Akimichi Morita	
PO16-050	385
<b>Comprehensive treatments combined with ALA-PDT for 2 cases of malignant skin tumors</b> Ling Yang	
PO16-051	385
<b>Clinical efficacy of Scalpoo® shampoo regarding increase in hair thickness and decrease in hair shedding</b> Byung In Ro, Jong Baik Kim, Hoo Min Choi, Eun Jung Ko	
PO16-055	386
<b>A case of extensive burn injury treated with artificial dermis and cultured epithelial autograft</b> Tomofumi Numata, Takumi Sakamoto, Satoshi Tsuboi, Takanobu Kan, Mikio Kawai, Michihiro Hide	
PO16-059	386
<b>Study of pain level and relative factors during ALA-photodynamic therapy: A clinical retrospective analysis</b> Zhe Zheng, Yun-Feng Zhang, Ling-Lin Zhang, Lei She, Bo Wang, Xiu-Li Wang	
PO16-001	387
<b>Clinical observation of Qinglanxiaoyou decoction in treating multiple verruca vulgaris</b> Sheng-Yuan Hua, Jie Chen, Wei-Wei Mao, Xin Li, Bin Li	
PO16-003	387
<b>A new strategy for angiolymphoid hyperplasia with eosinophilia on auriculae</b> Qian Zhang, Wen-Bo Bu, Fang Fang	
PO16-004	387
<b>ALA-PDT suppressing the cell growth through Akt-/Erk-mTOR-p70 s6k pathway in human SZ95 sebocytes in vitro</b> Wen-Jie Liu, Qianqian Wang, Jiang Tuo, Yufeng Chang, Jiayi Ying, Min Jiang, Christos C. Zouboulis, Lei-Hong Xiang	
PO16-005	388
<b>A case of pruritus pigmented reticulated patches over the upper body.</b> Yue-Tong Qian, Dong-Lai Ma	
PO16-006	388
<b>Positive effects of hydrogen-water bathing in patients of psoriasis and parapsoriasis en plaques</b> Qin-Yuan Zhu, Yue-Shen Wu, Yong-Mei Li, Zi-Hua Chen, Lan-Ting Wang, Hao Xiong, Er-Hong Dai, Jian-Hua Wu, Bin Fan, Li Ping, Xiao-Qun Luo	

PO16-007	389
<b>Combining Steri-Strip with fusidic acid cream to treat the surgical wound on the face</b> Ming-Yi Chen, Zhe Dai, Feng Pan, Chuan-Peng Ying, Dong-Sheng Luo, Geng-Wu Dai	
PO16-009	389
<b>Autologous cultured epidermal grafts as a novel surgical approach for acral vitiligo</b> Jin-Ran Lin, Lu-Yan Tang, Shu-Jun Chen, Jian Li, Qin-Yuan Zhu, Wen-Yu Wu, Wen-Wen Fu, Jin-Hua Xu	
PO16-015	390
<b>Rosai-Dorfman disease primary to face: A case report</b> Ming-Jing Fu, Yong-Jun Piao, Zhi-Qi Song	
PO16-016	390
<b>Efficacy and safety of 2% supramolecular salicylic acid compared with 5% benzoyl peroxide/0.1% adapalene in the acne treatment: A randomized, split-face, open-label, single-center study</b> Yue Zheng, Wei Lai	
PO16-017	391
<b>A case of nasorostral sporotrichosis was misdiagnosed</b> Li Zhang, Ke-Ying Guo, Zhen-Ying Wang, Sheng-Hua Wang	
PO16-019	391
<b>Successful treatment of a case of cutaneous dirt-adherent disease using compound resorcinol ointment</b> Li-Jie Chen, Jing-Yao Liang, Xiao-Dong Li, Lei Shao, Yu-Mei Liu, Jian-Qin Wang	
PO16-022	392
<b>Ferroptosis may serve as negative regular in the pathogenesis of melanoma</b> Zhen-Ying Wang, Li Zhang, De-hui Jin, Dong-Mei Ma, Lin-Lin Xu	
PO16-023	392
<b>ALA-PDT in a patient with secondary perineum EMPD, palliative care rather than treatment</b> Shu-Zhan Shen, Pei-Ru Wang, Guo-Long Zhang, Jie Ji, Yun-Feng Zhang, Xiu-Li Wang	
PO16-024	392
<b>Aminolevulinic acid photodynamic therapy for recalcitrant facial flat warts</b> Si-Ting Zheng, Yun-Lei Pan, Shun-Li Tang, Sha Zhou, Jian-Jun Qiao, Hong Fang	
PO16-025	393
<b>Clinical observation of treating alopecia areata with total glucosides of white paeony capsules combined with CO2 He-Ne laser</b> Xuan Li	
PO16-027	393
<b>Curative effect observation of AHA combined hyaluronan dressing in treating 60 acne vulgaris cases</b> Ping Liu, Lan Liu, Wen-Ni Lei, Dan-Dan Luo	
PO16-028	394
<b>Function of comprehensive nursing intervention in treating acne vulgaris by AHA</b> Ping Liu, Lan Liu, Wen-Ni Lei, Yu-Dan Wang	
PO16-029	394
<b>Application of nursing intervention in treating slight and moderate acne patients by supermolecule BHA</b> Ping Liu, Lan Liu, Wen-Ni Lei, Qin Zhang	
PO16-030	394
<b>Photodynamic therapy with topical imiquimod treated a Bowen's disease secondary to leukoplakia in the vulvar region successfully: A case report</b> Yuan Cao, Chuan Ma, Jin-Song Han, Chun-Lei Zhang	
PO16-031	395
<b>Anti-tumor effects of dihydroartemisinin alone and in combination with methotrexate in cutaneous T-cell lymphoma cells</b> Qian Zhang, Yi-Meng Wang, Chun-Lei Zhang	

PO16-032	395
<b>Observation of the curative effect on chronic urticaria with acupoint catgut embedding therapy</b>	
Xiao-Ding Cheng, Yong-Hong Lu, Bo Wu, Pei-Mei Zhou, Cun-Huo Jiang, Jia-Hong Zhong, Qun-Ying Zhou	
PO16-033	396
<b>Successful treatment of three cases of perianal giant condyloma acuminatum with Paiteling</b>	
Jian-Xin Xia, Lei Yang, Xin-Yi Huang, Xian-Hua Jin	
PO16-034	396
<b>Conventional vs. daylight 5-Aminolevulinic Acid-Photodynamic therapy for actinic keratosis of the face and scalp: a randomized and prospective study in China</b>	
Lu-De Zhu, Pei-Ru Wang, Guo-Long Zhang, Ling-Lin Zhang, Xiao-Jing Liu, Chan Hu, Xiao-Qin Yang, Zhong-Xia Zhou, Xiu-Li Wang	
PO16-036	397
<b>Psoriasiform dermatitis with high fever in an old man: Bazex syndrome</b>	
Zhen-Ying Zhang	
PO16-037	397
<b>Clinical evaluation on the treatment of acute eczema with ozonated water hydrophaticcompress combined with desonide cream</b>	
Ya-Yun Fan, Shu-Ping Guo	
PO16-040	398
<b>Radiotherapy in keloids treatment</b>	
Rong Li, Kun Chen	
PO16-041	398
<b>Clinical Observation of acupoint-injection of Astragalus injection solution combined with CO2 He-Ne laser in the treatment of alopecia areata</b>	
Bo Wu	
PO16-042	399
<b>Clinical experience of treating dermatosis and cypridopathy with 5-aminolevulinic acid-photodynamic therapy (ALA-PDT)</b>	
Xue-Ying Liu	
PO16-043	399
<b>Comparison of the efficacy and safety of fractional CO2 laser and fractional Er: YAG laser for the treatment of xanthelasma palpebrarum: A randomized split-face controlled trial</b>	
Xiao-Han Duan, Yi Zhao	
PO16-044	400
<b>Treatment of rosacea with photodynamic therapy in Chinese patients: a pilot study</b>	
Rui Yin	
PO16-045	400
<b>5-aminolevulinic acid photodynamic therapy in refractory vulvar lichen sclerosus et atrophicus</b>	
Rui Yin	
PO16-046	401
<b>Effects of human acellular amniotic membrane for small defect on nasal ala and nasal tip</b>	
Si-Liang Xue	
PO16-047	401
<b>Clinical observation of 44 cases of 308 nm excimer light combined with phototherapy penetration oil in the treatment of localized vitiligo</b>	
Shi Gong, Qiao Liu, Qing-Shan Li	
PO16-049	402
<b>Clinical and pathological analysis on 25 cases with lichen planus pigmentosus</b>	
Hong Yang, Shi-Rong Yu	

PO16-052	402
<b>Ultrapulse carbon dioxide laser, an option to treat mild to moderate onychomycosis? A retrospective analysis</b>	
Xiao-Han Duan, Dian Chen, Yuan Jiang, Yi Zhao	
PO16-053	402
<b>Observation of the efficacy of anti-inflammatory combined with antifungal drugs in treating tinea incognito</b>	
Xin-Cai Xiong, Hai-Xia Liu	
PO16-054	403
<b>Desonide combine with timolol for the treatment of superficial infantile hemangiomas</b>	
Change Zhang, Wu Guo, Yu-Zi Di, Qing-Lian Ge	
PO16-056	404
<b>Clinical observation of gentamicin wet dressing combined with He-Ne laser in treatment of herpes zoster</b>	
Mi Gan, Li-Hui Peng	
PO16-057	404
<b>Efficacy of surgery combined with ALA photodynamic therapy for Bowens disease</b>	
Li-Hui Peng, Mi Gan	
PO16-058	404
<b>Clinical observation of cutaneous nerve block technique combined with intradermal injection of botulinum toxin a in treatment of postherpetic neuralgia</b>	
Shuai Tan, Tao-Yuan Huang, Ren-Liang He, Ding-Heng Zhu, Xian Ao	
PO16-060	405
<b>Demethylzeylasteral inhibits the skin trafficking of CD8+ T cells in patients with vitiligo through the inactivation of IFN-<math>\gamma</math>-JAK-STAT1-CXCL10 signaling pathway in keratinocytes</b>	
Yu-Qian Chang, Wei-Gang Zhang, Chun-Ying Li	
<i>PO17 Miscellaneous</i>	
PO17-001	405
<b>Dermoscopic features of vulvar lichen sclerosis in Chinese population</b>	
Yi-Xin Luo, Jie Liu	
PO17-004	406
<b>Generalized Granuloma annulare with tuberculosis and cutis laxa: A case report</b>	
Yi-Fei Wang, Xiu-Lian Xu	
PO17-005	406
<b>A case of pityriasis lichenoides et varioliformis acuta with numerous CD30+ small cells</b>	
Jisook Yoo, Taehan Koo, Eun-Jung Park, Mingyul Jo, Min-Soo Kim, Mihn-Sook Jue	
PO17-006	407
<b>Involvement of M1/M2 macrophages in the pathomechanisms of intralymphatic histiocytosis</b>	
Koji Kamiya, Mariko Iwasaki, Takeo Maekawa, Mayumi Komine, Satoru Murata, Mamitaro Ohtsuki	
PO17-011	407
<b>Three facial aging parameters (wrinkle, elasticity and pore) highly correlated with age obtained by non-invasive measurements in 5, 205 Asian</b>	
Ji Hwoon Baek, Young Kyoung Seo, So Jeong Kim, Ja Hyun Ryu, Han Jo Kim, Min Ji Kim, Da Jung Jo, Eun Ju Lee, Da Eun JEONG, Go Woon Choi, Da Hoon Yoon, Ye Eun Lee, Hyun Jin JEONG, Lee Eun Seok, Ahreum Choi, So Yeon Kim, Si Ho Choi, Yoo Ree Lim, Jong Hyun Kim, Sung Min Yang, Hye-Jin Ahn, Min Kyung Shin, Jae Sook Koh	
PO17-016	408
<b>A case of nevoid hyperkeratosis of nipple and areola in a male patient</b>	
Seung Hwi Kwon, Yoo Sang Baek, Jiehyun Jeon, Hae Jun Song, Chil Hwan Oh	

PO17-025	408
<b>Clinical study of 52 patients with adult onset dermatomyositis</b>	
Young Ho Won, In Soon Jung, Sook Jung Yun, Jee Bum Lee, Seung Chul Lee	
PO17-052	409
<b>A case of accessory tragus on buccal area</b>	
Kyung muk Jeong, Ji Yun Seo, Jin Young Song, Yoo Sang Baek, Hae Jun Song, Chil Hwan Oh, Jiehyun Jeon	
PO17-057	409
<b>Neonatal lupus erythematosus without congenital heart block: a retrospective study for 10 years in China</b>	
Jing-Hua Yin, Qian-Jin Lu, Jian-Ping Tang	
PO17-069	409
<b>Skin-Brain Connection</b>	
Jinho Chung	
PO17-070	410
<b>Application of dermoscopy detection system in observing the effect of 2940 nm Er pixel laser in skin pore treatment</b>	
Yue-Hua Men, Chun-Lei Zhang	
PO17-072	410
<b>A Japanese case of tick bite bitten in Nepal</b>	
Michio Tokuyama, Tomomichi Shimizu, Takahiko Yamada, Akio Kondo, Kiyohiko Kanbe, Tomotaka Mabuchi I	
PO17-073	411
<b>Analysis of finger vein variety in patients with various diseases using vein authentication technology</b>	
Jonghun Kim, Toshio Hasegawa, Yuichiro Maeda, Yusuke Hirasawa, Hitoshi Tsuchihashi, Takasuke Ogawa, Etsuko Komiyama, Akio Nagasaka, Naoto Miura, Shigaku Ikeda	
PO17-074	411
<b>Presence of SCF/CXCL12 double positive large blast-like cells at the site of cutaneous extramedullary hematopoiesis</b>	
Takashi Nomura, Toshiaki Kogame, Kenji Kabashima	
PO17-090	412
<b>Erythema nodosum-like lesion in sarcoidosis: a specific skin manifestation occasionally seen in Japanese patients</b>	
Toshiyuki Yamamoto	
PO17-091	412
<b>Cutaneous lymphoid hyperplasia with lymphoid follicles possibly represents tertiary lymphoid organs in the skin: an immunohistochemical analysis of three cases</b>	
Mikio Ohtsuka, Tatsuhiko Mori, Toshiyuki Yamamoto	
PO17-092	412
<b>Recurrent blistering of the fingers as a sign of carpal tunnel syndrome</b>	
Mai Endo, Toshiyuki Yamamoto	
PO17-002	413
<b>A case of overlap syndrome associated with rhabdomyolysis</b>	
Jin-Jing Jia, Xiao-Peng Wang, Hai-Tao Zhang, Meng-Di Zhang, Yan Zheng	
PO17-003	413
<b>Candidate biomarker of human skin aging: A review</b>	
Jun Wang	
PO17-007	413
<b>Unilateral linear Telangiectasia macularis eruptiva perstans: a case on axilla</b>	
Zhen-Hui Ma, Xiao Li, Ya-Ping Tian	
PO17-008	414
<b>5-aminolaevulinic acid-based photodynamic therapy pretreatment inhibits ultraviolet B-induced skin photodamage</b>	
Dan Luo	

PO17-009	414
<b>Distribution and expression of transient receptor potential vanilloid in skin lesions of patients with dermatomyositis</b>	
Ke Xue	
PO17-010	415
<b>A case of lupus miliaris disseminatus faciei after allogeneic hematopoietic stem cell transplantation</b>	
Si Zhang, Cheng Zhou, Xiao-Yang Liu, Lin Cai, Jian-Zhong Zhang	
PO17-012	415
<b>Wong type dermatomyositis with anti-TIF1-<math>\gamma</math> antibody: A case report</b>	
Ke Xue	
PO17-013	416
<b>MED, MPPD which model for whitening products evaluation is better?</b>	
Yue Zheng, Xiang-Zi Li, Wei Lai	
PO17-014	416
<b>Translation of the Chinese version of the Family Dermatology Life Quality Index (FDLQI) and its evaluation on parents of children with vitiligo and eczema</b>	
Abdulrahman Amer, Xing-Hua Gao	
PO17-015	417
<b>A case of scalp eczema and alopecia associated with Erlotinib</b>	
Fang su, Qing-Yan Chen, Tie-Nan Li	
PO17-017	417
<b>Recurrent purpura: A clue to Sjogren's syndrome</b>	
Lu gan, Hao Chen, Jian-Fang Sun	
PO17-018	418
<b>Expression and significance of IL-22 in lichen planus</b>	
Shan-Shan Zhu	
PO17-019	418
<b>Targeting lysosomal labile iron pool, a novel approach for skin photoprotection</b>	
Li Zhong	
PO17-020	419
<b>Measurement of cytokines, chemokines and association with clinical severity of DM/CADM disease</b>	
Meng-Ya Chen, Jie Zheng, Hua Cao	
PO17-021	419
<b>A case of classic juvenile pityriasis rubra pilaris</b>	
Bei Shi	
PO17-022	420
<b>Unilateral eyelid lupus tumidus: Report of three cases</b>	
Cong-Cong Xu, Hao Chen, Jian-Fang Sun	
PO17-023	420
<b>Dermoscopy of hair broken caused by chemical dye</b>	
Meng-Sha Ma, Wen-Ju Wang, Yong-Hong Lu, Shi-Hua Zeng, Xue-Ying Liu, Li-Wen Zhang, Qiao-Mei Sun	
PO17-024	420
<b>Study on efficacy and safety of HMME photodynamic therapy for port wine stain</b>	
Xiao-Ying Chen, Jie Zheng	
PO17-026	421
<b>Clinical analysis of 5 cases with nodular scabies about diagnosis and treatment</b>	
Yang-Yang Ma, Ping Wang	
PO17-027	421
<b>Two cases of Lichen planus-like eruption caused by glivec</b>	
Ling-Di Dong, Nan Yu, Jia-Rong Han	

PO17-028	421
<b>Clinical analysis of 425 cases of Paederus dermatitis</b> Zhuo-Fu Luo, Mao Luo, Yang Xu	
PO17-029	422
<b>A method of dermoscopy plus ink staining to observe scabies</b> Yang-Yang Ma, Ping Wang, Ke Bian, Ze-Hu Liu	
PO17-030	422
<b>Dermoscopy of vulva syringoma</b> Yong-Hong Lu, Meng-Sha Ma, Wen-Ju Wang, Bin Yin, Xue-Ying Liu, Qiao-Mei Sun	
PO17-031	423
<b>Correlation between serum high-sensitive C-reactive protein and CGI-SI in patients with psoriasis vulgaris</b> Meng-Sha Ma, Dan Zheng, Min Lin	
PO17-032	423
<b>Localized cutaneous amyloidosis associated with linear porokeratosis: A case report</b> Yong Zhang	
PO17-033	423
<b>Clinical observation of 32 cases of chronic urticaria treated by BICOM bio-resonance therapy</b> Liang Lu, Lan Liu, Wen-Ni Lei, Ping Liu, Yu-Dan Wang	
PO17-034	424
<b>Pseudoxanthoma elasticum: A case report</b> Ming Yao, Jing-Mu Liu, Xia Hua	
PO17-035	424
<b>Scalp metastasis as the first sign of non-small-cell lung cancer: case report</b> Cun-Huo Jiang	
PO17-036	424
<b>A case of auricular pseudocyst</b> Shi-Hua Zeng	
PO17-037	424
<b>A case of reactive perforating collagenosis</b> Hui-Min Meng, Li-Xia Xie, Cun-Huo Jiang	
PO17-038	425
<b>Risk factors for infantile hemangiomas: A systematic review and meta-analysis</b> Jing-Zhan Zhang, Yuan Ding, Xiao-Jing Kang	
PO17-039	425
<b>A rare case report of Wolf's isotopic response after herpes zoster: lichen sclerosis et atrophicus combined with cutaneous adnexal neoplasms</b> Min Zhang, Li-Xia Xie, Lin Wang, Lin Li, Mei Yang	
PO17-040	426
<b>Role of azithromycin in systemic lupus erythematosus by depressing classically activated macrophages</b> Jie Wang, Lin Xie, Shang-Shang Wang, Jin-Hua Xu	
PO17-041	426
<b>A case of erythropoietic protoporphyria</b> Li-Sha He	
PO17-042	426
<b>Effect of mental health education on quality of life in 56 patients with severe acne</b> Mei-Rong Bai	
PO17-043	427
<b>A case of lupus erythematosus profundus</b> Cong-Hui Li, Bei Kan, Bin Yin, Pei-Mei Zhou	
PO17-044	427
<b>Cutaneous Rosai-Dorfman disease</b> Yan Liu, Fen Li, Yong-Hong Lu	

PO17-045	428
<b>A case of crusted scabies presenting as erythroderma</b> Yin-Hua Wu, Juan Bai, Jian-Jun Qiao, Sha Zhou, Yun-Lei Pan, Si- Zheng, Hong Fang	
PO17-046	428
<b>A case of pyoderma gangrenosum and bullous pemphigoid</b> Qian Li, Chong Sun, Hong-Yan Liu, Song Zheng, Mei Liu	
PO17-047	428
<b>A case of aquagenic acrokeratoderma</b> Pei-Mei Zhou, Feng Li, Yong-Hong Lu, Xiao-Yu Deng	
PO17-048	429
<b>A case of Degos disease with ahead system symptoms</b> Xiao-Ke Liu, Jun Li	
PO17-049	429
<b>An acute pain rash: Dermoscopy as the key to diagnosis and treatment</b> Xue-Yan Yao, Jian-Zhong Zhang, Cheng Zhou	
PO17-050	429
<b>SLE patient of verrucous lupus erythematosus: A case report</b> Di-Xin Wang, Jie Zheng	
PO17-051	430
<b>Thymoma-associated multi-organ autoimmunity: 2 cases of graft-versus-host disease-like erythroderma</b> Ye-Ping Ruan, Bo Wang, Xiao-Qing Zhao, Ruo-Fei Shi, Jie Zheng	
PO17-053	430
<b>Inflammatory linear verrucous epidermal nevus: A case report</b> Jin-Wen Huang, Min Lin, Chao Ji, Xin-Yu Lin, Jing Zhang, Bo Cheng	
PO17-054	431
<b>A case of subungual exostosis</b> Xiu-Cheng Wang, Min Lin, Chao Ji, Bo Cheng	
PO17-055	431
<b>Challenge of diagnosing seborrhoeic keratosis by reflectance confocal microscopic</b> Ai-Yuan Guo	
PO17-056	431
<b>Cutaneous metastasis from ovarian serous adenocarcinoma</b> Meng-Ting Lin, Chao Ji, Zi-Ping Zhang, Bo Cheng	
PO17-058	432
<b>Cutaneous plasmacytosis with normal <math>\gamma</math>-globulin</b> Wen Yuan	
PO17-059	432
<b>A case of lupus erythematosus-lichen planus overlap syndrome on sole</b> Jun-Ying Li, Yu Zhang, Cai-Xia Wang, Gui-Ling Lu, Li-Tao Zhang	
PO17-060	432
<b>TNF<math>\alpha</math> antagonists-Induced psoriasiform eruption with histopathologic features of lichenoid dermatitis in a patient with erythema multiforme drug eruption</b> Yan-Yan Hu, Yun Xia, Wei-Ming Zhang, Fei Su, Xiao-Yong Zhou	
PO17-061	433
<b>Acquired lymphangiectasia (lymphangioma circumscriptum) of the vulva mimicking condyloma acuminatum</b> Chen-Chen Xu, Jun-Hui Wang, Yi-Jia Xu, Zhan-Shuo Xiao, Bing-Nan Cui	
PO17-062	433
<b>Dermoscopic features of Chinese patients with vulvar lichen sclerosis</b> Yi-Xin Luo, Jie Liu, Cheng Chi, Shi-Wang, Zhao-Liu, Dong-Lai Ma, Hong-Zhong Jin	
PO17-063	433
<b>Adult xanthogranuloma: A case report</b> Min Lin, Jing Zhang, Yu Guan, Jin-Wen Huang, Chao Ji, Bo Cheng	

PO17-064	434
<b>Dermatologists vs. deep convolutional neural network: the comparison of diagnostic accuracies for melanocytic nevus and seborrheic keratosis</b>	
Shi-Wang, Jie Liu, Chen-Yu Zhu, Chang Shu, Hang-Ning Zhou, Feng-Ying Xie, Tao Xu, Hong-Zhong Jin	
PO17-065	434
<b>Psoriasiform keratosis: A case report</b>	
Jin-Gang An, Song-Mei Geng, Yi-Guo Feng	
PO17-066	435
<b>Utility of dermoscopy in discosmetic dermatoses</b>	
Cheng Chi, Jie Liu	
PO17-067	435
<b>Cutaneous plasmacytosis: Report of a case and review of the literature</b>	
Li-Hong Zhao, Song-Mei Geng	
PO17-068	435
<b>Cutaneous Rosai-Dorfman disease: A case report and review of literature</b>	
Li-Hong Zhao, Song-Mei Geng	
PO17-075	436
<b>Survey on the current situation of continuing education for dermatologists in Hunan province</b>	
Yu-Meng Li, Jing Chen, Dong-Wen Wu, Qi Chen, Yu-Ting Pu, Chu-Ying Qin	
PO17-076	436
<b>A case of phacomatosis pigmentovascularis</b>	
Qing-Yan Li, Kevin Yu Wang, Rui-Lian Li, Song-Mei Geng, Hui-Qun Ma	
PO17-077	437
<b>Study on mechanism of miR-222 regulates the proliferation of fibroblasts in hypertrophic scar via MMP1</b>	
Yi Zhang, Kang Zeng	
PO17-078	437
<b>Analysis of clinicopathologic features of cutaneous Rosai-Dorfman disease</b>	
Ying Zhou, Gui-Ying Zhang, Jing Zhang, Ya-Ping Li	
PO17-079	438
<b>A case report of cutaneous angiosarcoma by surgical treatment and photodynamic plus chemotherapy</b>	
Di-Hui Liu, Ming-Liang Chen, Shuang Zhao, Fang-Fang Li, Li-Xia Lu, Kai Huang, Xiang Chen	
PO17-080	438
<b>Clinical manifestations and gene mutations of 25 patients with neurofibromatosis type 1 from Chinese 10 families</b>	
Hui Chen, Xue-Fei Lin, Wei Zhu	
PO17-081	439
<b>A case of stucco keratosis misdiagnosed as porokeratosis</b>	
Hui Chen	
PO17-082	439
<b>Cutaneous sarcoidosis masquerading as lupus vulgaris</b>	
Bei-Lei Xu, Xu Yao, Xiu-Lian Xu	
PO17-083	439
<b>A case of POEMS syndrome</b>	
Kun-Li Zhou, Chao Ji, Zi-Ping Zhang, Bo Cheng	
PO17-084	439
<b>UVB induced gene REDD1 may be involved in the regulation of skin photoaging</b>	
Yu-Jie Ouyang, Jing Chen, Jian-Yun Lu, Shuang-Hai Hu, Shi-Yao Pei, Chu-Han Fu, Ling Jiang, Yu-Fang Ding, Qing-Hai Zeng, Jin-Hua Huang	
PO17-085	440
<b>A case of linear IgA bullous dermatosis in children</b>	
Kun-Li Zhou, Ming-Kai Ji, Chao Ji, Zi-Ping Zhang	

PO17-086	440
<b>A case of acanthosis nigricans with gastric malignant tumor</b> Kun-Li Zhou, Chao Ji, Zi-Ping Zhang, Bo Cheng	
PO17-087	440
<b>Two stage repair of skin defects in dermatologic surgery using micro-power vacuum dressing have some benefits compared with skin grating</b> Xue Zhang, Dan Deng, Huai-Shan Qi, Zhi-Rong Yao	
PO17-088	441
<b>Epidemiological and clinical characteristics of infantile hemangiomas (IHs) in China: An ambispective cohort study</b> Xiai-Jian Yao, Tang-De Zhang	
PO17-089	441
<b>Research progress of relationship between MicroRNA-146a and skin diseases</b> Hong Yang	
<b>Publish</b>	442
<b>Index</b>	455

## Publish

### *PB01 Appendages' Diseases*

PB01-001

#### **One case of psoriasis vulgaris combined with secondary syphilis**

Nan Wu, Le-Le Cong, Xian-Ling Cong

*China-Japan Union Hospital of Jilin University*

A 35-year-old man developed systemic erythema and scales with unknown reason 30 years ago, and was diagnosed with psoriasis in the local hospital. The patient was given oral administration of Chinese medicine (name and dose of medicine were unclear) and the symptoms had improved. But the disease was recurrent without systemic treatment. One month ago, he got a cold and had fever, with the highest body temperature reaching 39°C. Subsequently, he developed systemic erythema and scales. Moreover, the rash had increased after oral administration of Chinese medicine (name and dose of medicine were unclear), accompanying with pain. No abnormality was found in systemic examination. Dermatology examination: densely-distributed and well-defined red plaques could be seen in head and face, trunk and four extremities, which were covered with a thick layer of silver scales; Auspitz sign positive; and no pustule, erosion or ulcer was seen in systemic mucosa. Laboratory and auxiliary examination: no abnormality was found in blood routine. Urine routine: white blood cell 169.5/ul, cast 11.86/ul, bacteria 315.8/ul, white blood cell 30.51/HPF and cast 34.39/LPF; no obvious abnormality in liver function was found. Electrocardiography indicated normal results. No obvious abnormality was seen in liver-gall-pancreas-spleen color ultrasound. Lymphocyte immune analysis: CD3<sup>+</sup> 83.6%, CD3<sup>+</sup>CD8<sup>+</sup> 57.3%, CD3<sup>+</sup>CD56<sup>+</sup> 5.9%, and CD3<sup>+</sup>CD4<sup>+</sup>/CD3<sup>+</sup>CD8<sup>+</sup> ratio of 0.43, suggesting abnormal immune function of the patient. Routine immunity: hepatitis B surface antibody (HBsAb) 92.29 MIU/ml, and treponema pallidum antibody (TPPA) was weakly positive. Chest image at adem position revealed bilateral lung marking enhancement. The past medical history of patient was inquired, and he denied a history of visiting prostitutes, a history of contact, or a history of genital ulcer. Diagnoses: 1) psoriasis vulgaris; 2) suspected urinary tract infection; and 3) syphilis to be excluded.

PB01-002

#### **Clinical management of Chinese patients with alopecia areata**

Xing-Qi Zhang, Yan-Ting Yan, Jian Yang

*The First Affiliated Hospital of Sun Yat-sen University*

Alopecia areata (AA) is a non-scarring inflammatory hair loss of unknown etiology. For children with severe type of AA, we use topical occlusion of the whole scalp with halometasone cream overnight and a shower cap, to achieve an efficient rate of over 80%. In adult patients with mild type of alopecia areata with a single patch, oral compound glycyrrhizin and topical minoxidill is usually efficient for hair regrowth. However, for extensive and progressive AA of adult patients, systemic treatments with steroids such as intramuscular injection of long-acting corticosteroids such as compound betamethasone for 3-4 times at an interval of 3 weeks. In diffuse type of AA, or AA incognita, multiple muscular injections with long-acting steroids should be used immediately to interfere with the inflammatory infiltration at the early stage. Only in long-standing AT/AU, do we use topical immunotherapy with sensitizers (eg, diphenycprone, DPCP). Moreover, in patients with long term seasonal relapse and allergic to dust mites, we introduce desensitizer of dust mites sublingually and daily for 2 years, with or without antihistamines. In our hands, patients with short duration and smaller hair loss area have a better outcome. Therefore, we propose an early and effective intervention to ensure a better outcome with fewer relapses.

PB01-003

**Mucous eccrine nevi on the feet: 2 cases report**

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Case 1: A 16-year-old man presented with tender swelling erythema on the right toe and left little toe for 1 year. 1 years ago, edematous erythema associated with pain presented on his right toe and left little toe. He was repeatedly misdiagnosed as parotitis, but topical furostic acid, and bibenzazole, intravenous cefuroxime failed. Physical examination showed edema tender erythema on the right toe and left little toe, skin temperature is not high, bilateral popliteal lymph nodes are not palpable, dorsalis pedis artery pulsation can be touched. The lesions were totally excised. Histopathological examination showed superficial dermal perivascular lymphocytic infiltration, and massive basophilic mucoid deposition around the eccrines. Mucous eccrine nevus was diagnosis.

Case 2: An 18-year-old girl was referred to our department with a 17-year history of hyperhidrosis and hypertrophy on the distal end of her left foot. Physical examination revealed a 4×3 cm, triangle-shaped, well-circumscribed lesion on the distal end of the dorsum of the left foot, with slightly brown hyperpigmentation. The big toe was normal, while the other four toes were deformed, hypertrophic and hyperpigmented, especially the middle toe, which was firm and tender on palpation. Dewdrop-like sweat was fully distributed on the lesion surface. Sensation was intact over both affected and unaffected skin areas. One lesion was excised deeply from the dorsum of the left second toe. Histopathologic exam demonstrated hyperkeratosis, acanthosis and focal pigment granules of the basal layer. In the deep dermis proliferation of lobulated eccrine glands, an increase in the number of intradermal eccrine ducts and eccrine coils composed of normal secretory and ductal portion were revealed. Alcian blue stain highlighted a deposit of abundant mucinous material, in the stroma surrounding the eccrine gland and diffusely present in the dermis. Laboratory and radiological investigations, including total blood count, renal and liver function tests, X-ray of the feet, and abdominal and pelvic ultrasonography revealed no abnormal findings. The girl was diagnosed as mucous eccrine nevus. Plastic surgery was applied to deal with the hypertrophy. At two subsequent follow-up visits, the patient presented improved shape of her left toes, but the sweating was not remarkably reduced.

Eccrine nevus is a rare type of dermal adnexal hamartoma, including three subtypes: classic eccrine nevus, eccrine hemangioma hamartoma and mucous eccrine nevus. Mucous eccrine nevus is extremely rare, and its exact etiology is unknown. However, it is speculated that it is related to embryonic development defects, trauma or surgery. The most common clinical manifestation is unilateral brown nodule on the leg, occasionally accompanied with hyperhidrosis. Pathological features include eccrine hyperplasia and a large number of mucin deposition around it. Immunohistochemical stain usually demonstrates CEA, S-100, CK, EMA positive. It should be differentiated from mast cell tumor, cellulitis, leiomyoma, connective tissue nevus and angiolymphoid hyperplasia with eosinophilia. Although mucinous eccrine nevus is a benign tumor, it usually does not subside spontaneously. If it is asymptomatic, observation is usually sufficient. If it presents with pain and edema, it can be excised. The hyperhidrosis can be treated with anticholinergic drugs, or local injection of botulinum toxin.

PB01-004

**Effects of skin care habits on the development of rosacea: a multi-center retrospective case-control survey in the Chinese population**

Ying-Xue Huang, Ji Li, Hong-Fu Xie

*Xiangya Hospital Central South University*

**Background** To examine if the skin care habits would increase the risk of attacking rosacea in the Chinese population.

**Methods** A multi-center retrospective case-control survey of 1,245 rosacea cases and 1,538 skin-healthy controls from 5 hospitals in 5 cities of China was conducted. Participants completed the questionnaire of demographic and socioeconomic data, skin type, and daily skin care habits.

**Results** The multivariate Logistic regression analysis highlighted some factors: frequent daily skin care (mean *OR* =1.3),

use skin care products purchased through non-official ways ( $OR = 1.8$ ), the usage of foaming cleanser ( $OR = 1.3$ ), using oil-control products ( $OR = 1.5$ ) and anti-allergy products ( $OR = 1.8$ ), using facial mask frequently (mean  $OR = 1.3$ ), and frequent facial treatments at beauty salon (mean  $OR = 1.6$ ). Frequency of cleansing and make up showed a nonlinear association with rosacea: those who used facial cleansers 1-3 times per week ( $OR = 0.7$ ) or who made up once or twice a week ( $OR = 0.5$ ) showed protective effects, while those who used facial cleanser excessively (twice or more daily) ( $OR = 2.5$ ) or who made up almost everyday ( $OR = 3.7$ ) had greater tendency to suffer from rosacea. Significant protective factors included use of moisture products ( $OR = 0.6$ ) and sunscreen cream (mean  $OR = 0.7$ ).

**Conclusions** Poor skin care habits are newly found risk factors for rosacea in the Chinese population. Appropriate skin habits such as using moisture and sunscreen products have protective effects on rosacea.

PB01-005

### **Trichofolliculoma with linear distribution on the face: A case report**

Nan-lan Yu

*Chongqing Southwest Hospital*

Trichofolliculoma is a rare hair follicle hamartoma originating from hair follicle tissue, which mainly occurs in the infundibulum of the hair follicle. To our knowledge, clinical trichofolliculoma with linear distribution has not been previously reported in the literature. Here, we present an unusual case of trichofolliculoma with a linear distribution.

PB01-006

### **Clinical characteristics of adolescent severe acne patients in China**

Jue Qi, Li He

*First Affiliated Hospital of Kunming Medical University*

**Background** To conclude the clinical characteristics of adolescent severe acne in the Chinese Han population.

**Method** By reading photographic images of 2040 severe adolescent acne patients, we calculated the quantity, sites, and extension of severe acne lesions, concluded the clinical characteristics in various age groups and genders.

**Results** Out of 2040 adolescent severe acne patients, 67.7% males, 32.3% females, male had higher risk to suffer from severe acne. 47.3% of male patients were less than 20 years, 79.9% of females were more than 20 years. Among 40 patients less than 15 years old, 71.4% patients had more than 20 papules/pustules, 47.7% patients had nodule/cysts, but the quantity were less than 20, all patients had atrophic scars, but none had hypertrophic scars. For patients older than 15 years old, males had more comedones, papules/pustules, and acne scars, but less hyperpigmentation and erythema than females. Patients whose father and mother both had acne history had more acne scars than those none or only one of their parents had acne history, (all  $P < 0.05$ ).

**Conclusions** For adolescent severe acne patients in Chinese Han people, males were more likely to suffer from severe acne at an earlier age than females. Severe acne occurring before age 15 present a high risk of inflammatory lesions and atrophic scarring. Severe acne occurred after age 15, males had more inflammatory lesions and acne scars, while females had a higher risk of hyperpigmentation and erythema, which suggested the presence of hyperpigmentation and erythema were not completely correlated with the severity of inflammatory reaction.

## *PB02 Bacterial and Viral Infection*

PB02-001

### **Five cases of Leprosy from Shanghai: clinicopathological correlation**

Ye-Qiang liu

*Shanghai Skin Disease Hospital*

Leprosy has affected mankind for millennia and would still be a big health problem in some country, as evidenced by nearly 250,000 new cases found every year. It is a chronic infectious disease, affecting the patient skin and peripheral nerves. This article will introduce the five new cases diagnosed by our department in the recent three years. The cases are included as Tuberculoid (TT), borderline tuberculoid (BT), Borderline lepromatous (BL) and Lepromatous (LL). Variation in the cellular immune response depends on variation of different clinical images. Different clinical manifestations have different pathological images. Hence, Clinicopathological correlation is important for diagnosis. Sometimes it is needed to use PCR and slit skin smear to help diagnosis.

PB02-003

### **A case of varicella-zoster induced myocarditis**

Kang Su Kim, Si Young Yang, Ji Eun Hahm, Jae Won Ha, Chul Woo Kim, Sang Seok Kim

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Varicella zoster virus is a common cause of chickenpox (varicella) in children and herpes zoster (shingles) in adults. These diseases usually show a benign and self-limiting course. Cardiac sequelae of varicella-zoster virus are extremely rare but can be serious. We report a case of a patient with clinical findings of myocarditis caused by varicella-zoster virus. The patient was a 58-year-old woman with severe painful skin lesions on her left arm that started 4 days ago. She did not have a clear chest pain, but she complained of sweating and weakness with radiating pain to her left shoulder and back. There was no specific underlying disease and family history. On physical examination, the patient had grouped erythematous vesicles on left C6 dermatome. The blood pressure was 120/80 mmHg in both upper limbs and her heart rate was 72 beats/min. The electrocardiogram showed normal sinus rhythm. Her initial Creatine kinase was 887 IU/L, troponin I was 4.593 ng/ml, and creatine kinase-MB fraction was 6.7 ng/ml, which was higher than normal. The echocardiogram revealed normal left ventricular size and a left ventricular ejection fraction of 69.3%. In addition, coronary computed tomography angiography was performed for differential diagnosis of acute coronary syndrome. There were no specific findings. Finally, we diagnosed varicella myocarditis. She received conservative management with acyclovir.

PB02-008

### **Case of infective endocarditis caused by implanted artificial hair prosthesis**

Chisato Kamei, Aya Okabayashi, Sakurako Arai, Rie Tohda, Nami Shimizu, Koichi Nakagawa

*Department of Dermatology*

A 64-year-old Japanese man with fever lasting 4 days presented to our hospital. Upon physical examination, he was febrile at 39°C and had a systolic murmur. He had painful purpura on the right 5th and left 2nd and 3rd fingers. His biopsy specimen showed acute purulent inflammation. Transthoracic echocardiogram showed a perivalvular lesion in the mitral valve suggestive of vegetation. The patient also had an erythematous plaque with pus-filled vesicles and erosion on the scalp. He had undergone artificial hair implantation (AHI) for premature alopecia several times over 20 years. The last AHI was performed several years ago. Scales and itching where this procedure had been performed appeared 2 years ago. Methicillin-resistant *Staphylococcus aureus* was isolated in both the blood and pus from the

scalp lesion. From these findings, the patient was diagnosed as infective endocarditis (IE) caused by implanted artificial hair pyoderma (IAHP). He was transferred to another hospital for valve replacement. In that hospital, his scalp eruption was improved by systemic antibiotic agent and corticosteroid ointment and they succeeded in the surgery of the valve replacement.

Though the U. S. Food and Drug Administration now bans the use of synthetic hair, AHI is still popular in Japan. We dermatologists should be aware that IAHP can be a trigger for IE.

PB02-002

### **Relationship between Postherpetic Neuralgia (PHN) and the expression of serum miRNA**

Hai-Feng Xu, Xing-Hua Gao

*Department of Dermatology, No. 1 hospital of China Medical University and Key Laboratory of Immunodermatology, Ministry of Health and Ministry of Education*

**Background** There are conflicting reports on the correlation between positive autologous serum skin test (ASST) responses and the clinical features in patients with chronic urticaria (CU). To evaluate the significance of ASST responses in CU.

**Methods** All available Databases were searched to identify relevant CU studies from inception to March 2018. Data were analyzed with Cochrane Collaboration's Review Manager 5. 2. The multiple relevant factors of CU were evaluated by weighted mean difference (WMD), standard mean difference (SMD), odds ratio (*OR*) and 95% confidence interval (*CI*). A total of 2554 records of CU patients from 16 publications were included in the systematic review and meta-analysis.

**Results** The results indicated that CU cases with positive ASST responses showed higher urticaria activity scores (UAS) and higher levels of total serum IgE than CU cases with negative responses to ASST. ASST positive cases were more likely to be accompanied with positive thyroid autoantibodies and angioedema. An increased predominance of CU was found in females, who were more likely to show positive responses to ASST. We also show that a greater incidence of positive ASST responses were present in CU patients as compared with healthy controls. No statistically significant differences were obtained between positive and negative ASST responses with regard to age and duration of disease.

**Conclusion** ASST provides an effective means for predicting urticaria activity and incidence in CU patients.

PB02-004

### **ALA-PDT restores expression of TAP and surface presentation of MHC class I antigen in HPV external anogenital infection**

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**Background** To explore the mechanism of ALA-PDT for reducing HPV viral loads.

**Methods** Immunohistochemical, Western Blotting, RT-PCR and Flow cytometry methods were used to detect the expression of TAP and MHC-I molecules after PDT treatment.

**Results** The inhibitory effect of HPV infection on the expression of TAP-1 and MHC-I molecules in the tissues of CA. ALA-PDT suppressed the expression of E6/ E7 protein of HPV virus and increased the expression of TAP significantly. The results of flow cytometry showed that the average fluorescence intensity of MHC class I molecule in ALA-PDT group was higher than that of control group.

**Conclusion** ALA-PDT can reduce the HPV viral loads and the recurrence rate in patients with CA, which may be associated with the ability to reduce HPV E6/E7 protein and increase the expression of TAP and MHC class I molecules.

PB02-005

**One case of death of hemorrhagic varicella**

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A 32 years old woman Patient presented with blisters in her head and face, trunk and limbs blisters came to see doctor in our dpartment, there are multiple petechiaon inthe surfeces of body, part is under blisters, patient was admitted to the hospital with diagnose of severe varicella infection, suspected pancreatitis and DIC. Patient suffered from renovascular hypertension for 3 years and received Adal at 30mg every day, she was done kidney transplantationdue to renal failure about two years ago, patient take the tacrolimus, meave and prednisone after opreation.

The relevant examination after admission, the white cell was  $37.5 \times 10^9/L$ , neutrophil  $27.3 \times 10^9/L$ , lymphocyte  $5.25 \times 10^9/L$ , PLT  $80 \times 10^9/L$ ; DIC:PT: noncondensablegas, APTT: noncondensablegas, FIB:noncondensablegas, TT: noncondensablegasP-FDP: noncondensablegasbloo. After admission patient received anti infection, increase immunity, protecting gastric, inhibiting enzyme, hemostatic and fresh frozen plasma. After treatment, blood coagulation state is still not solidified, patient showed mental mood irritation, respiratory and circulatory failure, heartbeat and breathing stopped, declared clinical death.

Varicella (chickenpox) as a acute infection occurs in epidemics among preschool and school-aged children. Atypical clinical presentations and uncommon complications of this disease can pose diagnostic and therapeutic challenges.

For the patients with immunocompromised blood coagulation damage may be the cause of the exacerbation of hemorrhagic varicella disease, treatment of severe hemorrhagic varicella with antiviral, fresh platelet, anticoagulant and immunoglobulin may be beneficial. It may be important for patients with immune deficiency to use anti-varicella vaccine and avoid contact with the source of infection to improve the recovery of severe hemorrhagic varicella.

PB02-006

**A case of swimming pod granloma**You-Lu Xu<sup>1</sup>, Yun-Qiang Zhang<sup>2</sup>, Fei Guo<sup>2</sup>, Hong-Xia Liu<sup>2</sup>*1. 2016 year Clinical Class 3, fourth Clinical Medical College, Xinjiang Medical University**2. Traditional Chinese Medicine Hospital Affiliated to Xinjiang Medical University*

Present history: the family of the patient complained that because the patient had been scratched by a steel wire ball 3 years ago, the skin of the dorsal side of the right middle finger was broken, a small amount of pus secretions were produced after squeezing, after self-treatment, they did not heal, and later they went to a hospital to see a doctor and considered skin infection. Ask the patient to immerse in alcohol, then inflame pain in the wound, stop treatment because of intolerable, buy "erythromycin ointment, triamcinolone acetoneid econazole ointment, fluorine easy ointment" for external use, The wound gradually developed into dark red spots, swelling intercropping, with no obvious symptoms.

Physical examination: the patient's vital signs were stable, the superficial lymph nodes of the whole body did not touch swelling, the liver and spleen did not touch the swelling; Dermatology examination: an about  $3 \times 4$ cm size dark red spot, local swelling in first finger joint of the right hand can be seen, a needle size blister can be seen, no exudation. Pathology: massive histocyte and lymphocyte infiltration, occasionally eosinophils, presented with chronic granulomatous skin inflammation. Acid fast staining. Fungus PAS staining.

PB02-007

**Human papillomavirus (HPV) 11E7 protein antagonises imiquimod-induced interferon- $\beta$  production and TLR7 expression in HaCaT cell**

Li Ma, Yin-Jing Song, Hao Cheng

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**Background** The human papillomavirus (HPV) 11E7 protein antagonises Imiquimod-induced Interferon- $\beta$  Production and TLR7 expression in HaCaT cell. To verify that HPV11E7 induces HaCaT cells produce IFN- $\beta$  via inhibiting IMQ, hinders the control of interferon on HPV virus infection, and affects the efficacy of IMQ treatment.

**Method** Q-PCR detection of IMQ inducing expression TLR7 mRNA from HaCaT cells. PDTC-pretreated HaCaT cells and siRNA interfered with TLR7 mRNA in HaCaT cells; Q-PCR detected IMQ-induced *TLR7* mRNA or *IFN- $\beta$*  mRNA expression; Established overexpression of HPV11E7 lentivirus-infected HaCaT stable cell line, flow cytometry, Q-PCR Western blot (WB) was used to identify the expression of HPV11E7 protein; Q-PCR was used to detect the expression of *IFN- $\beta$* , *IL-6*, *TLR7* and other DNA sensor mRNAs in HaCaT stable cells overexpressing HPV11E7 induced by IMQ. ELISA validation of IFN- $\beta$  expression.

**Result** IMQ induced the expression of TLR7 mRNA in HaCaT cells, and HPV11E7 significantly reduced the expression of *IFN- $\beta$*  and *TLR7* mRNA in HaCaT cells induced by IMQ.

**Conclusions** We find that HPV11E7 inhibits IMQ induction HaCaT cells express TLR7 and inhibit type I INF- $\beta$  production, evade immune surveillance clearance.

PB02-009

**Upper extremity skin ulcer caused by nocardia: A case report**

Yi-Bin Fan, Xiao-Hua Tao, Wei-Li Pan, You-Ming Huang, Yong Yu, Meng-Bi Gong

*Zhejiang Provincial People's Hospital*

A 67-year-old man fisher was admitted to the hospital with a 5-month history of an ulcer on the upper limb. Five months earlier, an abrasion developed on his left finger while he was fishing, but it was not treated. A few days later, some ulcer developed on the site of the injury. These cutaneous lesions gradually enlarged and increased to his forearm, and topical and systematic antibiotic agents were administered. However, the rash is getting worse. The patient presented no fever, chills, headaches, arthralgia, or weight loss. His past medical history was unremarkable. Laboratory inspection: All the laboratory and imaging examinations were Normal. A skin biopsy was performed for histopathological and microbiological examinations. Acid-fast staining and bacterial culture were positive. The patient was diagnosed as nocardiosis and be treated with Minocycline and SMZ oral for 3 months.

PB02-010

**Varicella zoster encephalitis complicating herpes zoster on the right side of the waist and abdomen**

Jian-Xia Chen, Yan-Yan Feng

*People's Hospital of Xinjiang, Uygur Autonomous Region*

A 48-year-old immunocompetent man developed varicella zoster encephalitis complicating Herpes zoster on the right side of the waist and abdomen. It is a typical case of waist and abdomen herpes zoster infection of the central nervous system, differ from previously reported, which mostly occur in patients with zoster virus infection in the nerves of the brain, cervical or upper thoracic spinal cord. And it mainly occurs in immunocompromised individuals, such as patients with AIDS or on immunomodulatory therapy. In our case, neurological examination showed suspiciously positive bilateral pathological signs. Routine blood analyses, autoimmune screening, HIV and treponema pallidum

serologies yielded negative results. Magnetic resonance imaging, physical-chemical, and cell count analyses on cerebrospinal fluid were normal, whereas Pan's test was positive. Waist and abdomen herpes zoster virus infection causes encephalitis is very rare. Presumably the infection is due to herpes zoster virus retrograde through the lumbar and spinal nerves into the cerebrospinal fluid circulation, thus passing through the arachnoid, pia mater and directly invading the brain parenchyma or allergic reactions. In this article, we will present the unusual aspects of our case and analyze the route of herpes zoster infection in the brain.

## *PB03 Basic Research*

PB03-012

### **Investigation on micro RNA expression profiles in HaCaT cells induced by UVB based on Gene Ontology**

Ling Yang

*Kunming General Hospital of PLA*

**Background** To investigate the microRNA expression profiles in HaCaT cells induced by UVB based on Gene Ontology.

**Methods** Differential expression of miRNAs were screened by preparing and scanning seven microRNA chips based on different combination of UVB intensity, which included 100 mJ/cm<sup>2</sup>, 200 mJ/cm<sup>2</sup> and 400 mJ/cm<sup>2</sup>, and UVB duration, which included 12h or 24h. Target genes were predicted by TargetScan and enrichment analyzed based on Gene Ontology.

**Results** Compared to the normal control group, HaCaT cells induced by UVB of different intensity showed differential expressions of miRNAs. Nine miRNAs, which included up-regulating miR-8063, miR-1273f, miR-4497, miR-4778-5p and miR-6510-5p as well as down-regulating miR-1973, miR-5100, miR-205-3p and miR-4485-3p, were selected from fold change (fc) for follow-up study. Prediction and enrichment analysis on target genes of miRNAs in HaCaT cells of 400mJ/cm<sup>2</sup> group showed several gene functions such as positive regulation of T cell mediated cytotoxicity, positive regulation of T cell tolerance induction, immature B cell differentiation, natural killer cell proliferation, dendritic cell antigen processing and presentation, negative regulation of immunoglobulin production and neutrophil homeostasis, etc.

**Conclusion** HaCaT cells induced by UVB showed differential expressions of miRNAs, target genes of which might regulate humoral immunity or cellular immunity.

PB03-016

### **A co-culture method for melanocytes and mesenchymal stem cells**

Li-Fei Zhu, Zhi-Kai Liao

*The Sixth Affiliated Hospital of Sun Yat-Sen University.*

**Background** To establish a co-culture method for melanocytes and MSCs, which help to understand physiology features of melanocytes and vitiligo surgical treatment.

**Method** We collected prepuce from circumcision surgery at the range 12-28 years old healthy male at Sun Yat-Sen Third Affiliated Hospital, Dispase II and trypsin/EDTA solution are applied to disperse the prepuce epidermis into cell suspension. Resuspend the logarithmic growth phase P2 melanocytes, count and culture it at the bottom layer of transwell with a density of 10,000 cells/cm<sup>2</sup>, meanwhile inoculate respectively with nothing and MSCs (which is a gift from Jinan University) at the top layer of transwell with a density of same amount as melanocytes. Add 1.5ml fresh medium M254 medium with 1% HMGs-2, 1% penicillin-streptomycin and 10% fetal bovine serum (FBS) to Melanocytes' layer and 1ml DEME low-glucose medium with 1% glutamine, 1% penicillin-streptomycin and 10% FBS to the top layer. Separately change to fresh medium one time every 3 days. Use Cell Counting Kit-8 to measure cell proliferation continuously for 7 days, after 7 days, the regulation of melanin synthesis and melanogenesis will be

test in melanocytes.

**Results** The research data showed that co-cultured system could accelerate melanocytes' growth rate, also activated tyrosinase and melanogenesis.

**Conclusion** With these research data supported, we can conclude that co-culture melanocytes with MSCs can benefit melanocytes, although the involved mechanism remains to be determined. Our team will continue to do more mechanism study to explore this co-culture system.

PB03-001

### **Polyriboinosinic-polyribocytidylic acid facilitates interleukin-6, and interleukin-8 secretion in human dermal fibroblasts via JAK/STAT3, p38 MAPK signal transduction pathway**

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Polyriboinosinic-polyribocytidylic acid (polyI:C) promotes wound healing accelerates re-epithelization, granulation and neovascularization, and cause release of pro-inflammatory cytokines. However, little is known about polyI:C mediators in human dermal fibroblasts(HDFs). Here, we found that polyI:C enhanced the expression of *IL-6* and *IL-8* mRNA and induced the production of IL-6 and IL-8 in concentration- and time-dependent fashion in HDFs, PolyI:C treatment also resulted in rapid increases in phosphorylation of both STAT3 and p38. Moreover pretreatment with AG490, a JAK inhibitor, inhibited polyI:C-induced phosphorylation of STAT3 and release IL-6 and IL-8. Similarly, pretreatment with SB20359, a selective inhibitor of p38 MAPK, blocked phosphorylation of p38 and expression of IL-6 and IL-8. In conclusion, polyI:C induced IL-6 and IL-8 production on HDFs through the JAK/ STAT3 and p38 signaling pathways.

PB03-002

### **MALAT1: A potential regulator of melanocyte function by sponging miRNAs**

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**Background** MALAT1 is one of the most intensively investigated lncRNAs, highly evolutionarily conserved and highly abundant in all tissues. MALAT1 was reported to act as a ceRNA to regulate cell proliferation, migration, autophagy, apoptosis, EMT, and aging by sponging miRNAs. However, to the best of our knowledge, the function and molecular mechanism of MALAT1 in melanocytes is still unclear. The purpose of this study was to explore whether MALAT1 can influence the melanocyte function by sponging miRNAs or not.

**Methods** Materials published in English were extracted from PubMed. All the studies were limited to the following inclusion criteria: I. Studies focused on function of MALAT1 by sponging miRNAs. II. Studies reporting miRNAs involved in function regulation of melanocytes. The bridge roles of miRNAs connecting MALAT1 and melanocyte function were explored.

**Results** Literature review found that MALAT1 could act as a ceRNA to regulate the melanoma progression, liver fibrosis, endometriosis, LPS induced acute kidney injury, etc. by sponging more than 39 miRNAs. Also, current researches revealed that more than 27 miRNAs are involved in growth, transformation, or melanogenesis of melanocytes. By comparing the miRNAs targeted regulation by MALAT1 and miRNAs involved in the regulation of melanocytes function, we found that miR-125b, miR-145, miR-146a, miR-155, miR-218, miR-506, and miR-509 are the common miRNAs.

**Conclusion** It is speculated that MALAT1 might regulate the melanocyte function by negatively regulating miR-125b, miR-145, miR-146a, miR-155, miR-218, miR-506, or miR-509. However, this hypothesis needs to be further proved by experimental evidence.

PB03-003

### Pathogenic epitopes of keratin 17 in the pathogenesis of psoriasis

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**Background** As a T cell-mediated immune disease, psoriasis is a chronic, recurrent inflammatory skin disease that is caused by multiple incentives. The keratin 17 (K17), one of the key elements in the pathogenesis of psoriasis, has a variety of antigenic epitopes that can bind with autoreactive T cells and activate the activation of autoreactive T cell and participates in the pathogenesis of psoriasis. However, the study on the pathogenic peptides of K17 is not yet fully understood.

**Method** To identify the pathogenic epitopes of K17 during the progress of psoriasis, we predicted the pathogenic epitopes of K17 using online software and constructed the prokaryotic expression plasmids pET-28a-K17-306-430 and pET-28a-K17-85-432 of K17 *in vitro*. Then isolated and purified target protein by Affinity chromatography purification and stimulated PBMC cells isolated from the patient's blood externally, the proliferation and activation of T cells were examined by flow cytometry.

**Results** We successfully constructed the prokaryotic expression plasmids pET-28a-K17-306-430, pET-28a-K17-85-432 and obtained purified peptides. Flow cytometry showed that the peptide of 306-430aa could significantly activate the proliferation of T cells in PBMCs of patients with psoriasis and activate CD4<sup>+</sup>T cells, however, 85-432 aa did not significantly activate T cells.

**Conclusion** This results indicates that 360-430 aa contains certain pathogenic epitopes involved in the pathogenesis of psoriasis, which might be promising therapeutic target for psoriasis treatment.

PB03-004

### Serum level of miR-491-5p and miR-342-5p in association with Henoch-Schonlein purpura

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**Background** Henoch-Schonlein purpura (HSP) is a systemic vasculitis of small vessels, commonly involving the skin, the joints, the gastrointestinal and kidney. Severity of renal involvement affects its long-term prognosis. Association of serum level of miRNA in HSP and its clinical relevance has not been tackled before. This study aimed to detect the serum level of miRNAs in HSP, and analyze its association with clinical parameters, in particular with or without renal involvement.

**Methods:** Achieved serum samples were from 10 patients with HSP, 16 patients with Henoch-Schonlein purpura nephritis (HSPN) who were hospitalized at the initial phase of the disease and 13 healthy volunteers offered their blood samples as controls. RNA exaction and cDNA amplication were carried out using an established Taqman real-time to detect serum miRNA.

**Results** Among 760 screened miRNAs, serum miR-491-5p level was highest in HSPN, as compared to the control ( $P < 0.001$ ), and significantly higher in patients with HSP than the normal controls ( $P < 0.05$ ). Serum miRNA-342-5p level was significantly increased in HSPN, but not HSP, as compared to the group. Elevated serum miR-491-5p and miR-342-5p expression was significant associated with microscopic hematuria, 24 hour proteinuria and microalbuminuria.

**Conclusions** These results suggest that elevated serum level of miR-491-5p and miR-342-5p might be predictive factors for renal involvement of HSP, albeit its pathogenesis remains elusive.

PB03-005

**Expression level, role and its mechanism of MicroRNA-205-5p in squamous cell carcinoma SCC12 cells**

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**Background** The aim of this study was to investigate the effect of miR-205-5p on the proliferation of cutaneous squamous cell carcinoma cell line SCC12 *in vitro* and its association with Bcl-2.

**Methods** The expression of different miRNA levels in HaCaT cells and SCC12 cells was detected by miRNA microarray Assay. Real-time PCR was performed on SCC12 cells and HaCaT cells to determine miR-205-5p expression; The SCC12 cells were transfected with miR-205-5p mimics, miR-205-5p inhibitor, miRNA NC (carrying by Lipofectamine 2000), but no transfection was performed in normal cells. Real-time PCR was used to analyze the expression of miR-205-5p in different cell groups and evaluate the transfection effect about 48 hours. CCK8 assay was used to detect the proliferation of SCC12 cells in four groups after 48 hours of transfection. Apoptosis of SCC12 cells in four groups was detected by flow cytometry after 48 hours of transfection. RT-PCR was used to detect the mRNA levels of *Bcl-2* in the cells of each group after 48 hours of transfection. After 72 hours of transfection, Western-blotting was used to detect the protein expression of Bcl-2 and Bax.

**Results** RT-PCR showed that miR-205-5p expression in HaCaT cells significantly increased to about 25 fold of that in SCC12 cells ( $P < 0.05$ ). After transfection, the expression of miR-205-5p in miR-205-5p group was significantly higher than that in miR-205-5p inhibitors group, NC group and control group ( $P < 0.05$ ). The expression of miR-205-5p in miR-205-5p inhibitors group was significantly lower than that in negative control (NC) group, control group and miR-205-5p group ( $P < 0.05$ ). The proliferation of SCC12 cells was decreased after transfected with the miR-205-5p mimics ( $P < 0.05$ ), increased after transfected with the miR-205-5p inhibitors ( $P < 0.05$ ). The apoptosis rate of the SCC12 cells was higher after transfected with the miR-205-5p mimics ( $P < 0.05$ ), lower after transfected with the miR-205-5p inhibitors ( $P < 0.05$ ). The expression of Bcl-2 at mRNA levels in miR-205-5p group was significantly down-regulated compared with miR-205-5p inhibitors group, NC group and control group ( $P < 0.05$ ). The expression of Bcl-2 at protein levels in miR-205-5p group was significantly down-regulated compared with miR-205-5p inhibitors group, NC group and control group ( $P < 0.05$ ).

**Conclusions** miR-205-5p is downregulated in SCC12 cells compared to HaCaT cells. miR-205-5p can significantly inhibit proliferation and induce apoptosis of SCC12 cells, and its mechanism might be through targeting Bcl-2. miR-205-5p can inhibit BCL-2 mRNA and protein expression. miR-205-5p might serve as a new biomarker to aid in the diagnosis and treatment of SCC.

PB03-006

**Decreased SUMOylation of the retinoblastoma protein in keratinocytes in the pathogenesis of vitiligo**

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*Third People's Hospital of Hangzhou*

**Background** The role of SUMOylation in the pathogenesis of vitiligo has not been reported previously. This study aimed to reveal abnormalities of SUMO conjugation in keratinocytes from depigmented lesions of patients with vitiligo and confirm the role of SUMOylation in keratinocytes from patients with vitiligo.

**Method** Skin samples used for immunohistochemistry (IHC) were obtained by punch biopsy from the depigmented lesions of six patients. Blisters were produced by vacuum and the roofs were collected for keratinocytes culture. HaCat cells were transduced with SUMO1 vectors. Expression of SUMO1, SENP1, Ubc9, SAE1, CDK2, CDK6, PCNA, Rb, phosphorylated Rb (pRb), and  $\beta$ -actin were assessed by western blot. The SUMOylation status of proteins was assessed by immunoprecipitation. Cell cycle was examined by flow cytometry. Cell proliferation rate was tested by CCK8.

**Results** Levels of SUMO1-conjugated proteins were decreased in vitiligo lesions and vitiligo keratinocytes.

Expression of Ubc9 was decreased and SENP1 was increased in vitiligo keratinocytes, without change in SAE1. After knocking-down SUMO1 in HaCat cells, the proliferation of HaCat cells was reduced and the cell cycle was arrested in G1. The expression of PCNA, CDK2, CDK6, and pRB were reduced in SUMO1-knocked down HaCat cells and SUMOylated Rb was also decreased significantly in keratinocytes from lesion of vitiligo patients.

**Conclusions** Vitiligo lesions showed dysregulated SUMOylation and deSUMOylation balance. Dysregulation of cell cycle progression may be present in SUMO1-knocked down HaCat cells. SUMOylation of Rb of keratinocytes plays an important role in vitiligo.

PB03-007

### Role of microRNA-148a in pathogenesis of immune-associated diseases

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MicroRNAs (miRNAs) are highly conserved noncoding RNAs of about 19–25 nucleotides. MiRNAs act as post-transcriptional regulators of gene expression networks. A single miRNA can modulate the expression of several target mRNAs, often through short seed pairing within the 3' untranslated region (UTR). MicroRNAs have been implicated in many physiological processes including proliferation, differentiation, development, apoptosis, and metabolism. MiR-148a abnormal expression in a variety of diseases, especially play an important regulatory role in the occurrence and development of disease. In this review, we have summarized the role of mir-148a in regulating B and T lymphocyte function, the targets of immune and maintenance of epigenetic patterns. MiR-148a may serve as a novel biomarker for the diagnosis and as a new therapeutic target in immune disease.

PB03-008

### Activation of p-JAK/STAT pathway leads to CXCL9/10 secretion to promotes CD8+ T cells in active halo nevus lesional skin

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**Background** The significantly increased numbers of CD8+T cells suggests a contribution to local pathogenesis in dermis in patients with halo nevus. The study aimed to examine the role of chemokine receptors and their ligands in recruiting CD8+T cells in dermis of halo nevus patients which could provide a reliable biomarker for determining depigmentation of halo nevus and potentially use as a guidance for treatment.

**Method** IlluminaHisq sequencing was employed to explore the polymorphisms of genes in halo nevus lesional skin. qRT-PCR was also used to verify the mRNA expression pattern of the chemokines. Expression of chemokine receptors and chemokines were examined by immunohistochemistry between halo nevus and vitiligo, active and stable halo nevus. Furthermore, the involved mediators of JAK/STAT pathway were analyzed by western blotting. The repigmentation of lesion after six month post resection were collected and recorded.

**Results** IlluminaHisq sequencing and qRT-PCR verified that *CXCL9/10* mRNA expression were remarkably increased at the transcriptional level in HN lesional skins. Immunohistochemistry and immunofluorescence revealed significant infiltrates of CD8+ T cells, and the expression of *CXCL9/10-CXCR3* axis was significantly increased in halo nevus, especially active lesional skin. The protein levels of JAK, STAT in active stage were increased. The repigmentation between active stage and stable stage had no significant differences.

**Conclusions** We demonstrate that *CXCL9/10-CXCR3* axis plays an important role in the active HN lesional skin. The *CXCL9/10* expression caused by JAK/STAT signal transduction pathway activation cause recruitment of CD8+ T cells. Resection of nevus during the active stage is useful in promoting repigmentation.

PB03-009

**Effects of UVB on the expression of fibronectin and EDA/EDB in human dermal fibroblasts**

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*Yanbian University Hospital*

**Background** The study aimed to evaluate the effects of UVB irradiation on the mRNA expression of fibronectin (FN) and alternative splicing segments of EDA/EDB in human dermal fibroblasts.

**Methods** RT-qPCR was used to detect mRNA expression of FN and FN-EDA/EDB in UVB irradiated fibroblasts at each time point.

**Results** Following a dose of 100 mJ/cm<sup>2</sup> of UVB irradiation, the mRNA expression levels of FN, EDA and EDB were decreased as compared with that of unirradiated control group. Significant statistical differences ( $P < 0.05$ ) in FN, EDA and EDB mRNA expression were observed between the unirradiated control group (0h) and irradiated groups (1, 2, 4, 8, 12, 24h).

**Conclusion** UVB is an effective factor to down regulate the mRNA expression of FN, EDA and EDB in human dermal fibroblasts. FN, EDA and EDB might play important roles in the process of UVB-induced acute photo-damage of human dermal fibroblasts.

PB03-010

**Role of nano-WS2 in treatment of keloids**Xiao-Jiao Zhao<sup>1</sup>, Yan-Yan Xu<sup>2</sup>, Jin-Hua Huang<sup>1</sup>, Shi-Yao Pei<sup>1</sup>, Ling Jiang<sup>1</sup>, Qing-Hai Zeng<sup>1</sup>, Song Liu<sup>2</sup>, Jing Chen<sup>1</sup>*1. Department of Dermatology, The Third Xiangya Hospital of Central South University**2. Biology, Hunan University*

**Background** The study aimed to explore the role of nano-WS2 to treat keloids.

**Methods** The WS2 nanosheets were fabricated using amino acid-induced two-dimensional material stripping methods and decorated with PEG. Different concentrations of nano-WS2 were administered to immortalized fibroblasts (BJ cells), immortalized keratinocytes (Hacat cells). MTT methods were used to detect the cell viability of BJ and Hacat cells; Flow cytometry was used to detect cell cycle and apoptosis of BJ. New Zealand female rabbits were used to establish KD skin keloid animal models, and randomly divided into blank control group, silicone gel positive control group, and nano-WS2 gel experimental group. Vancouver scar scale (VSS) and patient and observer scar assessmentscale (POSAS) were used to evaluate anti-cicatricial effects.

**Results** We found that nano-WS2-PEG didn't precipitate in PBS, indicating that nano-WS2-PEG gained high water solubility. MTT results found that nano-WS2-PEG could inhibit the proliferation of BJ cells, but there was no inhibitory effect on the proliferation of Hacat cells. Flow cytometry results found that nano-WS2-PEG could induce apoptosis of BJ cells. Compared with NC and silicone gel group, nano-WS2 gel could inhibit the rabbit ear scar better.

**Conclusion** Nano-WS2 has a definite therapeutic effect on keloids on the skin.

PB03-011

**Bradykinin B2 receptor pathway participates in psoriasiform plaque formation in mice**Hai-Bo Liu<sup>1</sup>, Min Zhang<sup>2</sup>, Fang Liu<sup>1</sup>, Xiao-Ping Dong<sup>1</sup>, Hong Sang<sup>1</sup>*1. Department of Dermatology, Jinling Hospital**2. Department of Dermatology, the Affiliated Jiangning Hospital of Nanjing Medical University*

**Background** The underlying mechanisms of immunopathogenesis of psoriasis remain elusive. Recent studies have demonstrated the expression of multiple tissue kallikrein (TK) genes in psoriatic skin lesions. However, the role of

kallikrein-kinin system (KKS) in psoriatic skin development remains elusive, although it has been documented to be involved in regulation of a variety of physiological or pathological processes. The aim of this study was to investigate the role of kinin receptors in psoriatic skin lesions development.

**Methods** We used an imiquimod (IMQ)-induced psoriasis model in mice to test our hypothesis.

**Results** In psoriasis vulgaris, the human kinin B2 receptor (B2R) was strongly expressed in epidermis and appendages, but kinin B1 receptor (B1R) was not detected. In mice model, we found constitutive expression of B2R in normal skin and its expression could be enhanced after IMQ application in mice back skin. In contrast, we failed to find the expression of B1R and its expression couldn't be induced by IMQ. B2R antagonist pretreatment could significantly alleviate IMQ-induced psoriasiform skin inflammation both clinically and pathologically. To support of this, B2R antagonist pretreatment reduced the mRNA level of CXCL1 and CXCL2, suggesting a detrimental role of B2R in psoriasis development. In addition, we found that TK addition could aggravate skin inflammation pathologically and this effect could be compromised by B2R antagonist pretreatment, but not B1R antagonist.

**Conclusions** The study documents the involvement of B2R pathway in psoriatic plaque formation and it may serve as candidate therapeutic target for psoriasis treatment.

PB03-013

### Effects of IL-33 on HaCaT cells and psoriasis-like models in mouse

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**Background** The study aimed to investigate the effects of interleukin-33 on HaCaT cells and psoriasis-like inflammation induced by imiquimod.

**Methods** HaCaT cells were plated 24 hours later. Different methods were used to detect cell proliferation and the effects of autophagy. A psoriasis-like lesion model was established. Thirty female BALB/c clean grade mice were randomly divided into three groups: normal control group, model group, and IL-33 treatment group. After 6 days of continuous treatment, the lesions on the back of the mouse were observed, the proportion of lymphocytes in the lesion tissue and spleen, and the content of TNF $\alpha$  in the serum were measured.

**Results** IL-33 enhanced the cell proliferation and secretion of inflammatory factors and inhibited apoptosis in HaCaT cells. At the same time, the scales, erythema and thickening of the lesions on the back of the mice treated with IL-33 were more obvious than of model group. The autophagy was weakened and the content of TNF $\alpha$  in the serum was increased in IL-33 treatment group.

**Conclusion** IL-33 promotes the proliferation of HaCaT cells and aggravates the symptoms of psoriasis-like models, which suggest that blocking the high expression of IL-33 in psoriasis might alleviate the progression of psoriasis.

PB03-014

### Effects of tacrolimus related chemokines CXCL9, CXCL10 in HaCaT cells simulated by IFN- $\gamma$

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**Background** To analyze the effect of tacrolimus on the secretion of CXCL9, CXCL10, p-JAK1, and p-STAT1 by HaCaT cells stimulated by IFN- $\gamma$ , and to explore the mechanism of tacrolimus in the treatment of vitiligo.

**Methods** HaCaT cells were pretreated with 1, 4, 10, 20, 40, 60, 80, 100, and 120 mg/L tacrolimus for 4 h, and cell proliferation was detected by MTT assay. HaCaT cells were divided into 4 groups: blank control group, IFN- $\gamma$  group (500 U/ml), tacrolimus group (20 mg/L) and tacrolimus + IFN- $\gamma$  group. HaCaT cells were pretreated by tacrolimus for 4 hours and IFN- $\gamma$  stimulated cells for 12 hours or 48 hours. Real-time fluorescence quantitative was used to detect the expression of CXCL9 and CXCL10 RNA. The protein expression of CXCL9, CXCL10, p-JAK1, and p-STAT1 was detected by Western blotting. The cell culture supernatants protein levels for CXCL9 and CXCL10 were assayed

by ELISA. The protein expression of CXCL9 and CXCL10 in HaCaT cell culture supernatants was detected by ELISA.

**Results** The maximum tacrolimus concentration that had no effect on HaCaT cell proliferation was 20 mg/L ( $P > 0.05$ ). After HaCaT cells were pretreated with 20  $\mu\text{g/ml}$  tacrolimus, the expression of genes of *CXCL9* and *CXCL10* decreased from  $10369.08 \pm 7.99$ ,  $290.02 \pm 2.16$  to  $5914.33 \pm 4.59$ ,  $114.96 \pm 0.73$ , respectively ( $P < 0.01$ ), the protein expression of CXCL9, CXCL10, p-JAK1 and p-STAT1 decreased from  $8.47 \pm 0.29$ ,  $7.87 \pm 0.17$ ,  $4.20 \pm 0.18$ ,  $4.29 \pm 0.11$  to  $7.36 \pm 0.13$ ,  $7.36 \pm 0.09$ ,  $2.60 \pm 0.16$ ,  $3.62 \pm 0.19$ , respectively ( $P < 0.01$ ), and the protein expression of CXCL9, CXCL10 in the supernatant of HaCaT cells decreased from  $1213.36 \pm 0.95$ ,  $1722.41 \pm 2.57$  to  $426.45 \pm 0.31$ ,  $554.12 \pm 0.56$ , respectively ( $P < 0.01$ ), which were up-regulated by 500 U/ml IFN- $\gamma$ .

**Conclusion** Tacrolimus inhibits the secretion of CXCL9, CXCL10, p-JAK1 and p-STAT1 in HaCaT cells stimulated by IFN- $\gamma$ .

PB03-015

### **SHARPIN regulates cell proliferation in basal cell carcinoma by activation of the GLI2 transcriptional factor and phosphorylation of c-Jun signaling pathway**

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**Background** SHARPIN has been reported as a tumor-associated gene in a variety of cancers. However, the roles of SHARPIN in cutaneous cancers have not been investigated yet. This study aimed to investigate the potential function of SHARPIN in the development of basal cell carcinoma (BCC).

**Methods** The protein expression of SHARPIN in BCC tissues and cell line TE354. T was evaluated by immunohistochemistry and Western Blotting (WB). Immunofluorescence was employed to identify the cellular location of SHARPIN. The TE354. T cells were transfected with lentivirus vectors of shRNA targeting SHARPIN. The effects of SHARPIN on cell proliferation, apoptosis, invasion and migration were analyzed with CCK-8, EdU, TUNEL, Annexin V, and Transwell, respectively. Furthermore, WB was performed to measure the expression of key members of MAPK cascade and Hedgehog signaling pathway, including JUN, GLI and other related proteins.

**Results** SHARPIN expression was significantly down-regulated or lost in BCC tissues and cell line. The evaluation of cell proliferation by CCK-8 and EdU demonstrated that inhibition of SHARPIN can promote TE354. T cells proliferation. The expression of Cyclin D1 and CDK4 was significantly upregulated in SHARPIN inhibiting group than that in control group. Phosphorylated c-JUN and GLI2 were up-regulated following inhibition of SHARPIN expression.

**Conclusions** This study find that SHARPIN might act as a tumor suppressor in BCC by activating the GLI2 transcriptional factor and phosphorylation of c-JUN, which result in the over-expression of Cyclin D1 and CDK4, and acceleration of G1-S phase of BCC cells.

## *PB04 Benign and Malignant Tumors*

PB04-001

### **Spontaneously regressive angiolymphoid hyperplasia with eosinophilia: A case report with evidence of dendritic cells proliferation**

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A 79-year-old man presented with multiple erythema nodules located on the right side of the scalp. On physical examination, the right side of the patient's scalp showed multiple violaceous erythema, firm papules, nodules, and measuring 0.5-1.0 cm in diameter, without evidence of lymphadenopathy. Peripheral eosinophilia and serum IgE were normal. Histopathology revealed vascular hyperplasia, the larger vessels were lined by characteristic "hobnail"

endothelial cells, which protruded into the lumen and have ovoid nuclei and intracytoplasmic vacuoles accompanied by mixed inflammatory infiltration of prominently eosinophils and lymphocytes in deep dermis. Immunohistochemical examination revealed dendritic cells of epidermis increased, which stained CD1a. Angiolymphoid hyperplasia with eosinophilia (ALHE) was diagnosed. The lesions regress spontaneously after one month.

PB04-006

### **Kimura disease with chronic eczema: A case report**

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Kimura disease is a rare chronic, benign inflammatory disorder that presents with slowly enlarging, nontender, swellings in the head and neck region. We described a case of Kimura disease with unusual manifestations. A 22-year-old Chinese girl presented with mass on eyelid which gradually increased in size for 5 years. The trunk and limbs of the patient showed signs of chronic eczema, and there were some folliculitis on her back. Neck and abdominal ultrasound revealed enlargement of lymph node in left supraclavicular and groin superficial. Eosinophil is very high in the blood routine and is accompanied by high IgE. Interestingly, the patient had a history of 5 years of glomerulonephritis and 14 years of eczema. One year ago, the patient underwent surgery to remove the lumps and now relapse. The girl treated with corticosteroid (Methyl prednisolone 40 mg for 2 weeks and reduction slowly) and thalidomide (75 mg qd). We controlled Kimura disease and eczema in this patient by using a combination of systemic steroid therapy and thalidomide. Therefore, we think that combination of medical therapy is better than surgery.

PB04-002

### **A retrospective study and analysis of clinical characteristics of non-melanoma skin cancer**

Zi-Yu Chai, Xue-Zhu Xu

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**Background** The study aimed to summarize the characteristics of non-melanoma skin cancer (NMSC) in the southern part of the Liaoning Province, and to improve clinical diagnosis & treatment, and to implement primary prevention of the tumor.

**Methods** Retrospective analysis of patients who were hospitalized between 2013 and 2017. A total of 72 NMSC cases were collected and confirmed by pathological biopsy. Characteristics of all cases were analyzed and summarized.

**Results** The composition of this study was as follows: squamous cell carcinoma (43.06%), basal cell carcinoma (41.67%), Bowen disease (13.89%), and extramammary Paget's disease (1.4%). Patients in this study were between 70 and 91 years old and the incidence of male to female was 1:1.5. Head and neck were the main disease locations and the average disease course was  $5.90 \pm 9.87$  years. Single/multiple ratio and gender did not have statistical significance. Roughly 1/4 of cases had a history of trauma and scratch. The relation between CEA, SCCA, AFP, NSE, CYFRA211 and NMSC was not statistical significance.

**Conclusions** NMSC in the elderly may be associated with skin aging, ultraviolet radiation, and chronic inflammation. The incidence in women is higher compared to that in men, which might be related to the risk factors of contact in women. To improve public awareness, increasing studies related to the propaganda and education of skin tumors is warranted to ensure that suspicious skin lesions are treated immediately. Tumor biomarkers may be useful for screening of tumors. Next, minimally invasive diagnosis and treatment should be further explored.

PB04-003

**One case report of Human papillomavirus (HPV) 16- induced bowenoid papulosis among the right digits**

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*General Hospital of Shenyang Military Command*

A young man presented with multiple black-brown-color rashes in the intertriginous area among the 3rd, 4th and 5th toes of the right foot for 3 months. The rashes was initially a black-brown-color maculopapule with size of a grain to a red bean, and increased gradually. The histopathologic features showed hyperkeratosis, focal parakeratosis, granulosis, acanthosis, the elongated broad rete, and irregular arrangement of the spinous cells and some vacuolated cells in granular and superficial spinous cells layer were present. Lots of spinous cells were atypia and loss of normal architecture. Infiltration of some lymphocytes were present. The immunohistopathologic finding showed epidermal cells were positive for CK5/6, 20% positive for P53, partly positive for P40 and P63, negative for S100, HMB45, melan-A, CD117 and SOX, and the positive rate of Ki67 was more than 60%. Positive for HPV16 was confirmed by PCR- Reverse Dot Blot hybridization. The diagnosis of bowenoid papulosis was made. He was treated by surgical excision and skin grafting. No recurrence was found in six months of follow-up.

PB04-004

**PKM2 is a novel targeting molecule for melanoma treatment**

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**Background** Cutaneous melanoma, originally derived from transformed melanocytes, is an aggressive malignant cancer that disseminates from a primary tumor in an early stage and forms metastases in distant organs, such as the brain and bone. The significant characteristics of melanoma include its resistance to traditional chemotherapy and radiotherapy, therefore, the treatment of patients with advanced melanoma is confronted with a big challenge.

**Methods** Lenti-virus infection was performed to knock down targeting gene expression. MTS assay was conducted to assess the cellular viability to examine cell growth. Colony formation was performed to test additional cell proliferation in plate. Transwell and wound-healing were conducted to test melanoma cells invasion and migration. Xenograft nude mice was performed to examine the melanoma cells growth *in vivo*. Seahorse, glucose-up take and lactate production were performed to test glycolysis. Virtual screening was conducted to generate computer model for PKM2 and identify t potential inhibitors for targeting PKM2 based on FDA approved database. Pull down assay and PK activity assay were performed to test inhibitory efficient for PKM2.

**Results** The malignant phenotypes, such as colony formation, invasion and migration, were positively related to high PKM2 activity and glycolytic capability in melanoma cells. Knockdown of PKM2 expression remarkably attenuated melanoma cell proliferation, invasion and metastasis *in vitro* and *in vivo*, suggesting that PKM2 is a potential therapeutic molecule in melanoma. To identify novel PKM2 inhibitors, we performed structure-based virtual screening, an FDA-approved medicine, was identified as a potential PKM2 inhibitor. Furthermore, we demonstrated that this compound directly binds to PKM2 and blocks PKM2 enzyme activity, leading to inhibition of aerobic glycolysis. Ben treatment significantly inhibited cell proliferation, colony formation, invasion and migration *in vitro* and *in vivo*. Moreover, inhibition of PKM2 expression blunted the efficacy of this compound treatment in melanoma cell growth, indicating that this is a specific inhibitor that targets PKM2. Interestingly, PKM2 activity and aerobic glycolysis were higher in BRAFi melanoma cells than in parental cells. Inhibition of PKM2 via suppression of its expression or inhibitor treatment dramatically reduced the malignant phenotype of BRAFi-resistant cells *in vitro* and *in vivo*.

**Conclusions** PKM2 activity is related to melanoma malignant phenotype and plays critical roles in melanoma cells growth. Suppression of PKM2 expression and activity significantly attenuates melanoma cells growth *in vitro* and *in vivo*, indicating PKM2 is a potential molecule target for melanoma treatment.

PB04-005

**Characteristics of 356 Skin malignant solid tumor and 162 precancerous skin lesions**

Zi-Lian Liu, Chuan Ma

*Peking University Third Hospital*

**Background** The characteristics of skin malignant solid tumor and precancerous lesions were studied and clues for potential pathogenesis and preventive measures provided.

**Methods** The clinical data of the patients were analyzed from 2013 to 2016 in Dermatology Department of Peking University Third Hospital by statistical methods.

**Results** There were 343 Non-melanoma skin cancer (NMSC) and 162 precancerous patients. The number of BCC, SCC and KA in NMSC accounted for the top three, AK and cutaneous horn in precancerous lesions accounted for 93.8%. There was no significant difference in gender but the elderly (over 60 years) were more likely involved in all types of NMSC. BCC had a predilection on the head and neck (79.6%), especially in the nose. Invasive SCC was mainly on head and neck (61.1%) but SCC *in situ* was mainly on the trunk and extremities (70.9%).

**Conclusions** The incidence of NMSC in our hospital is increased during past 4 years, especially for BCC involved head and neck in the elderly. The environmental risk factors (UV, exhaust, PM2.5) which might induce the malignant skin tumors should be caution. The early education and screening of skin cancer are still necessary.

PB04-007

**Comprehensive therapy of basal bell carcinoma in the nasal wing: A case report**

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*Zhejiang Provincial People's Hospital*

A 46-year-old man worker was admitted to our department with a black nodule on the left nasal wing for several years. In the past six months, the growth of black nodule has increased significantly, with occasional itching and rupture of bleeding after scratching. His past medical history was unremarkable. The Pathology results were basal cell carcinoma, partial positive margin. The patient was diagnosed as basal cell carcinoma and was treated with exairesis and skin flap transplantation, postoperative PDT. After treatment, the patient has no recurrence till now.

PB04-008

**Aberrant expression and high-frequency mutations of SHARPIN in nonmelanoma skin cancers**

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*Department of Dermatology, Shenzhen Hospital, Southern Medical University*

**Background** The incidence of nonmelanoma skin cancers (NMSCs), which include squamous cell carcinoma (SCC) and basal cell carcinoma (BCC), have shown a dramatic increase in the past decades and accounted for the most common malignancy in white populations. SHARPIN has been identified as a commonly overexpressed pro-oncogene. However the functions of SHARPIN in NMSCs have not been reported. This study aimed to investigate immunohistochemical staining intensity and SHARPIN mutations in NMSCs.

**Methods** SHARPIN expression was detected by immunohistochemistry in NMSCs and 14 other kinds of skin tumors. The sequences of SHARPIN were analyzed in 55 BCC and 47 SCC formalin-fixed paraffin-embedded samples.

**Results** SHARPIN is highly expressed in normal skin tissues. High and moderate expression levels of SHARPIN were observed in all kinds of benign skin tumors. However, the expression of SHARPIN was absent in cancer nests and significantly low in precancerous lesions of NMSCs. The total mutation frequency of SHARPIN is 21.8% in BCCs and 17.0% in SCCs.

**Conclusion** These findings indicate that SHARPIN might play a tumor-suppressing role and act as a promising diagnostic biomarker in NMSC.

PB04-009

**Study of the expression and function of SHARPIN in melanoma**

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**Background** Melanoma is a tumor originating from the pigment-producing melanocytes in human tissues, and malignant melanoma, especially advanced melanoma, is a highly invasive and lethal malignancy. As a new tumor-related gene, SHARPIN participates in a variety of cancers including liver cancer, renal cell carcinoma, osteosarcoma, prostate cancer and breast cancer. At present, the study on the expression of SHARPIN in melanoma and its effect on its prognosis has become a hot research topic.

**Methods** Immunohistochemistry and immunofluorescence assay were used to detect the expression and localization of SHARPIN in melanoma and normal skin tissue. Lentivirus vectors for overexpression and inhibition of SHARPIN were constructed and transfected to B16-f 0 and B16-F10 cells. The transfection efficiency was detected by Western blot and qRT-PCR. The effects of SHARPIN expression changes on the proliferation of B16-f 0 and B16-F10 cells were detected by EdU.

**Results** Immunohistochemistry and immunofluorescence results showed that SHARPIN expression was decreased in melanoma tissues. EdU results showed that inhibition of SHARPIN expression may promote the proliferation of B16-f 0 and B16-F10 cells.

**Conclusion** Low expression of SHARPIN might promote the development of melanoma.

PB04-010

**A challenging case of primary cutaneous Hodgkin's lymphoma**Ru-Jun Xue<sup>1,2</sup>, Xin Tian<sup>1,2</sup>, Xi-Bao Zhang<sup>1,2</sup>*1. Department of Dermatology, Guangzhou Institute of Dermatology**2. Institute of Dermatology, Guangzhou Medical University*

Primary cutaneous lymphoma (PCL) is a rare entity accounting for less than 1% of all malignant tumor cutaneous. Diagnostic criteria for primary Hodgkin's lymphoma of the cutaneous (CHL) are: the presence of sufficient tissue for diagnosis, close interaction between cutaneous tissue and lymphomatous infiltrate and no evidence or prior diagnosis of widespread lymphoma. Our case illustrates an unusual presentation of Hodgkin's lymphoma of the cutaneous: clinically as no painful nodular and core biopsy as hemangioma kind of performance, the final diagnosis requiring surgical biopsy. Current information regarding this entity is scant, mainly build upon its rarity. In this paper we assess the clinical presentation, the step-by-step diagnosis, the treatment and the importance of immunohistochemistry in this uncommon condition.

A 35-year-old man was referred to our hospital in July 2014 for one no painful, solid, nodular In front of the neck lesions, measuring 4×3 cm. This patient describes six month history of these lesions. Clinical examination revealed smooth and ulceration of the overlying skin, left axillary erythema and enlarged axillary lymph nodes. It can be seen a surgical scar with exudative hemorrhage. Adhering epidermal it can move follow the swallowing act.

The thoracic CT scan revealed that the skin lumps were part of a 4 ×3 cm with adjacent left axillary lymphadenopathy. Standard blood results were within normal limits, excepting mild elevated white blood cell (WBC). The patient didn't have family history and other chronic diseases. The case report was considered as vascular tumor in Cancer Center of Guangzhou Medical University. In order to further diagnosis, this patient transferred to our clinic. Carcinoembryonic antigen (CEA) was measured and proved to be within normal limits. The patient was scheduled for a core biopsy which proved to be inconclusive. However, the paraffin embedded tissue revealed a marked vascular hyperplasia, expansion reaction with lymphocytes, plasma cells, neutrophils, epithelioid histiocytes, necrotic debris and marked cytological atypia, consistent with angioneoplasm, although it couldn't completely exclude a malignant origin. Abdominal color doppler showed the liver, gallbladder, pancreas, spleen, kidneys, retroperitoneal normal. Blood, urine, conventional biochemistry and electrolyte showed normal. Microscopic examination of the skin lesions showed many lymphocytes, plasma cells, histiocytes and occasional atypical mononuclear cells with prominent nucleoli. The

dermis had aggregates of lymphocytes, plasma cells, eosinophils, macrophages, and mononucleate and an occasional binucleate classical Reed-Sternberg (RS) cell. We also observed a mixed proliferation of eosinophiles, plasma cells, giant pleomorphic Reed-Sternberg cells, pop-corn-like cells, Hodgkin cells and anaplastic multinucleated giant cells. The background showed prominent broad fibroblast poor collagen bands that separated the lymphoid tissue into nodules consistent with the nodular sclerosis- variant of classic Hodgkin's lymphoma. Immunohistochemistry showed: CD30(+), and Ki-67 large cell 100% (+).

## *PB05 Bullous Diseases*

PB05-003

### **A review of 11 patients with pemphigus herpetiformis**

Guan-Ru Wu, Sheng-Ru Zhou, Meng Pan

*Rui Jin Hospital Shanghai*

Pemphigus herpetiformis (PH) is a rare type of pemphigus that resemble to dermatitis herpetiformis clinically, often shows erythematous herpetiform papules, vesicles, or pustules, in an annular-shaped pattern and sometimes with pruritic, mostly on the trunk and extremities.

A total of 11 patients have been diagnosed as Pemphigus herpetiformis in our hospital. With the sex ratio (male : female) of 7:4, and an average age of 59 years. Lesions mainly distributed on trunk and proximal extremities. Only one case with mucous membrane involvement and none of the cases being tested as Nikolsky sign positive. Direct immunofluorescence microscopy with intraepithelial intercellular IgG and C3 deposits in all cases while histopathology and Indirect immunofluorescence shows diversity.

Six cases with mild syndrome respond well to systemic application of corticosteroids or halometasone cream and Minocycline. Other five cases, additional to systemic application of steroids, base on the clinical features and responses to initial treatment of each case, the use of immunosuppressive drugs such as Azathioprine, Methotrexate, Dapsone, Cyclophosphamide, Cyclosporine successfully induce clinical remission.

PB05-004

### **A case of linear IgA bullous dermatosis during gestation**

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Linear IgA bullous dermatosis (LABD) is a rare auto-immune bullous disease occurring in adults or childhood. There are similarities and differences between these two subtypes of the disease. We report a twenty-seven-year-old patient with adult subtype of LABD. The patient started to have blisters on her arms from the second month of her second gestation. She reminded a history of mild similar vesicles and itching skin problems during her first gestation two years ago. Numerous vesicles or bullae and crusts on the red macules were seen on her shoulders, back and four extremities. Histopathology for biopsy taken from the arm lesions and direct immunofluorescence, ELISA, and western blotting was done. Histopathology showed subcutaneous blisters and large amount of infiltration of neutrophils and lymphatic cells in upper dermis layer. Direct immunofluorescence shows linear IgA deposition on the BMZ. ELISA for Desmoglein1, Desomoglein3, Bp180 and Bp230 IgG antibodies were negative. Immunoblot using human epidermis protein stripes showed IgA antibodies from patient sera were reacted against 180,000 D, 120,000 D and 100,000 D proteins. The patient was successfully treated with low dose of dapsone (100 mg daily) for 2 weeks. The lesions recovered in three weeks after delivery without any medication. Linear IgA dermatosis is a rare immune-mediated blistering skin disease. It may affect people of all races and all ages, but actually two peaks have been predominantly observed: childhood-onset and adult-onset. Our patient was probably gestation induced, which was a novel correlated factor of the disease.

PB05-005

**Recessive dystrophic epidermolysis bullosa (RDEB) patient with COL7A1 gene mutation**

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*Chungnam National University Hospital*

**Background** Recessive dystrophic epidermolysis bullosa (RDEB) is the most severe type of dystrophic epidermolysis bullosa. The signs and symptoms of this condition involve widespread blistering that can lead to vision loss, disfigurement, and other serious medical problems. RDEB is caused by mutations in the *COL7A1* gene and is inherited in an autosomal recessive pattern. The aim of this study was to find the mutations in *COL7A1* gene of an RDEB patient.

**Methods** We obtained skin specimen from a 19-year old RDEB patient, then cultured keratinocytes and fibroblasts. Using the genomic DNA isolated from cultured fibroblasts, we performed the whole genome sequencing.

**Results** We examined the *COL7A1* expression in cultured RDEB keratinocytes and fibroblasts. Although the mRNA was transcribed similar to wild type cells, protein level for COL7A1 was significantly reduced in RDEB keratinocytes and fibroblasts. In addition, COL7A1 protein size in RDEB keratinocytes was likely smaller than that of wild type. WGS identified two mutations in coding region of *COL7A1* gene of an RDEB patient, in exon 15 and exon 115. For lineage tracing, gDNAs isolated from parents; blood were sequenced. Results showed that exon 15 mutation was from father while exon 115 mutation from mother.

**Conclusion** The study confirms that an RDEB patient receives mutational genes in an autosomal recessive pattern that caused RDEB phenotype.

PB05-006

**Serum thymus and activation-regulated chemokine (TARC/CCL17) is a useful marker to predict the disease activity in patients with bullous pemphigoid**Mao Suzuki<sup>1,2</sup>, Yukie Yamaguchi<sup>2</sup>, Miwa Kanaoka<sup>2</sup>, Kazuko Nakamura<sup>1</sup>, Setsuko Matsukura<sup>3</sup>, Kazuo Takahashi<sup>4</sup>, Michiko Aihara<sup>2</sup>, Takeshi Kambara<sup>1</sup>1. *Yokohama City University Medical Center*2. *Department of Environmental Immuno-Dermatology, Yokohama City University Graduate School of Medicine*3. *Saiseikai Yokohama City Nanbu Hospital*4. *International University of Health and Welfare Atami Hospital*

**Background** The aim of the study was to evaluate the usefulness of serum thymus and activation-regulated chemokine (TARC/CCL17) as a marker to predict the disease activity in patients with bullous pemphigoid (BP).

**Methods** We studied 16 patients with BP who were treated with any of steroid pulse therapy, plasma exchange, or intravenous immunoglobulin in our hospitals between 2012 and 2017. Patient's characteristics, treatment regimen, and outcomes were collected by medical charts, and determined levels of serum TARC during the clinical course were analyzed in association with those clinical data.

**Results** As results, five out of 16 patients (31.25%) relapsed. There were no significant differences with regards to age, highest titers of anti-BP180 autoantibodies (Abs), TARC levels, and initial treatments between patients groups with relapsed and non-relapsed. TARC levels were positively correlated with Pemphigus Disease Area Index (PDAI;  $r=0.75$ ,  $P=0.008$ ) and Bullous Pemphigoid Disease Area Index (BPDAI;  $r=0.88$ ,  $P=0.050$ ). In addition, those levels were increased in advance or at the time of relapse in BP patients with relapsed during the clinical course. Moreover, the increase of TARC levels tended to be observed earlier than that of anti-BP180 NC16A Abs in each patient.

**Conclusion** This study might suggest that TARC would be a useful marker for predicting the disease activity in patients with BP.

PB05-001

**BCR repertoire of B cells in pemphigus lesions**

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**Background** Pemphigus is an autoimmune bullous disease, which targets the skin and /or mucous. The current study indicates B cells reside in pemphigus lesions to produce autoantibodies. The study aimed to clarify the local autoantibody response, we performed BCR sequencing of pemphigus lesional B cells.

**Methods** The cell suspensions were prepared by incubating skin with a digestion buffer and the lymphocytes were isolated. Furthermore, B cells were sorted by a magnetic cells-sorting system. Sorted lesional B cells from three pemphigus patients were pooled together for BCR repertoire sequencing. The B cells from the peripheral blood of the same three patients were taken as control.

**Results** The total numbers of clones were 7,138,184 for the skin B cell sample and 5,110,011 for the peripheral B cell sample. The majority of the clones were class-switched of lesional B cells. We identified 5,565 unique clonotypes in skin B cell sample and 26,581 unique clonotypes in peripheral B cell sample. There were more dominant clonotypes in skin B cells. While the peripheral B cell clonotypes were more diverse. 3,656 clonotypes were shared between peripheral and lesional B cells. In addition, lesional and peripheral B cells have similar tendency in the VDJ gene usage. While IGHV1-69 was more common in the lesional B cell repertoire, and IGHV3-23 was more common in the peripheral B cell repertoire.

**Conclusions** These data suggest that skin BCR clonotypes might expand in the pemphigus lesions and B cells might circulate between the circulation and local lesions.

PB05-002

**Refractory bullous pemphigoid treated with mycophenolate mofetil and leaving Beau lines and milia during recovery**

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Bullous pemphigoid is an autoimmune blistering disorder caused by immunoglobulin G autoantibodies to two hemidesmosomal components of the epidermal basement membrane, BP180 and BP230. Therapeutic modalities include corticosteroids and various immunosuppressive agents, such as azathioprine, cyclophosphamide, methotrexate and cyclosporine A. We report a case of refractory bullous pemphigoid accompanied by eosinophilia responded well to mycophenolate mofetil and left numerous milia on the healed lesions and Beau lines on almost all the nails behind during recovery.

*PB06 Collagen Diseases and Vasculitis*

PB06-002

**A case of verrucous hyperplasia of amputation stump**

Si Young Yang, Kang Su Kim, Ji Eun Hahm, Jae Won Ha, Chul Woo Kim, Sang Seok Kim

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Verrucous hyperplasia refers to a reactive hyperplastic condition, characterized morphologically by numerous, coalescent warty papules and plaques, also known as papillomatosis cutis lymphostatica or lymphostatic congestion. It occurs when the chronic pressure effects of a poor prosthetic fit disrupt vascular and lymphatic channels, resulting in chronic tissue edema. A 61-year-old man presented with verrucous papules developing over his amputation site for

a duration of 10 years. The patient had to undergo an above-knee amputation on his right leg 30 years ago. Since then, he had used a plastic prosthesis with buckle and strap and changed it for a suction-socket one about 10 years ago. On examination, multiple skin colored to erythematous nodules were present, coalescing to form plaques over the amputation stump. The laboratory tests, including HPV and TB PCR, bacterial and fungal culture were all negative. Histologic examination showed markedly papillomatosis with hyperkeratosis and acanthosis of epidermis, and dilated vessels in the upper dermis. Neither dysplasia nor atypical cell was observed. From these clinical and histopathologic findings, he was diagnosed as verrucous hyperplasia of amputation stump. For the treatment, stopping and changing the prosthesis were encouraged. On next follow up, after 6 weeks, lesions showed marked improvement.

PB06-003

### **Calcitriol-induced Calcinosis cutis**

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Calcinosis cutis is defined as an abnormal deposition of calcium phosphate in the skin and subcutaneous tissue. This uncommon disorder is classically divided into four subtypes: dystrophic, metastatic, idiopathic and iatrogenic. Iatrogenic calcinosis has been reported to be associated with intravenous calcium chloride or calcium gluconate therapy. We report a case of calcinosis cutis in a kidney transplant patient taking calcitriol orally. A 66-year-old woman was referred to dermatology for the subcutaneous nodules on her extremities for several years. On physical examination, the patient had multiple bean sized flesh colored firm nodules on her extremities. There were no specific symptoms of itching or pain. She had hypertension, diabetes and had right kidney transplantation in 1993. She also continued to take oral calcitriol 5 years ago. Laboratory data showed a calcium (total) level of 9.2 mg/dl (normal range 8.4–10.2 mg/dl) and a phosphorous level of 3.6 mg/dl (normal range 2.5–4.6 mg/dl). Histopathologic findings showed basophilic-stained calcium deposits in the dermis. Black colored calcium crystals can be identified in the Von Kossa stain. Therefore, she was diagnosed with calcitriol induced calcinosis cutis and has stopped to take calcitriol.

PB06-001

### **Discoid lupus erythematosus at the site of a healed scald of edible oil: an illustration of isotopic response**

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Discoid lupus erythematosus (DLE) is a common clinical variant of cutaneous lupus erythematosus. It has diverse and variable etiologies, including genetic factors, environmental factors, especially exposure to ultraviolet light, and gonadal hormone. We present a rare case of DLE induced by scald of edible oil. A 53-year-old woman suffered a scald of edible oil on the right cheek, three years ago, which appeared as small vesicles on a erythema base with burning sensation. The skin lesions cured in two weeks without treatment, and left an asymptomatic, ephemeral, dark-reddish patch. About six months ago, the patient consulted to our department due to a fingernail-sized pruritic scaly erythema with irregular border at the site of the previous scald. She had no fever, arthralgias or photosensitivity. Laboratory findings were normal, including a complete blood cell and differential count, erythrocyte sedimentation rate, and tests for antinuclear antibodies, serum immunoglobulins, and rheumatoid factor. Skin biopsy revealed follicular keratotic plugging, lymphocytic zonal infiltration in the upper epidermis, liquefaction degeneration of the basal layer of the epidermis, and patchy lymphocytic infiltration in a perivascular and periadnexal distribution. Direct immunofluorescence showed IgA, IgG, IgM zonal arrangement along the dermoepidermal junction. DLE was confirmed. This case is a good illustration of isotopic response. The isotopic response may prove useful in understanding the pathophysiology of diseases of unknown origin, but the pathogenesis of the isotopic response is not

well understood.

PB06-004

### Study correlation between the expression of CCR6-CCL20 axis in the serous membrane effusion and the internal organs of lupus mouse and the lupus-like symptoms

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**Background** The aim of the study was to investigate the roles of CCR6 and its ligand CCL20 in the serous membrane effusion and the internal organs of lupus mouse and the correlation of the lupus-like symptom and to explore the mechanism of the serositis in SLE.

**Methods** Selecting nine B6.MRL-Fas<sup>lpr</sup>/J lupus mice as experimental group and six C57BL/6J mice as healthy controls. The enzyme linked immunosorbent assay (ELISA) was performed to assess the serous membrane effusion of CCL20 in experimental group and healthy controls. Take the kidneys, spleen, liver, and lymph nodes of the two groups. The formalin-fixed, paraffin-embedded samples were cut into serial section (thickness 4 μm). CCR6 expressions were detected by Immunohistochemical SP three-step method in different tissues. Data obtained above and Th17 cell in spleen, IL-17A, ANA antibodies, dsDNA antibodies in the serum and 24-hour urinary protein, respectively correlation analysis.

**Results** The expression of CCL20 in the serous membrane effusion: The expression of CCL20 in the serous membrane effusion was significantly increased in lupus mouse compared with healthy controls ( $P < 0.05$ ). The expression of CCL20 in the serous membrane effusion and Th17 cell in spleen, IL-17A, ANA antibodies in the serum and 24-hour urinary protein were positively correlated. No significant correlation between The expression of CCL20 in the serous membrane effusion and dsDNA antibodies in the serum ( $P > 0.05$ ). The expression of CCR6 in the internal organs of mice: The expression of CCR6 were significantly higher in the spleen and lymph node than the healthy controls ( $P < 0.05$ ). However, CCR6 were hardly expressive in kidneys and liver. The positive rate of the spleen (8/9, 88.9%) was higher than the healthy controls (3/6, 50%), and the difference was statistically significant ( $P < 0.05$ ). The positive rate of the lymph node (8/9, 88.9%) was higher than the healthy controls (2/6, 33.3%), and the difference was statistically significant ( $P < 0.05$ ). The expression of CCR6 in spleen and lymph node and IL-17A, ds-DNA antibodies in the serum, Th17 cell in spleen were positively correlated ( $P < 0.05$ ). No significant correlation between CCR6 and ANA antibodies in the serum, 24-hour urinary protein ( $P > 0.05$ ).

**Conclusion** The expression of CCL20 in serous membrane effusion is significantly increased in lupus mouse. The expression of CCR6 are significantly higher in the spleen and lymph node, and are positively correlated with Th17 cell in spleen, IL-17A, ds-DNA antibodies in the serum. This suggests that CCR6-CCL20 axis might be involved in the formation of SLE serositis, the inflammation of the spleen and lymph nodes and the activities of lupus-like symptoms.

## PB07 Cosmetic Dermatology

PB07-001

### A decade retrospective study of light/laser devices in treating rosacea

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**Background** The present study was aimed to perform a decade retrospection of the patients with nasal rosacea who were treated with light/laser devices.

**Methods** A long-term study between 2008 and 2017 was performed retrospectively. Categorization of rosacea type (erythema/telangiectasia, ET; papules/pustules, PP; rhinophyma, RP) was made according to the photographs. Device settings, treatment regimens and treatment sessions of light/laser facilities were summarized. Efficacy was evaluated

using a quartile grading scale of improvement.

**Results** In all, 807 patients received light/laser treatments. The types of patients were ET ( $n=196$ ), PP ( $n=95$ ), RP ( $n=42$ ), ET+PP ( $n=334$ ), ET+RP ( $n=15$ ), PP+RP ( $n=88$ ), and ET+PP+RP ( $n=37$ ). The lesions of ET or PP were mainly treated with each of 3 non-invasive devices (Intense pulsed light, IPL; Dye pulse light, DPL; Dual wavelength laser system, DW) and those of RP were mainly treated with the Fractional carbon dioxide (FCO<sub>2</sub>) laser. For all types of rosacea except for RP (2-4 sessions), most received 4-6 sessions of treatments. All types except for ET+PP+RP showed a better and better trend of efficacy with the increasing number of sessions ( $P<0.05$ ). Of all the 7 types, the patients who achieved more than 50% improvement accounted for 74.5%, 58.3%, 83.3%, 69.2%, 73.3%, 61.4%, and 51.4%, respectively.

**Conclusion** The multiple, sequential light/laser devices might be safely used in nasal rosacea with various degrees efficacies based on different types.

PB07-002

### Medical mechanism and clinical application of low level laser therapy

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**Background** Laser technology is widely used in the field of medicine. According to the energy, laser equipment for medical research and clinical can be divided into three categories: high, medium and low, and the most commonly used is low level laser therapy (LLLT). In this article, we aimed to review the mechanism of LLLT and its application in basic and clinical medicine.

**Method** We reviewed 235 articles associated with LLLT from 2006 to 2018.

**Results** The molecular mechanism of LLLT in cells is usually considered to be "light biological regulation" or "light biological stimulation". By accelerating the synthesis of DNA and RNA to promote cell proliferation, the specific principles include the molecular biological effects of improving cell degenerative signal, regulating kinase activity, regulating cell cation concentration and so on. LLLT is widely used in regenerative medicine (healing of trauma and ulcers), cosmetic medicine (preventing scar), Dentistry (accelerated healing), physical therapy (alleviating chronic pain), orthopedic (bone healing), heart disease (preventing restenosis after percutaneous coronary intervention), muscle regeneration, androgenic alopecia and various skin diseases.

**Conclusions** With the development of laser technology and the reduction of treatment cost, LLLT will become an excellent adjuvant therapy for chronic diseases. In order to verify the therapeutic effect of this treatment, many clinical studies are needed to explore the mechanism and the range of adaptation, and the appropriate treatment parameters should be identified for some special diseases.

PB07-003

### Pathogenesis analysis of rosacea and other facial dermatitis in clinical practice

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**Background** Rosacea is a chronic inflammatory disease that is based on a certain genetic background, induced by multiple factors, and occurs in the central part of the face. It is mainly characterized by persistent erythema and telangiectasia. The basic types include erythematotelangiectatic, papulopustular, phymatous, and ocular. The importance of classification is to select different treatments. In recent years, there are common cases that require differential diagnosis in clinical practice. The purpose of this study was to analyze the causes of rosacea and other skin problems, and to summarize the differential diagnosis and treatment experience of skin symptoms and signs caused by different causes.

**Methods** More than 80 cases of facial patients recently diagnosed by specialist clinic. The patients with facial sunscreen, topical medication history (glucocorticoids and calcineurin inhibitors), efficacy of skin care products and

cosmetics use history, photoacoustic therapy *etc.* microscopic examination of Demodex mites, fungal examination, dermoscopy, skin barrier and skin sensitivity assessment, patch test for patients suspected of having contact with allergic dermatitis, and Food and environment-related allergy patients were tested for total IgE and allergens were directed against affected patients.

**Results** Overall, more than 95% of patients with skin lesions were 18 to 45 years of age, with mild to moderate redness, scaling, burning or hot, itching, or tingling, symmetrically distributed cheeks (instead of face). More than two-thirds of the patients with excessive cleanser, one-third had a history of photoacoustic and electro-acosmetic treatment, and one-eighth used glucocorticoids and or calcineurin inhibitors. About 1/2 were not indicated at “carefully selected” brand of skin care or cosmetics; about 1/5 manifested as relatively severe rosacea; manifestations of skin barrier impaired syndrome or rosacea-like eruptions are detected easily at positive result of microscopic examination of Demodex mites; Intermittent replacement new skin care products is also easy, Fair skin color and thin people are more prone to impaired skin barrier syndrome and dark skin color prone to post-inflammatory hyperpigmentation.

**Conclusions** Patients with complaints of red, hot or tingling in clinical practice need to elaborate fo morer detailed medical history, careful differential diagnosis, and pay attention to “attributive dermatitis, impaired skin barrier, rosacea-like eruption, and rosacea”. Individualized treatment is given according to the correct clinical consultation and guidance.

PB07-004

### **A prospective study of the safety and efficacy of a microneedle fractional radiofrequency system for global facial photoaging in Chinese**

Qiu-Ju Wu, Meng-Li Zhang, Tong Lin, Jing Fang

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**Background** This study evaluated the efficacy and safety of a microneedle fractional radiofrequency system (MFRS) in the treatment of facial photoaged skin in Chinese patients.

**Methods** Twenty-seven patients with moderate facial photoaging were recruited and received three treatments at 4-week intervals. Blinded clinical assessment was performed by two independent dermatologists on a 5-point global photoaging scale (GPS). Patients were also questioned on the extent of improvement of rhytides, skin tightening and complexion with a 4-point global aesthetic improvement scale (GAIS) and satisfaction based on a 5-point scale. Adverse events and pain scores were also evaluated.

**Results** Compared to the baseline, there was a significant improvement in facial photoaged skin after three treatments, and these positive outcomes were maintained up to the 6-month follow-up, according to the GPS and GAIS scores. The majority of patients were satisfied with the treatment and reported mild to moderate pain and adverse effects.

**Conclusion** This MFRS is effective for facial skin rejuvenation in Chinese patients. The therapy also appears safe and well-tolerated.

PB07-005

### **Recurrence of nevus of ota after Q-switched laser treatment: case report and literature review**

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**Background** Nevus of Ota is a dermal melanocytic nevus. Q-switched laser is good option of treatment of Nevus of Ota. The recurrence rate is rare and causes are not clear.

**Methods** Reviewed the literature regarding the features of recurrent nevus of Ota and analyzed the possible causes. Described two cases of recurrent nevus of Ota after laser treatment and reviewed of their features along with other

cases of recurrent nevus of Ota which have been reported in the literatures.

**Results** Total 23 cases were analyzed, and female to male ratio is 3. 6:1. During time from the last treatment of primary lesion to recurrence were 13 months to 84 months. Sites of recurrent lesions beyond primary lesions were found in nine cases. Recurrence rate correlated with different types of laser treatments. There were significant difference between the Q-switched Alexandrite laser (QSAL) treatment group and Q-switched neodymium-doped yttrium aluminum garnet (QSNY) treatment group ( $P=0.007$ ) and mix treatment group (QSAL+QSNY) ( $P<0.0001$ ). Also, significant difference were found between the QSNY treatment group and mix treatment group ( $P=0.025$ ). No difference was found between the QSAL and QSRL treatment group.

**Conclusion** Sex hormone changes and insufficient removal of melanocytes tend to develop recurrence of nevus of Ota, and QSRL and QSAL treatment have lower recurrence rate.

PB07-006

### **Effectiveness and tolerability of a facial serum containing Vitamin C/E and ferulic acid on photo-aging**

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**Background** The aim of the study was to evaluate the effectiveness and tolerability of a facial serum containing Vitamin C/E and ferulic acid on photo-aging.

**Methods** Twenty-seven Chinese subjects with facial photo-aging signs were enrolled in the study. Their faces were treated with a facial serum containing antioxidant complex once in the morning for 12 weeks. Bio-instruments were used to assess skin color, overall facial appearance, dermis density pre- and after-treatment. Subjective scoring was conducted by blinded dermatologists and signs of skin irritation parameters were evaluated by the subjects.

**Results** After continuous application for 12 weeks, the L value on the 1 cm away from outer canthus and the highest point of cheekbone significantly increased, although "a" "b" value remained constant. The facial spots, wrinkles, and pore sizes measured by VISIA obviously improved and the dermis density measured by Ultrascan significantly increased. Subjective scoring assessed by the investigators indicated the products could reduce the wrinkles, improve the elasticity, lessen the roughness and improve the overall facial appearance to some extent. Only one subject complained of slight and temporary tingling and burning.

**Conclusion** The facial serum containing vitamin C/E and ferulic acid has potential effectiveness and well tolerability on photo-aging signs.

PB07-007

### **A cases of large area symmetry Ito nevus**

Xian-Qi zhang

Second Affiliated Hospital Zhejiang University School of Medicine

A 21-year-old woman presented with pigmented spots on bilateral upper limbs, dorsal arms and waist and buttocks for 21 years. After birth, she was found brown spots and patches on bilateral upper limbs and waist and buttocks, and there was no abnormal expression in development. As the age increased, the area of skin lesions gradually increased to the bilateral upper limbs, the dorsum of the hands, the waist and buttocks, and the color became deeper but there was no abnormal sensation. Family members had no similar history, parental health and non consanguineous marriage. Physical examination: no abnormal examination of the system, Dermatology: bilateral upper limbs, dorsal arms, back, waist and buttocks shown large blue brown color spots, the boundary is basically clear, pressure does not fade, cheek shown light brown class, no unsuitable feeling. Diagnosis: Ito nevus. Q switch Nd:YAG was used to treat the skin lesions of bilateral upper limbs, after routine skin disinfection, treatment wavelength 1064 nm, light spot 2–4 mm, energy density 5 J/cm<sup>2</sup>, pulse frequency 10 Hz, once 3–6 months, after 4–5 times of treatment, successfully

cured bilateral upper limb and dorsal skin lesions.

## *PB08 Dermatitis and Skin Allergy*

PB08-001

### **Comparisons of positive and negative autologous serum skin test responses as related to clinical features of chronic urticaria in Asian patients: A systematic review and meta-analysis**

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There are conflicting reports on the correlation between positive autologous serum skin test (ASST) responses and the clinical features in patients with chronic urticaria (CU). To evaluate the significance of ASST responses in CU. All available Databases were searched to identify relevant CU studies from inception to March 2018. Data were analyzed with Cochrane Collaboration's Review Manager 5. 2. The multiple relevant factors of CU were evaluated by weighted mean difference (WMD), standard mean difference (SMD), odds ratio (OR) and 95% confidence interval (CI). A total of 2554 records of CU patients from 16 publications were included in the systematic review and meta-analysis. The results indicated that CU cases with positive ASST responses showed higher urticaria activity scores (UAS) and higher levels of total serum IgE than CU cases with negative responses to ASST. ASST positive cases were more likely to be accompanied with positive thyroid autoantibodies and angioedema. An increased predominance of CU was found in females, who were more likely to show positive responses to ASST. We also show that a greater incidence of positive ASST responses were present in CU patients as compared with healthy controls. No statistically significant differences were obtained between positive and negative ASST responses with regard to age and duration of disease. But above all, ASST provides an effective means for predicting urticaria activity and incidence in CU patients.

PB08-002

### **Research progress of *Staphylococcus epidermidis***

Yining Wang

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*Staphylococcus epidermidis* is one of the most abundant colonizers making up the normal commensal flora of human skin and mucous membranes. As the most important member of the coagulase-negative staphylococci, it colonizes every human being, most frequently on the axillae, head, and nares. In contrast to *Staphylococcus aureus*. While for a long time regarded as innocuous, *S. epidermidis* is now also being recognized as an important opportunistic pathogen that can cause significant problems when breaching the epithelial barrier, especially during biofilm-associated infection of indwelling medical devices. *S. epidermidis* can facilitate the establishment of infection, persistence of the organism in the human body and the protection from the innate immune system through the biofilms, PGA, toxins and the exoenzymes as "virulence factors". But, it will become clear that most of these factors also have important roles in the commensal life of *S. epidermidis* as an innocuous inhabitant of the human skin. Infections caused by *S. epidermidis* are often indolent, and due to the investigation of the virulence factors, bacteria-host interaction, and the presence of specific factors enabling *S. epidermidis* to survive on the skin, the colonizing mechanism of *S. epidermidis* will be deeper understood.

PB08-003

**Drug rash with eosinophilia and systemic symptoms associated fulminant myocarditis**

Zhenzhen Ye, Pei-Qiu Zhu, Xue-Yan Lu, Zhi-Qiang Xie, Chun-Lei Zhang

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**Purpose** We report a case of late-occurred drug rash with eosinophilia and systemic symptoms (DRESS) associated fulminant myocarditis .

**Methods and Results** A 61-year-old woman was hospitalized for diffused eruption with pruritus of 3 weeks, she was diagnosed with DRESS following a presentation of facial edema, fevers, axillary and inguinal lymphadenopathy, hepatitis, and leukocytosis( $25.01 \times 10^9/L$ ) with 29.5% eosinophilia ( $7.39 \times 10^9/L$ ), lymphocytes above normal limits according to European Registry of Severe Cutaneous Adverse Reaction (RegiSCAR). These clinical signs appeared after 2-week oral form ceradroxil and analgin for once cause of post-operation of right ocular trauma. She had got a normal level of transaminase and peripheral eosinophils, the rash and pruritus were visibly improving after 2 weeks of systemic corticosteroids, antianaphylaxis , liver protective and symptomatic supportive treatment, at the same time, she presented with dizzy and fatigue, hypotension, elevated levels of serum markers of myocardial damage, ST-T segment transformation on ECG, pericardial effusion and poor left ventricular performance. She was diagnosed with cardiac shock and drug induced myocarditis, extracorporeal membrane oxygenation (ECMO) support was placed on her because of reciprocating ventricular tachycardia and drop of blood pressure, tracheal intubation and mechanical ventilation was commenced. Meanwhile, she was treated with systemic corticosteroid pulse therapy, intravenous immunoglobulin, plasma exchanges, nutritional myocardium and other symptomatic support therapy. The patient died after eight days.

**Conclusion** DRESS-associated fulminant myocarditis is an urgent, rapid-developing critical disease with a high mortality, that may occur as a late sequelae after the rash and itching disappears and the level of peripheral eosinophils becomes normal.

PB08-004

**Role of microRNA-152 in the regulation of KLF5 in B cells and in the pathogenesis of systemic lupus erythematosus**

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**Objective** This study aimed to confirm the regulatory relationship of microRNA-152-KLF5-BAFF/BAFF-R and provide a new and effective biological target in SLE treatment.

**Methods** To determine the expression of hsa-miR-152, KLF5 and BAFF/BAFF-R in B cells of SLE patients and healthy controls by quantitative real-time PCR and western blot. Verification of the regulatory relationship between hsa-miR-152-KLF5 and KLF5-BAFF/BAFF-R by dual luciferase reporter gene assay system and ChIP-PCR. Detection of the changes of B activation index CD80, CD86, CD40 and BAFF-R by flow cytometry after inhibiting the expression of hsa-miR-152 in B cells of SLE patients.

**Results** The expression of microRNA-152 and BAFF/BAFF-R were increased, and the KLF5 expression was decreased in B cells of SLE patients compared to B cells of healthy controls. KLF5 is a target gene of microRNA-152, and BAFF/BAFF-R were the target gene of KLF5. In SLE B cells, inhibition of the expression of microRNA-152 can significantly increase the expression of KLF5, thereby reduce the expression of BAFF/BAFF-R and repress the activation of B cells.

**Conclusion** The hsa-miR-152-KLF5-BAFF/BAFF-R regulatory axis plays an important role in regulating the activation of B cells, and its abnormal expression in B cells plays an important role in the pathogenesis of SLE.

PB08-005

**Drug reaction with eosinophilia and systemic symptoms: Clinical features of 16 patients**

Yanjiao Ju, Zhi-Qiang Xie

*The Third Hospital of Beijing University*

**Objective** To evaluate the causative drugs, clinical features and response to therapy of hospitalized patients with DRESS.

**Methods** We conducted a retrospective review of hospitalized patients who were diagnosed with DRESS according to RegiSCAR criteria during a period of 5 years (2012. 01 – 2017. 01). Culprit drugs, clinical characteristics, organ failures, treatment, and outcomes of patients were analysed.

**Results** Sixteen patients were included in this study, among which 15 patients were definite cases, and 1 was a probable case according to RegiSCAR score system. Of all patients, 7 (43.8%) were male, 9 (56.3%) were female, and the patients had a median age of 53 years. The drugs most commonly implicated were Chinese herbal medicine (37.8%), carbamazepine (18.8%), allopurinol (12.5%), and cephalosporin (12.5%). Organs involved included the liver (56.3%), kidney (18.8%) and lungs (12.5%). Systemic corticosteroids were given to 12 patients (75.0%), and 2 patients received cyclosporine when systemic corticosteroids did not work. All patients showed good clinical outcomes, except for one who was transferred to another hospital. None of the patients died.

**Conclusion** Drugs associated with HSS/DRESS were variable and attention should be given to many new causative drugs, especially Chinese herbal medicine. It is important to distinguish DRESS from SJS/TEN and HES. Cyclosporine might be a suitable choice when glucocorticoid therapy is contraindicated or not ideal for controlling the disease.

PB08-006

**Down-regulated SHARPIN may accelerate the development of atopic dermatitis through activating Interleukin-33/ST2 signaling**

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**Background** SHARPIN is an important component of the linear ubiquitin chain assembly complex (LUBAC). Loss of function of SHARPIN results in eosinophilic inflammation in multiple organs including skin with Th2-dominant cytokines and dysregulated development of lymphoid tissues in mice. The clinicopathological features are similar to atopic dermatitis (AD) in humans. This study was aimed to investigate the potential role of SHARPIN in the pathogenesis of AD.

**Methods** Genetic association study of the genotypes and haplotypes as well as SHARPIN's expression between AD cases and controls was performed. Lentivirus vectors were transfected into HaCat cells to decrease the expression of SHARPIN. Western blot and qRT-PCR were performed to evaluate the influence of inhibition of SHARPIN expression on the activation of Interleukin-33/ST2 and NF- $\kappa$ B signaling pathways.

**Results** We found 3 mutations (g. 480G>A, g. 4576A>G and g. 5070C>T) in patient group, and significantly decreased expression in AD lesions, suggesting a primary role of SHARPIN during AD development. Lentivirus-mediated in vitro assays identified that knockdown of SHARPIN can induce elevated expression of IL-33 and its orphan receptor ST2, FLG and STAT3, and NF- $\kappa$ B inactivation in HaCaT keratinocytes, which has been widely evidenced in regulating AD development. ST2 expression was highly induced in SHARPIN-silenced HaCaT keratinocytes after the combined stimulation of IL-4 and IL-13.

**Conclusions** Our in vivo and in vitro findings implicated that SHARPIN may be a novel participant in the pathogenesis and/or new therapeutic target of AD.

## PB09 Fungal Infection

PB09-001

### Effects of *Candida albicans* $\beta$ -(1, 3)-glucan on cell cycle, apoptosis, and inflammatory response in DC2. 4 cell line and related signaling pathways

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**Background** *Candida albicans* is an opportunistic microorganism. Yet the fungi-host interaction has not been well understood, especially the role of cell wall polysaccharides in fungal infection process. Dendritic cell (DC) is the bridge connecting innate and adaptive immune responses. The mechanism of dendritic cell activation is essential to understand the downstream interactions in anti-fungal immune reaction.

**Methods**  $\beta$ -(1, 3)-glucan was applied to DC2. 4 cells. Cell cycle and apoptosis were measured by flow cytometry. qPCR and Western blotting were performed to detect the expression of inflammatory cytokines such as IL-2, IL-6 and IL-8. MAPK/ERK and NF- $\kappa$ B/mTOR signaling pathways were monitored and the roles of these pathways in cell cycle/apoptosis and cytokine production respectively, were determined by using pathway inhibitors.

**Results**  $\beta$ -(1, 3)-glucan induced G1 to S phase transition and inhibited apoptosis in DC2. 4 cells, and MAPK/ERK signaling pathway was involved in the regulation of cell cycle. Transcription and translation profiles demonstrated that  $\beta$ -(1, 3)-glucan upregulated the production of IL-2, IL-6, and IL-8, which was mediated by both NF- $\kappa$ B and mTOR signaling pathways.

**Conclusions** MAPK/ERK signaling pathway was involved in the cell cycle regulation of  $\beta$ -(1, 3)-glucan in dendritic cells and the pro-inflammatory response may be mediated by both NF- $\kappa$ B and mTOR signaling pathways.

PB09-002

### HSP90 C-terminal domain function study of *Candida albicans*

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This study aims to express and purify *Candida albicans* HSP90 (*CaHSP90*) and compare the different effects of C-terminal domain on their chemical modification, modification target number, modification strength and ATPase *in vitro*. The encoding sequences for wild-type *CaHSP90* C-terminal enzyme were amplified *via* PCR. The products were cloned into the pET-22b+ vector using NdeI/XhoI cloning sites. The recombinant plasmids were expressed in *E. coli* BL21 (DE3) cells. His-tagged proteins were purified through the Ni<sup>2+</sup>-NTA column. *CaHSP90*, *CaHSP90* (1-673), and *CaHSP90* (1-655) were analyzed by capillary electrophoresis. ATP fluorescence was detected every 10 minutes for four times, and the slopes of each protein were counted using computer software. Finally, the data were analyzed by ANOVA. Capillary electrophoresis effects revealed that *CaHSP90* (1-673) mutation can decrease the chemical modification numbers (PI<7), while *CaHSP90* (1-655) can decrease the intensity of chemical modification targets. ATP fluorescence detection results revealed that differences in the ATP slope of *CaHSP90* (1-673) and *CaHSP90* were not statistically significant, but differences in the ATP slope of *CaHSP90* (1-655) and *CaHSP90* were statistically significant. These results suggest that *CaHSP90* (1-655) can digest ATP faster than *CaHSP90*. Hence, the change of the C-terminal domain of *CaHSP90* is significantly important to *CaHSP90*.

PB09-003

**Report of 2 cases of deep cutaneous candidiasis and literature review**

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Report of 2 cases of deep cutaneous candidiasis. The patient is a man and a woman, who had a medical history of diabetes mellitus, with a similar skin lesion, including erythema infiltration, abscess and ulcer on the left side of the femoral skin. The skin lesions of second case also spread to the left lower abdomen and flank, With multiple ulcer secretions mycology and histopathologic examination of skin deep candidiasis. The first case pathogenic bacteria of male patient is *Candida parapsilosis*, after fluconazole dripping, surgical debridement, oral itraconazole, extended resection, recovery. The second case pathogenic bacteria of female patient is *Candida albicans*, the female also has a medical history of Cirrhosis. By fluconazole, micafungin and caspofungin treatment effectively, but the prognosis is poor.

PB09-004

**Ste20 is crucial for dimorphic switching of *Sporothrix schenckii***

Bin-Bin Hou

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*Sporothrix schenckii* (*S. schenckii*) induced sporotrichosis has gained importance in recent years due to its worldwide prevalence. The dimorphic switching process is obligatory for the pathogenicity of *S. schenckii*. Previously, we found a p21 activated kinase, SsSte20, was overexpressed in the early yeast stage but not the mycelia stage of *S. schenckii*, which suggested its involvement in morphogenesis of this fungal pathogen. However, whether SsSte20 can respond to environmental changing and affect the dimorphic switching of *S. schenckii* remain unclear. In this study, the function of SsSte20 was investigated using double stranded RNA interference mediated by *Agrobacterium tumefaciens*. Its effects on asexual development, yeast-phase cell formation, and cell wall composition were evaluated. In addition, by transcriptome analysis of SsSte20-i mutant and the wild type *S. schenckii*, we further investigate the genes and pathways that affected by SsSte20. Our results showed that inactivation of SsSte20 significantly affected the growth and interior components of *S. schenckii* conidia and impaired the dimorphic switching process. The RNA transcriptome analysis of the wild type *S. schenckii* and SsSte20-i mutant revealed that SsSte20 mainly regulates the genes associated with biological process, cellular component, and molecular functions. It also affects the expression of ABC transporters that are involved in environmental information processing, and genes related to sphingolipid metabolism. Overall, our research supports that SsSte20 plays important role in sensing environmental information and regulating the sphingolipid biosynthesis of *S. schenckii*, which are crucial for dimorphic switching.

PB09-005

**Herpes zoster-like lesions in a patient with sporotrichosis**Fuqiu Li<sup>1</sup>, Sha Lv<sup>1</sup>, Lin Qi<sup>1</sup>, Han-Fei Wu<sup>2</sup>1. *The Second Hospital of Jilin University*2. *The first clinical hospital of Academy of Science of TCM in Jilin Province*

**Background** Sporotrichosis is a subacute or chronic mycosis acquired by traumatic inoculation or inhalation of fungal conidia. Sporotrichosis is characterized by multiple manifestations, including papules, pustules, inflammatory nodules, plaques, ulcers, granulomas, scab and so on. It usually occurs on the exposed parts of the body, like as face, upper limbs, neck, hands and feet.

**Case report** We report a 37-year-old female who was presented to our clinic with half a year history, with papules and nodules in the right back with banded distribution which is similar to herpes zoster, a viral disease involving skin and nerves. The patient found the scattered and red papule in the right back half a year ago, part of the lesions fused. She was diagnosed as "herpes zoster" in the local clinic, and given the external use of "Chinese herbal medicine" for several days. In the course of treatment, partial skin lesions appeared to break and scab. After that, there were multiple red papules and nodules on the right side of the back. The patient has a history of systemic lupus erythematosus and lupus nephritis for 3 years, a long-term oral glucocorticoid treatment. After a series of examinations, the patient was diagnosed as sporotrichosis.

**Conclusions** We gave her the treatment of itraconazole 0.2 g/d orally, then the combined treatment with terbinafine 0.25 g/d orally after one month because of the poor effectment. Now the patient has been treated for 4 months and are still being followed up, the skin lesions are obviously improved.

PB09-006

### Clinical analysis of 180 cases of children sporotrichosis

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**Objective** Sporotrichosis is a subacute or chronic mycosis acquired by traumatic inoculation or inhalation of fungal conidia. It is prevalent all over the world. Jilin Province in northeast China is one of the world's high incidence regions. The disease mainly involves young and middle-aged people (related to their main labor force), and can also involve children. The aim of this research is presenting the features of children sporotrichosis in recent years.

**Methods** The clinical data of 180 children (less than 14 years old) diagnosed as sporotrichosis were analyzed retrospectively from February 2012 to October 2017.

**Results** In 180 cases, the minimum age of the patients was 50 days, and the average age was 4.76 years old. The ratio of the male and female was 1 to 0.78. The average course of the disease was 3.33 month. The onset of most cases occurred in the spring, then in the summer and the winter. The face was the main involvement of sporotrichosis, accounting for 93.9% of the total number of patients. The cases of fixed sporotrichosis were 145, accounting for 80.6%. The cure rates after 3-6 months of treatment with terbinafine and itraconazole was 100%.

**Conclusion** Children sporotrichosis cases were not rare in recent years. The face was the main involved location and the fixed cutaneous type was predominant among the patients. The treatment of itraconazole and terbinafine were equally effective and safe.

PB09-007

### Population structure and genetic diversity of *Sporothrix globosa* in China according to 10 novel microsatellite loci

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*Sporothrix globosa* is the most important agent of sporotrichosis in China. However, little is known regarding the population parameters of *S. globosa* due to a lack of molecular markers with high discriminatory power. In the present study, we developed a set of microsatellite markers that have a cumulative discriminatory power of 1.000. Using these microsatellite loci, 120 strains of *S. globosa* that had clear clinical information were analyzed. Population structure analyses revealed that *S. globosa* can be separated into three clusters. Analysis of molecular variance (AMOVA) results indicated that genetic variation was more significant among these three clusters than between the

two clinical types analyzed. In addition, cluster II might have the widest range of distribution and contained higher genetic diversity than the other clusters. Our work is the first to develop a suite of highly discriminatory microsatellite markers and reveal the population parameters of *S. globosa*, and our results suggest that different lineages can coexist in two different clinical types. In addition, it was hypothesized that lineages with higher genetic diversity might have a wider distribution range.

PB09-008

### **A case of chronic mucocutaneous candidiasis with azole resistance**

Fuqiu Li, Ming-Rui Zhang, Yang Li

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A 15-year-old boy was admitted to the Dermatology Department of The Second Hospital of Jilin University in Changchun, Jilin, China. There are obvious white membrane on his oral mucous and tongue, and the tongue is cracked with pain. Erythema and papules are scattered on his face. He had a history of recurrent thrush since three months after born. No corneal lesions or inflammation in the eye were observed. In addition, there was no familial history of genetic abnormalities or immunodeficiency. Blood sample was collected and some biochemical and immunological parameters were measured. Direct microscopic examination of mucosal samples revealed the presence of yeast cells along with pseudohyphae, resembling *Candida* spp. infections. Typical white creamy yeast colonies were grown on SDA. *Candida albicans* was identified as the causative agent by sequencing of ITS region. CD4/CD8 lymphocytes ratio was a little bit low and other tests were normal. After fully communicating with the patient and his parents, 2 ml of peripheral blood was collected and the patient's genomic DNA was extracted. All exons of STAT1 were amplified and sequenced. It was found that there was a heterozygous mutation at exon 14. Anti-fungal drugs susceptibility test showed that the MIC of anidulafungin, micafungin, caspofungin, 5-flucytosine, posaconazole, voriconazole, itraconazole, fluconazole, and amphotericin B were 0.125 µg/mL, 0.06 µg/mL, 0.25 µg/mL, 0.125 µg/mL, >8 µg/mL, >8 µg/mL, >16 µg/mL, and >256 µg/mL, 1 µg/mL, respectively. Combining clinical manifestations and laboratory tests, we confirmed the diagnosis of the patient was Chronic Mucocutaneous Candidiasis with resistant to azole antifungal drugs. However, considering the economic status of the patient's family, patient was treated with itraconazole 200 mg bid PO. Obvious recurrence was observed only after 1 week. The patient is still under treatment now.

PB09-009

### **A case report: repeatedly misdiagnosed HIV/AIDS combined with *Talaromyces Marneffei***

Yuye Li

*The First Affiliated Hospital of Kunming Medical University*

Patient: Female, 38-year-old, Left thigh ulcer with pain for 7 months. 7 months ago, she found a subcutaneous nodules that has a mung bean size, and she had been admitted with "1, spore mycosis? 2, gangrenous pyoderma?". The left upper leg extension side skin is seen with an approximately 7.5 cm x 6.5 cm size ulcer.

## PB10 Genetic Disorders

PB10-001

### Premature aging syndrome, Penttinen type: Report of a Chinese case

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**Background** Premature aging syndrome, Penttinen type (Penttinen syndrome) is a rare disorder characterized by prematurely aged appearance. Totally, 5 cases have been reported.

**Methods** We enrolled 1 Chinese case of Penttinen syndrome. Exome sequencing was performed.

**Results** The patient presented with characteristic presentations of Penttinen syndrome. Cranial CT and MRI scan showed open anterior fontanel, posterior fontanel and sagittal suture, hydrocephalus, cerebellar atrophy, and leukoencephalopathy which did not match his age. Echocardiography showed left ventricular diastolic dysfunction. Exome sequencing identified a *PDGFRB* c. 1994T>C, p. Val665Ala variant in the patient and Sanger sequencing confirmed this variant as a *de novo* mutation.

**Conclusions** We confirmed *PDGFRB* c. 1994T>C, p. Val665Ala variant as the causative mutation of Penttinen syndrome.

PB10-002

### Detection of ADAR1 gene mutation in a Chinese Han family with dyschromatosis symmetrica hereditaria

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**Objective** To detect mutation of ADAR1 gene in a Chinese Han family affected with dyschromatosis symmetrica hereditaria (DSH).

**Methods** Clinical data and blood samples of the family were collected. DNA was extracted from the blood samples of two patients with DSH and two unaffected members in the family as well as 100 unrelated healthy controls. PCR and direct sequencing were performed to detect mutations in the ADAR1 gene.

**Results** A missense mutation of c. 3232C >T, which results in p. R1078C in the ADAR1 protein, which found in the two patients, but was absent in the two unaffected members in the family and 100 unrelated healthy controls.

**Conclusion** A missense mutation of c. 3232C >T in the ADAR1 gene may result in the disease of DSH in this family.

PB10-003

### Ten cases of Darier's disease in one family

Shi Gong

Hainan Provincial Hospital of Skin Disease

Here we report a familial cases with Darier's disease. The proband, a 23 year-old women was presented with pruritic brown papules on her face, back of era canthus and neck region for 20 years. After 4 generations including 27 Members were investigated, the result showed that 10 members were affected in this pedigree. Histopathology of the skin lesion revealed suprabasal cleft and acantholysis.

PB10-004

**Microbiological characteristics and identification of prototheca**

Jin Yang

*Huashan Hospital of Fudan University*

Prototheca is a unicellular organism with the cellular diameter about 3-30  $\mu\text{m}$ . The reproduction is asexual and it contains characteristic endospores. Protothecosis is a rare and sporadic disease, and only prototheca wickerhamii, prototheca zopfii, prototheca blaschkeae and prototheca cutis have pathogenicity to human. The traditional methods to identify prototheca include direct microscopic examination, culture of the fungi and histopathology. Recent years, molecular biology techniques have become fundamental with the ability to characterize the isolates into the subspecies or varieties. To increase the recognition of this opportunistic fungi, here we review briefly the taxonomy, epidemiology, structural features, in vitro susceptibility and identification of prototheca.

PB10-005

**Neurofibromatosis type 1 associated with vitiligo: case report**

Lixia Cui, Ge Peng, Zhen-Zhen Mu, Xiu-Ping Han

*Shengjing Hospital of China Medical University*

We report a patient with neurofibromatosis 1 and vitiligo. Neurofibromatosis 1 is characterized by neurofibromas, cafe-au-lait spots, axillary and inguinal freckles, peripheral and central nervous system tumors, bony dysplasia and learning disabilities. To our knowledge, neurofibromatosis 1 and vitiligo with apparently family history has not been reported earlier. This association may suggest us to further consider whether there are some genetic association between them.

PB10-006

**Diffuse palmoplantar keratoderma with pseudoainhum**

Yuanyuan Xu, Guang Yin, Ding, Cheng-Xin Li, Hua Zhao

*Department of Dermatology, General Hospital of People's Liberation Army*

Diffuse palmoplantar keratoderma is an autosomal dominant disorder in which hyperkeratosis is confined to the palms and soles. Some patients may incorporate ichthyosis or other congenital abnormalities, such as pseudoainhum, finger or toe osteolytic, and genetic pigment abnormalities. Here, we report a rare case of a 43-year-old female Chinese patient who presented to our outpatient clinic with hyperkeratosis of both palms and soles and ainhum-like digital constrictions over the fingers. A histopathologic examination of palm revealed epidermal hyperkeratosis and irregular hyperplasia with dermal vascular dilatation and lymphocytes infiltration. Radiographs showed that the soft tissue of some terminal phalangeal joints were atrophied and constricted, but the bone was not obviously destroyed. The clinical features and examinations were consistent with a diagnosis of diffuse palmoplantar keratoderma with pseudoainhum. The patient was treated with beta-carotene once a day and flumison ointment, urea cream and benzoic acid liniment twice daily. To the best of our knowledge, this is the third reported case of similar report in China, and the fifth analogously reported case worldwide.

PB10-007

**A novel mutation in MBTPS2 causes ichthyosis follicularis, alopecia and photophobia (IFAP) syndrome**

Yanyun Jiang, Qiannan Jia, Kai Fang, Hong-Zhong Jin, Yue-Ping Zeng

*Department of Dermatology Peking Union Medical College Hospital Chinese Academy of Medical Sciences and Peking Union Medical College*

A case of ichthyosis follicularis atrichia and photophobia (IFAP) syndrome is reported. A 11-year-old boy presented with a 11-year history of diffuse follicular hyperkeratosis with alopecia and 10 years of photophobia. Physical examination revealed complete absence of scalp hair and eyebrows and ichthyosiform scaling on the extensor limbs. Spiny hyperkeratotic follicular papules were presented on the trunk and extremities. A novel mutation in MBTPS2 (c. 1298T>C) was detected. The diagnosis of ichthyosis follicularis atrichia and photophobia was made according to the clinical manifestations and MBTPS2 mutation. Differential diagnosis must be made with keratosis follicularis spinulosa decalvans, Dermotrichic syndrome, Hereditary mucoepithelial dysplasia, and keratosis-ichthyosus-deafness syndrome.

*PB11 Metabolic and Endocrine Disorders*

PB11-001

**A case of nodular primary cutaneous amyloidosis**

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A case of nodular primary cutaneous amyloidosis is reported. The patient was a 41-year-old man who presented with asymptomatic plaque and nodule under bilateral nostrils margins for 4 years. Histopathological examination showed mild liquefaction degeneration of basal cells, eosinophilic deposited in the superficial, deep dermis, subcutaneous collagen fibers and vascular wall. Crystal violet and Congo red staining were positive, PAS staining was weakly positive. Polarized light microscope showed apple green double refraction. The diagnosis of nodular primary cutaneous amyloidosis was made. The patient was treated successfully by excision and skin dermabrasion. There was no recurrence after half a year follow-up.

PB11-002

**A Case of Excessive Dog Liver intake-induced Vitamin A Intoxication**Qian Sun<sup>1</sup>, Nan Wu<sup>1</sup>, Cong Peng<sup>2</sup>, Xian-Ling Cong<sup>1</sup>*1. China-Japan Union Hospital of Jilin University**2. Children's Hospital of Dalian*

Vitamin A is a lipid-soluble vitamin that is essential for maintaining metabolism and health. Its functions include improving vision, promoting growth and forming skin. In addition, it has anticancer and immunity-enhancing effects. Vitamin A is mainly obtained from diet, but its clearance rate is slow. Therefore, excessive intake is likely to induce accumulation, which may result in intoxication in some severe cases. Herein, a patient with excessive one-time intake of dog liver is reported, who developed desquamation of skin, bulbar conjunctival hyperemia, headache, nausea and vomiting. The patient was a Korean female, symptoms of dizziness and conjunctival hyperemia occurred two days after excessive eating dog liver. The symptoms haven't improved after initial treatment in the local hospital then she came to dermatology in our hospital. We suspected that was vitamin A poisoning and confirmed by asking detailed medical history. We did not promptly detect the level of vitamin A but treated with intravenous vitamin C and calcium

gluconate. After treatment for one month, the skin desquamation and bulbar conjunctival hyperemia symptoms disappeared. A detailed enquiry about diet history and vitamin A status is crucial for diagnosis. This report highlights the difficulties in clinical diagnosis of vitamin A toxicity, especially atypical dermatological conditions, which should be noticed by clinicians.

## *PB13 Pigmentary Disorders*

PB13-001

### **A rare coexistence of cavernous hemangioma with Beckers nevus: Case report**

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2. *Affiliated Hospital of Guiyang Medical College*

Cavernous hemangiomas are benign hamartomatous that present as bright red compressible papules, nodules or papules. We reported a case of hemangiomas presented on the knee. She had history of tenderness, therefore, it is easy to be misdiagnosed as glomus tumors. The histological features of lesion were consistent with cavernous hemangiomas. However, we also found there was hyperkeratosis, slightly papillomatosis, elongation of the rete ridge, and slightly hyperpigmentation on the basal layer, it was also consistent with the histological feature of Beckers nevus. The clinical appearance and the histopathological evidence were compatible with the diagnosis of cutaneous cavernous angioma with accompanying associated with Beckers nevus. Several cutaneous diseases and structural anomalies are seen associated with Beckers nevus. However, the association of Beckers nevus with cutaneous cavernous hemangioma has not been reported to date. Herein, we report a case of cutaneous cavernous angioma coexisting with Beckers nevus in a 2-year-old female.

PB13-002

### **SEN1 regulates TH1 chemokines via IFN- $\gamma$ -STAT1 signaling in keratinocytes through STAT3-deSUMOylation**

Fuquan Lin, Ai-E Xu

*Hangzhou Third People's Hospital*

Vitiligo is an acquired skin disorder characterized by the loss of pigment cells from the epidermis. We found there were abundant SENP proteins couple with the abnormal chemokines in vitiligo lesions. SUMOylation is a reversible process that is catalyzed by the enzymes and reversed by a family of Sentrin/SUMO-specific proteases (SENPs). Interferon- $\gamma$  (IFN- $\gamma$ ) triggers keratinocytes for inflammation response by activating the intracellular JAK-STAT1 signaling. By analyzing the expression profiles of genes from SENP1<sup>-/-</sup> cells, we found the down-regulation of IFN target genes in SENP1<sup>-/-</sup> cell in comparison with SENP1<sup>+/+</sup>. Therefore, we propose that SENP1 plays an important role in IFN induced signal and chemokines activation. We found the down-regulation of IFN-induced genes in SENP1<sup>-/-</sup> or SENP1-silenced KCs, and the decrease in activation of Jak2 and Stat1. SENP1-deficient KCs show defects in IFN- $\gamma$  signaling and type 1 T helper cells Chemokines activation. Meanwhile, we also find that SENP1 expression is induced by IFN- $\gamma$ . PTP1B in SENP1-deficient KCs is highly SUMOylated, which reduces PTP1B-induced dephosphorylation of STAT3. Activated STAT3 then suppresses STAT1 activation via SOCS3 induction in SENP1-deficient keratinocytes. Accordingly, SENP1-deficient keratinocytes show reduced ability to resist UVB. These results reveal a crucial role of SENP1-controlled STAT1 and STAT3SUMOylation balance in keratinocyte function.

PB13-003

**A search of vitiligo patients in the northeast of China using a questionnaire**

Yan Wu, Zheng Lin, Xing-Hua Gao

*The First Hospital of China Medical University*

To assess the sociodemographic data and clinical information of outpatients affected by vitiligo in the northeast of China, vitiligo patients or guardians who presented to the clinic were invited to participate in an exploratory questionnaire. The questionnaire consisted of two sections related to vitiligo, including sociodemographic data and clinical information. A total of 983 vitiligo patients answered the questionnaire. The rates of female and male patients were comparable. The investigated patients were mostly young and middle-aged. Most patients suffered from vitiligo in childhood or young adulthood. Vitiligo vulgaris was the most common type of vitiligo in clinic and 53.0% of patients were categorized as body surface area (BSA) of 10% or less. In response to the latest treatment, 43.6% of patients achieved good response (completely stopped or almost disappeared). More patients at active stage showed good response than the patients at stable stage ( $\chi^2 = 7.866, P < 0.05$ ). Chronic comorbid condition(s) were observed in 12.6% of patients with BSA of more than 10%, whereas those were seen in 6.0% of patients with BSA of 10% or less ( $\chi^2 = 12.969, P < 0.05$ ). In conclusion, active vitiligo seems to respond better than stable vitiligo and complications with other autoimmune diseases more frequently observed in severe patients than mild patients. The current study presented a comprehensive understanding of vitiligo in the northeast of China.

PB13-004

**Clinical observation on the treatment of 90 cases of vitiligo with Qubai® double copper ion antibacterial gel**

Jialin Yang, Ya-Qin Zhang, Hong-Bo Jiang

*The Second Hospital of Jilin University*

**Objective** Vitiligo is a skin pigmentation caused by melanin synthesis disorder. In various studies based population show that the prevalence rate of vitiligo was 0.5% to 1% in the world. The incidence of vitiligo is rising under social life and learning pressure. There was two objectives in this articles, One was to observe the clinical efficacy of the treatment for vitiligo by Qubai copper ion® antibacterial gel and a rational drug scheme will be selected for the treatment of pigment synthesis disorder disease. The other was to observe the clinical efficacy of the treatment for vitiligo which caused by primary white spot with trauma and treatment by Qubai copper ion® antibacterial gel then a new therapeutic regimen can be used When in the afore-mentioned situation.

**Methods** All of the 90 vitiligo patients were collected since May 2016 in the department of dermatology of The Second Hospital of Jilin University, already remove pityriasis, blotch, naevus anemicus and other kinds of diseases that can make skin and mucous membranes depigmentation. We divided them into three groups equally. The combined group was given the treatment by Qubai copper and Compound Kaliziran tincture. The control group 1 was given the treatment by Compound Kaliziran tincture only and the control group 2 given the treatment by Qubai copper only (the control group 2 contain the patients that with primary white spot caused by use Compound Kaliziran tincture and ultraviolet light unreasonable). For the combined group use Qubai copper and Compound Kaliziran tincture once every day, for the Group 1 use Qubai copper twice each day, Group 2 use Compound Kaliziran tincture twice each day, Continuous treatment for 12 weeks. The curative effects of the three groups had been evaluated and the adverse reactions and safety indexes of the three groups were observed. Statistical analysis was conducted by SPSS 19.0.

**Results** 1, At 4 weeks, the effective rate of the control group 1 (31.52%) was lower than the combined group (37.57%) and there is no statistically significant difference between two groups ( $P = 0.242, P > 0.05$ ). And the effective rate of the control group 2 (24.14%) was lower than the combined group (37.57%) and there is statistically significant difference between two groups ( $P = 0.010, P < 0.05$ ). At 12 weeks, the effective rate of in the control group 1 (41.09%) was lower than the combined group (61.27%) and two groups was statistically significant difference ( $P = 0.024, P < 0.05$ ). The effective rate of the control group2 (40%) was lower than the combined group (61.27%) and

two groups was statistically significant difference ( $P = 0.000$ ,  $P < 0.05$ ). 2, The incidence of adverse reactions in the control group1 (14. 15%) was higher than the combined group (7. 14%), while the incidence of adverse reactions in the control group2 (0%) was lower than the combined group (7. 14%). 3, At 4 weeks, the rate of injury and repair was 100% in the control group 2. 4, Single application of Qubai copper there was no allergies.

**Conclusions** Using Qubai copper to treating vitiligo was safe, effective and stable, it has certain repair and antibacterial effects for primary leukoplakia with trauma.

PB13-005

### Study of Qubai ® double copper ion antibacterial gel on tyrosinase activity

Jia-Lin Yang, Ya-Qin Zhang, Hong-Bo Jiang, Ce Lin

*Second Hospital of Jilin University*

**Objective** The melanin synthesis disorder can cause vitiligo, albinism and other skin pigmented diseases. Tyrosinase is the key and rate limiting enzyme in melanin synthesis. Therefore, tyrosinase activity plays a vital role in the pathogenesis of skin pigmented diseases. Through observe the activation of Qnbai copper on the tyrosinase to further understand the therapeutic effect of vitiligo by Qnbai copper.

**Methods** The Qnbai copper group, the traditional Chinese medicine group 1, the traditional Chinese medicine group 2, The combined group of Qnbai copper and the traditional Chinese medicine group 1, the combined group of Qnbai copper and the traditional Chinese medicine group 2. Tyrosinase oxidize tyrosine into DOPA Quinone step by step , Tyrosinase activator can increase the rate of enzymatic reaction and increase the amount of DOPA quinone and the absorbance (OD value) at the maximum absorption peak of 475 nm can be measured by an ELISA instrument, and Compared OD value of the standard which was equal to the difference between "only enzyme" and "no enzyme without sample " and sample which was equal to the difference between "samples with enzyme " and "only sample " . Then we determined the effect of drugs on tyrosinase activation.

**Results** When copper ion concentration was 4 ml/ml, 6 ml/ml, 8 ml/ml and 10ml/ml and the corresponding sample OD values were 0.030, 0.038, 0.040, 0.056 respectively and standard OD values was 0.025. The sample OD value of the combined group of Qnbai copper and the traditional Chinese medicine group 1 and the traditional Chinese medicine group 1 were 0.0725, 0.0157 respectively, and standard OD value was 0.0048. The sample OD value of The sample OD value of the combined group of Qnbai copper and the traditional Chinese medicine group 2 and the traditional Chinese medicine group 2 were 0.0530, 0.0101 respectively, and standard OD value was 0.0048.

**Conclusions** The relationship between tyrosinase activation and the density of copper ion was positively correlated. Qnbai copper, the traditional Chinese medicine group 1 and the traditional Chinese medicine group 2 all have certain activation effective on tyrosinase, There was no significant difference among the 3 groups when using alone. Strength when using combine: The combined group of Qnbai copper and the traditional Chinese medicine group 1 > The combined group of Qnbai copper and the traditional Chinese medicine group 2 > The Qubai copper group. To using combined Qubai copper gel with group 1 or with group 2 were more effective than they were used respectively. Therefore, above products for treating vitiligo can be used alone or combination, but combination is better.

PB13-006

### Correlation between Nesfatin-1 in the cortical signaling pathway and cellular immune function in patients with vitiligo

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The pathogenesis of melanocyte dysfunction caused by the interaction of neuroimmune system in patients with vitiligo has attracted more and more attention. The latest study found that chronic stress can inhibit the expression of hormones in the HPA axis, reducing the production of melanocytes.  $\alpha$ -MSH, POMC, MC1 and MC4 reduce in vitiligo lesions or serums. Nesfatin-1 is a secreted protein with an unknown function which associated with the

hypothalamic melanocortin signaling pathway (MC3/4R, CRH, MCH, POMC). There is no study on the relationship between nesfatin-1 and the immune system of vitiligo. Under the influence of mental factors, IL-26 secreted by CD4+ T cells that overexpress after the dysfunction of Treg cells activates the STAT1 and STAT3 pathways by binding to co-receptors (IL-26R, IL-20R1/IL-10R2), thereby inhibiting the growth of melanocytes.

Given the above theoretical analysis, the purpose of this experiment is to investigate the expression level and correlation of nesfatin-1 and IL-26 in vitiligo patients with or without mental factors, to explore the interrelationship between the nervous system and immune system in patients with vitiligo.

**Methods** Anxiety status trait questionnaire was used to evaluate whether 120 patients with vitiligo in our hospital had abnormal mental factors and then they were divided into groups. Radioimmunoassay was used to detect serum levels of nesfatin-1 and IL-26. 60 health checkers were used as controls. The comparison was using the t-test to determine whether IL-26 and nesfatin-1 different in each group.

**Results** Serum levels of nesfatin-1 in the psychotic factor group were lower than those in the non-psychotic factor group ( $P < 0.05$ ), and serum levels of the non-psychotic factor group was smaller than those in the control group ( $P < 0.05$ ). Serum levels of IL-26 in the psychotic factor group were higher than those in the non-psychotic factor group and the control group ( $P < 0.01$ ).

**Discussion** Changes in nesfatin-1 in each group confirmed that neuropsychiatric factors elicited a decrease in nesfatin-1, and nesfatin-1 correlates negatively with IL-26 in the immune system. Nesfatin-1 not only explains the relationship between the nervous system and the immune system but also provides a basis for the development and treatment of drugs.

PB13-007

### **A case of phacomatosis pigmentovascularis type IIb associated with Cayler cardiofacial syndrome**

Ximeng Zhang, Ge Peng, Li-Xia Cui, Peng-Yue Liu, Xiu-Ping Han

*Shengjing Hospital of China Medical University*

We report a native Chinese female infant with phacomatosis pigmentovascularis (PPV) and cayler cardiofacial syndrome. PPV is a congenital syndrome characterized by the simultaneous occurrence of a pigmented nevus and a vascular nevus in an individual. To our knowledge, the association of PPV and cayler cardiofacial syndrome has not been reported previously. It suggests us to further consider whether it may represent a new systemic association with PPV.

### *PB14 Psoriasis*

PB14-001

### **A study for the bacterial resistance of imiquimod treated mice**

Hang Shi

*1st Hospital of Dalian Medical University*

**Objective** To examine the bacterial resistance of imiquimod treated mice.

**Methods** Balb/c mice were depilated in the back skin and pasted 5% imiquimod cream for 7 days to achieve psoriasis model. After modeling is completed, 10 imiquimod mice and 10 normal control mice were injected in the dorsal skin with Staphylococcus aureus liquid and group A hemolytic streptococcus liquid in the concentration of  $1 \times 10^8$  CFU/ml and  $1 \times 10^9$  CFU/ml, 0.04 ml each spot, the results were observed and analyzed. The skin abscess infected by streptococcus were removed and grinded to examine the bacterial load.

**Results**  $1 \times 10^8$  CFU/ml liquid of Staphylococcus aureus in normal mice resulted in small abscess 3-8 mm in diameter, in imiquimod mice, the skin were not changed;  $1 \times 10^9$  CFU/ml liquid of Staphylococcus aureus in normal mice resulted in huge abscess 10-13 mm in diameter, in imiquimod mice, the results were scabs about 2-5 mm in length;

$1 \times 10^8$  CFU/ml hemolytic streptococcus liquid caused a small red papule in every normal mouse, while the imiquimod group is unresponsive to it;  $1 \times 10^9$  CFU/ml streptococcus liquid caused small pus or scabs on normal mice skin, which resolved in 4–7 days, as for imiquimod mice, the focus bulged gradually. The Staphylococcus aureus load of imiquimod mice were less than normal mice statistically.

**Conclusions** 1. Imiquimod-treated mouse skin is significantly enhanced in resistance to acute infection of Staphylococcus aureus and Streptococcus hemolyticus. 2. Imiquimod treated mouse represents late onset inflammation to Streptococcus hemolyticus infection.

PB14-002

### Long noncoding RNA expression profile and function analysis in psoriasis

Jianjun Yan, Qing Sun

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**Objective** We sought to investigate the expression profile and function of long noncoding RNA in psoriasis.

**Methods** We performed microarray analysis to identify lncRNAs specifically expressed in psoriasis. Quantitative real time polymerase chain reaction (qRT-PCR) was used to validate 10 of the differentially expressed lncRNAs. Target genes of lncRNAs were predicted both in cis and in trans. GO analysis, pathway analysis and co-expression network analysis were performed to analyze the functions and interactions of dysregulated lncRNAs.

**Results** Our microarray results revealed 2194 lncRNAs and 1725 mRNAs significantly differentially expressed, including up-regulated and down-regulated ones. The results of qRT-PCR were almost similarly with those of the microarray data. GO analysis and pathway analysis among differentially expressed mRNAs were identified. Co-expression network analysis was performed to study molecular interactions. Our study provides a genome-wide screening and analysis of lncRNA expression profile in psoriasis. Ten differentially expressed lncRNAs were randomly selected and then validated using qRT-PCR. The expression levels of seven lncRNAs show the same trend with microarray, and among them three lncRNAs, lnc-AP000769.1-1:2, ENST00000557691, lnc-HSFY2-10:1 were up regulated; four lncRNAs, lnc-MGMT-2:1, lnc-POLR3E-3:3, lnc-THRSP-6:1 and lnc-PERP-2:7 were down regulated.

**Conclusions** To our knowledge, this is the first time using microarray to investigate the expression of lncRNAs in psoriasis. These findings demonstrate that lncRNAs have potential effects in the development and progression of psoriasis and show potential diagnostic and therapeutic value. Moreover, our findings suggested that the combined actions of several lncRNAs might be involved in the development and progression of psoriasis.

PB14-003

### Sensitivity reaction in the Infliximab treatment for psoriasis: two cases

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Infliximab is an anti-TNF- $\alpha$  biologic agent, widely used in rheumatoid arthritis and moderate to severe psoriasis in dermatology. It has the advantages of rapid response and good efficacy. Infliximab is also commonly used for the treatment of refractory psoriasis. The adverse reaction of Infliximab included infusion reactions: in clinical trials, within 2 hours after infusion and infusion, approximately 3% had non-specific symptoms such as fever or chills, less than 1% appeared itching or urticaria, and 1% had cardiopulmonary responses (mainly manifested as chest pain, hypotension, hypertension or dyspnea).

Case 1: A 45-year-old man had repeated erythema scales for 21 years. The erythema recurred in 21 years, and gradually involved the trunk, limbs, head and neck, without joint swelling and pain. The patient was diagnosed psoriasis vulgaris. The use of external drugs was ineffective. In October 2016, the patient began to receive intravenous injections of Infliximab by micro-pumps in our hospital for seven times. The rash was improved rapidly. However, in December 2017, when the patient was receiving the 8th micro-pump static infusion of approximately 30

ml, the patient experienced a transient chest tightness, erythema with itching and discomfort in the back of the neck and abdomen, and the chest tightness improved several minutes after the stop of Infliximab. Erythema subsided after chlorpheniramine 10mg i. m. Half an hour later patient continue the Infliximab 200mg with patient's strongly request. No significant discomfort occurred during infusion.

Case 2: A 26-year-old woman, repeated body erythema scales more than 10 years. 10 years ago, numbness needles-size erythema with scales appeared in chest, back and abdomen after "cold", accompanied by itching, and repeated attacks gradually flooded the whole body, without joint swelling and pain. Diagnosis was psoriasis vulgaris. Treatments of conventional external medicines and traditional Chinese medicines were not effective. In July 2017, she began to take biologic agent therapy- Infliximab in our department and the skin lesions improved significantly. In August of the same year, when the third time for Infliximab treatment, the patient's skin developed a small amount of erythema with pruritus after 40 minutes of static pumping. The Infliximab was discontinued immediately, and chlorpheniramine 10 mg was intramuscularly injected. Rashes disappeared and itching improved after 30 minutes. Then Infliximab continued by micro-pumps, the process is smooth, without obvious discomfort. Two months later, in the 4th Infliximab treatment, previous erythema recurred in one hour and sporadic wheals appeared in the lower limbs. After emergent treatment included stop using Infliximab, chlorpheniramine 10mg intramuscular injection, diprosan 1ml intramuscular injection, the rash subsided and itching improved in 30 minutes. Then Infliximab treatment continued, and the process is smooth, no significant discomfort.

Follow-up two cases, they were improved more than PASI 90.

PB14-004

### **Efficacy and safety of biologics targeting IL-17 and IL-23 in the treatment of moderate-to-severe plaque psoriasis: a meta-analysis of randomized controlled trials**

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**Background** Nowadays, increasing biologic targeting IL-17 and IL-23 were licensed for psoriasis. The lack of head-to-head randomized controlled trials made it difficult to choose the optimal biologics for patients. And it remained unknown whether there was any difference of efficacy and safety between biologic agents inhibiting IL-17 and IL-23.

**Objective** To estimate the short-term (12-16 weeks) efficacy and safety of biologics targeting IL-17 and IL-23 for the treatment of moderate-to-severe plaque psoriasis by performing meta-analysis.

**Methods** PubMed, Web of Science, Embase, and Cochrane databases searches were conducted. Among the literatures retrieved, relevant clinical trials were analyzed. Statistical analysis of the data was performed by RevMan 5. 3.

**Results** Twenty-one randomized clinical trials ( $n = 14935$ ) met the defined inclusion criteria. Ixekizumab (160mg wk0+80mg q2w) was shown to have the greatest probability of achieving both PASI 75 and PASI 90 response. For safety, Tildakizumab (200 mg, q4w) performed best while Ixekizumab (160mg wk0 + 80mg q2w) showed highest risk for at least one AE. Comparing to the biologics targeting IL-23, the pooled effect size favored the biologic agents targeting IL-17 in terms of PASI 75 and PASI 90. The rate of overall AEs was significantly higher in biologics targeting the IL-17 than biologics targeting IL-23.

**Conclusions** Ixekizumab was shown to be the most efficacious but also riskiest for short-term moderate-to-severe plaque psoriasis, while Tildakizumab was the safest one. Moreover, the efficacy of biologics inhibits IL-17 seemed to perform better and showed higher risk than biologics targeting IL-23 in the therapies of moderate-to-severe plaque psoriasis.

PB14-007

**Presentation of publications in psoriasis of the recent ten years: a bibliometric analysis**Lian Cui<sup>1,2</sup>, Heng-Li Lu<sup>1,2</sup>, Yu-Ling Shi<sup>1,2</sup>

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2. Tongji University School of Medicine, Shanghai, China

**Purpose** As the first bibliometric analysis on psoriasis in the last decade, this study aimed to determine the quantity and quality, as well as the study trend of psoriasis publications in the recent ten years.

**Methods** We conducted the database search on Web of Science Core Collection using the key words 'Psoriasis' and 'Psoriatic' with the time limitation from 2008 to 2018.

**Results** A whole number of 21,918 psoriasis publications and the top 100 highly cited papers were involved in this study. Kristian Reich published the greatest number of the psoriasis articles, and 'Journal of Investigative Dermatology' remained in the first place with 1819 (8.3%) articles. USA published 5916 (27.0%) articles as the leading country. University of Toronto was the most common research institution with 598 (2.7%) publications. Among the top 100 highly cited works, Alan Menter was the most frequently appeared author (17%). 'Journal of Investigative Dermatology' remained as the journal with highest quality with 12 articles (12%), and USA still hold a clear majority (75%) among these 100 most-cited works. The clinical trials of biologics (22%) were most popular in the last decade with the increasing number of publications and citations.

**Conclusion** Our study gave a unique insight into the psoriasis publications as well as the most influential works in psoriasis, and described the trends in highly cited literature.

PB14-008

**Endoplasmic reticulum stress response and inflammation in keratinocytes contributes to the Psoriasis Vulgaris**

Guilan Yang, Min Zhao

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**Objective** Endoplasmic reticulum stress (ERS) has been implicated in the pathogenesis of various inflammatory and autoimmune diseases. However, the role of ERS in psoriasis is still unclear. The present study was designed to investigate the significance of keratinocytes ERS in psoriasis vulgaris (PV).

**Methods** ER morphology and the ER expansion in psoriatic keratinocytes were observed by transmission electron microscope. Both Western blot assay and immunohistology were applied to detect the protein expressions of ERS such as CHOP, XBP1, and GRP78 in psoriatic epidermis of patients with PV.

**Results** Observation with transmission electron microscope showed the changes in ER morphology and the ER expansion in psoriatic keratinocytes. Both Western blot assay and immunohistology demonstrated that protein expressions of ERS such as CHOP, XBP1, and GRP78 in psoriatic epidermis of patients with PV increased compared with controls. Moreover, abundant expression of TNF- $\alpha$  was relevant to that of CHOP, XBP1 and GRP78.

**Conclusion** These findings suggest that ERS plays a role in the pathogenesis of PV.

PB14-009

**Association study of the polymorphisms of REL, TNIP1 gene and negative emotion with psoriasis**

Qiang Zhang

Nanfang Hospital

**Objective** To study the correlation of the polymorphisms of *REL*, *TNIP1* genes and negative emotion with psoriasis, and provide the important theoretical basis and guidance for the prevention and clinical treatment in patients with

psoriasis.

**Methods** Self-evaluation of the anxiety scale (SAS), self-evaluation of depression scale (SDS), Pittsburgh sleep index (PSQI) scale were used to evaluate the negative emotions and sleep quality of subjects in the present study. The blood DNA was extracted and the genotyping method was the ligase detection reaction for SNP rs702873 of the *REL* gene and SNP loci rs17728338 of the *TNIP1* gene.

**Results** SAS score and SDS score of psoriasis group were significantly higher than those of control group. Sleep disorder proportion in psoriasis group was significantly higher than that in control group. The average score of PSQI in psoriasis group was significantly higher than that in healthy control group. The allele A frequency of rs702873 on the *REL* gene in psoriasis group was significantly lower than that in healthy controls group. The allele A frequency of rs17728338 on the *TNIP1* gene in psoriasis group was significantly higher than that in healthy controls group. The allele A frequency of rs702873 on the *REL* gene in psoriasis subjects with anxiety was significantly lower than that in psoriasis subjects without anxiety. The allele A frequency of rs702873 on the *REL* gene in psoriasis subjects with depression was significantly lower than that in psoriasis subjects without depression. The allele A frequency of rs17728338 on the *TNIP1* gene in psoriasis patients with anxiety was significantly higher than that in psoriasis patients without anxiety. The allele A frequency of rs17728338 on the *TNIP1* gene in psoriasis patients with depression was significantly higher than that in psoriasis patients without depression.

**Conclusion** The onset of psoriasis are closely related with negative emotions such as anxiety, depression, and sleep disorders. In the present study, the SNP rs702873 of *REL* gene and the SNP rs17728338 of *TNIP1* gene were confirmed to associate with psoriasis; however they did not show any correlation with the age of onset and family history of psoriasis. The interactions between negative emotions and polymorphism locus rs702873 of *REL* gene and polymorphism locus rs17728338 of *TNIP1* gene were closely associated with psoriasis, suggesting that negative emotions may play a vital role in the occurrence, development and recurrence of psoriasis.

PB14-010

### Genomic and expression changes of SHARPIN in psoriasis

Yanhua Liang, Hai-Lan Fan

*Department of Dermatology, Shenzhen Hospital, Southern Medical University*

**Objective** To investigate the potential correlation between SHARPIN and psoriasis development.

**Methods** Association analysis for genomic variants of *SHARPIN* gene has been conducted between 47 psoriasis patients and 100 healthy controls. SHARPIN expression changes were compared between 5 psoriasis lesions and 3 healthy skin tissues.

**Results** Twelve variants were found in psoriasis patients including 11 reported and 1 new SNPs, among which seven variants were found in healthy controls. No SNPs were significantly associated with psoriasis. The expression of SHARPIN in psoriasis lesions was not significantly changed compared with healthy skins.

**Conclusions** Our results implicated SHARPIN mutations were not directly associated with the development of psoriasis.

PB14-011

### Effect of IL-22 on the proliferation and differentiation of keratinocytes via regulating C/EBP $\alpha$

Hua Zhong

*Qi Lu Hospital, Shandong University*

**Objective** To investigate the role of IL-22 in the proliferation and differentiation of keratinocytes, and explore the correlation between IL-22 and C/EBP $\alpha$ .

**Methods** 1. IL-22 stimulation in the primary keratinocytes. 2. Detection of the phosphorylation of key molecules in MAPK pathway using Western Blot: Cells were collected after stimulation with IL-22 for 60mins. The expression level of JNK, p-JNK, p38, p-p38, ERK and p-ERK was analyzed by Western Blot. 3. Evaluation the effect of IL-22

on the proliferation of keratinocytes by CCK-8. 4. Detection of CK10 and Involucrin by Western Blot. 5. Determination of C/EBP $\alpha$  expression level at mRNA and protein level by RT-PCR and Western Blot.

**Results** 1. IL-22 significantly induced the expression of p-JNK, p-ERK and p-p38 in keratinocytes treated with IL-22 compared with untreated cells ( $P < 0.05$ ). 2. IL-22 promoted the proliferation of keratinocytes: CCK-8 was significantly increased in keratinocytes upon IL-22 which indicates the rate of proliferation was time and dosage depended on IL-22. 3. IL-22 could significantly inhibit the differentiation of keratinocytes: Data showed that 60ng/mL of IL-22 could remarkable inhibit the expression of CK10 and Involucrin ( $P < 0.05$ ), which showed significant concentration-dependence. 4. IL-22 could significantly decrease the mRNA and protein expression level of C/EBP $\alpha$ : RT-PCR and Western Blot showed that the mRNA and protein expression level of C/EBP $\alpha$  was significantly decreased with the increased concentration of IL-22 ( $P < 0.05$ ).

**Conclusion** IL-22 could inhibit the proliferation and differentiation of keratinocytes via regulation of MAPK pathway and the expression of C/EBP $\alpha$ .

## *PB15 Sexually Transmitted Diseases*

PB15-001

### **A case of neurosyphilis**

Min Zhang

*Department of Dermatology, The First Affiliated Hospital of Army Medical University*

A 12 years old female patient. The body repeatedly generated erythema, papules with joint pain, fatigue, alopecia for about 4 months, the local hospital has been misdiagnosed as Pityriasis lichenoides et varioliformis acute (PLEVA), systemic lupus erythematosus (SLE) and the Treatment is invalid. Treponema pallidum particle agglutination test (TPPA) positive serum response decrease, toluidine red unheated hormone test (TRUST) positive (1:512); syphilis detection (TPPA): positive cerebrospinal fluid; syphilis detection (TRUST) negative cerebrospinal fluid. Diagnosed with neurosyphilis, given for injected of penicillin 4 million units /4 1 hours for 14 consecutive days, the skin lesions subsided.

PB15-002

### **HPVE7 up-regulates CTLA-4 expression by epidermal regulatory to promote immune escape**

Yinjing Song, Qiang Zhou, Hao Cheng

*Sir Runrun Shaw Hospital, Medical School of Zhejiang University*

**Objectives** Human papillomavirus (HPV) is closely related to the incidence of multiple cutaneous mucosal tumors such as cervix cancer. Toxic T-lymphocyte-associated antigen-4 (CTLA-4) serves as the main immune checkpoint and can suppress the over-activation of T-cells. The purpose of this study was to explore whether HPVE7 can regulate CTLA-4 enough to promote its immune escape.

**Methods** This study investigated the role of HPVE7 in the regulation of CTLA-4 by Microarray, Q-PCR, WB and CHIP experiments.

**Results** Our microarray results showed that low-risk HPV11E7 protein can up-regulate CTLA-4 expression in KC cells. The high-risk HPVE7 can also induce the expression of CTLA-4 in cervical cancer cells. We also found that HPVE7 specifically down-regulates the expression of histone methyltransferase KDM2B in epithelial cells and promotes the methylation level of H3K36me2 in the CTLA-4 promoter region. However, the expression of CTLA-4 changed significantly after interference with or overexpression of KDM2B.

**Conclusion** Our results show that HPV upregulates CTLA-4 by KDM2B, inhibits T cell activation, and promotes immune escape. Therefore, our study provides some experimental and theoretical basis for the new methods of cervical cancer prevention and treatment.

PB15-003

**HPV6b/11E7 promotes virus escape by regulating arachidonic acid metabolism**

Yinjing Song, Hao Cheng

*Sir Runrun Shaw Hospital, Medical School of Zhejiang University*

**Objective** Condyloma acuminatum (CA) is one of the highest incidence of sexually transmitted diseases in China and is mainly caused by human papillomavirus (HPV) types 6 and 11. The HPV E6 and E7 proteins can suppress immune responses in a variety of ways. Metabolites of arachidonic acid (AA) can recruit macrophages, dendritic cells, and T cells to the site of infection to resist the invasion of pathogenic microorganisms. However, the role of arachidonic acid metabolism in virus-induced immune responses is less clear.

**Methods** This study explored the mechanism of regulation of arachidonic acid metabolism by HPV E7 through Microarray, Q-PCR, WB and CHIP experiments.

**Results** Microarray showed that HPV11E7 significantly downregulated the expression of arachidonic acid 12 lipoxygenase B (ALOX12B). Q-PCR, WB and immunohistochemistry confirmed that HPV11E7 can down-regulate ALOX12B expression. Interfering with or overexpressing ALOX12B can significantly affect the expression of type I interferon.

**Conclusions** HPV11E7 may down-regulate ALOX12B, reduce inflammatory factors and type I interferon produced by arachidonic acid metabolism, and inhibit the infiltration of inflammatory cells, leading to a decrease in the ability of the body to resist viruses.

PB15-004

**Value of the quantitative test for Treponemal pallidum particle agglutination in the diagnosis of neurosyphilis**

Chao Bi

*Guangzhou Institute of Dermatology*

**Objective** To assess the effect of the quantitative Treponemal pallidum particle agglutination (TPPA) test in the diagnosis of neurosyphilis.

**Methods** 25 cerebrospinal fluid (CSF) specimens of neurosyphilis were detected by venereal disease research laboratory test (VDRL), rapid plasma reagin test (RPR), the quantitative TPPA test, IgG/IgM of FTA-ABS (fluorescent treponemal antibody absorption test), and serum specimens were detected by RPR. After six months of treatment and one year later, the above detection indicators were repeatedly tested.

**Results** (1) After treatment with neurosyphilis, the TPPA dilution multiples in CSF continued to decline ( $P < 0.05$ ), and 2 patients turned negative; (2) TPPA dilution multiples in CSF are related to VDRL ( $r = 0.7037$ ,  $P = 0.0001$ ) and RPR ( $r = 0.4301$ ,  $P = 0.0319$ ) dilution multiples in CSF, respectively; (3) TPPA dilution multiples in CSF have no relation to RPR dilution multiples in serum ( $r = 0.09643$ ,  $P = 0.6469$ ); (4) CSF and serum TPPA qualitative results are consistent with FTA-ABS IgG.

**Conclusion** Quantitative TPPA test has good value for the observation of curative effect of neurosyphilis.

PB15-005

**Construction and identification of active *Chlamydia Trachomatis* bacteriophage and its effect on *Chlamydia Trachomatis***

Ting-ting Lian

*Tianjin Medical University General Hospital*

**Objective** To construct an active phage that has a therapeutic effect on *Chlamydia trachomatis*.

**Methods** The M13 phage was recombined with sequences of the IN5 part of the chlamydial bacteriophage phiCPG1 capsid protein Vp1 to obtain a recombinant M13-IN5 phage. PCR amplification, enzyme digestion and sequencing were used to verify whether the target fragment was inserted successfully. The viability of phage was detected by plaque formation and the expression of IN5 loop was detected by Western blotting. M13-IN5 recombinant phage were co-cultured with the *Chlamydia trachomatis* E strain and compared the change of chlamydia inclusion body at 36h, 48h, 60h and 72h after infection with M13 phage group and the control group.

**Results** The constructed recombinant M13 phage contains IN5 loop gene and was confirmed to express IN5-loop fusion protein by Western blot. The inclusion body's number of recombinant phage group decreased than the control group and M13 group in 36h, 72h.

**Conclusions** M13-IN5 recombinant phage is biologically active and can successfully express IN5 loop. In vitro experiments, the recombinant phage can significantly inhibit the infection of *Chlamydia trachomatis*.

PB15-006

### **Improve the ability of capsid protein Vp1 of chlamydia phage $\phi$ CPG1 adhere to its host by change the hydrophilicity of IN5 loop**

Quan Zhou, Lei Zheng, Yuan-Jun Liu, Quan-Zhong Liu

*Tianjin Medical University General Hospital*

*Chlamydia trachomatis* infections remain the most common bacterial sexually transmitted infection worldwide. Given the current challenges of antibiotic resistance and blocked processes of vaccine development, the use of a specific chlamydia phage may be a new treatment solution.  $\phi$ CPG1 is a lytic phage specific for *Chlamydia caviae*, and shows over 90% nucleotide sequence identity with other chlamydia phages. Vp1 is the major capsid protein of  $\phi$ CPG1. Purified Vp1 was previously confirmed to inhibit *Chlamydia trachomatis* growth. We here report our results demonstrate that we had transform some amino acid sequence of the capsid protein Vp1 IN5 loop by change the hydrophilicity of them. And made it infected *C. trachomatis* in vitro study. We have successful express the purpose proteins. The mutant protein had an inhibition effect on *C. trachomatis*. The inhibition rate of Vp1, Vp1<sub>m1</sub>, Vp1<sub>m2</sub> was 78.49%, 55.99% and 86.56% respectively. The mutant protein Vp1<sub>m2</sub> from  $\phi$ CPG1 has obviously inhibitive effect on the growth of *C. trachomatis*, the inhibition rate of Vp1<sub>m2</sub> was higher than protein Vp1. It reveals that the hydrophobicity may play an important role in the interaction mechanism between chlamydia phage and its host cell.

PB15-007

### **Annular secondary syphilis on penis**

Cai-Chou Zhao, Zheng Zhang, Ling-Xi Liu, Bo Feng, Xing-Hua Gao, Jiu-Hong Li

*No. 1 Hospital of China Medical University*

Syphilis is a common sexually transmitted disease in the world. Because of its complicated and variant clinical manifestations, it is not easy to diagnose. In this paper, we report a case of annular syphilis, which is an uncommon form of secondary syphilis on rare region. This interesting case can give clinicians an idea to make diagnosis and differential diagnosis. And with the increasing of complications, we should pay more attention to uncommon clinical presentations of syphilis.

PB15-008

**Vp1 is a potential therapeutic agent for *Chlamydia trachomatis* infection**

Jie Ren, Quan-Zhong Liu

*Tianjin Medical University General Hospital*

*Chlamydia trachomatis* (*C. trachomatis*) is the main cause of sexually transmitted bacterial infections. However, the pathogenesis is still unclear, and the effect of clinical treatment is still not ideal. We studied the interaction between *Chlamydia trachomatis* and Chlamydiae virus CPG1 capsid protein Vp1. We found that Vp1 significantly inhibited *Chlamydia trachomatis* cultured in vitro. Pretreatment with Vp1 also prevented cytotoxicity of host cells caused by *Chlamydia trachomatis*. In addition, we found that the PmpI protein is the binding site of Vp1 protein on the outer membrane of *Chlamydia*. After blocking the PmpI protein, the inhibition rate of Vp1 on *Chlamydia trachomatis* decreased significantly. These results indicate that Vp1 can be developed as a therapeutic agent to inhibit chlamydia infection and prevent chlamydia from altering host cell responses.

PB15-009

**A study on the association between health risk behaviors and future drug use, drug trafficking and HIV infection among middle school students**Renli Wang<sup>1</sup>, Shi-Ze Zhang<sup>1</sup>, Zhen Jiang<sup>2</sup>, Ling-Ling Dong<sup>1</sup>, Bing Gui<sup>1</sup>, Hong Yang<sup>1</sup>, Jian-Zhong Zhang<sup>3</sup>1. *The first hospital of LiangShan Yi Autoprefecture*2. *China Center for disease control and prevention of STD*3. *Peking University People's Hospital*

**Objective** To understand the relationship between health risk behaviors and future drug use, drug trafficking and HIV infection among middle school students in Liangshan area. Provide reference for the development of intervention measures.

**Methods** According to the prevalence of drugs and AIDS in Liangshan area, random cluster sampling in selected area, used self made questionnaire, excluded the unqualified before uniform number. Inputted and analyzed the data by EpiData3. 1 and SPSS18 software.

**Results** Among the surveyed 10749 students, predicted the future may be infected with HIV, drug abuse, drug trafficking in middle school students were 2324, 1662 and 1635. The respective proportions were 21.8%, 15.5% and 15.2%. The expectation of future drug use, drug trafficking and HIV infection dangerous factors include drinking alcohol, smoking, sedative drug abuse, unsafe place to swim, serious injury, bullied, involuntary sex behavior, read pornographic publications. Extra curricular time was the protective factor.

**Conclusion** The proportion of middle school students in selected Liangshan area expectation of future drug use, drug trafficking and HIV infection was higher. Closely related to a variety of health risk behaviors. Take strong and effective intervention measures to effectively promote the region's anti drug AIDS prevention work

PB15-010

**Evaluation of serum specific anti *Treponema pallidum*-IgM and risk factors of neurosyphilis in serofast syphilis patients**

Mei Shi

*Shanghai Skin Disease Hospital*

**Aim** To evaluate serum specific anti *Treponema pallidum*-IgM (Tp-IgM) and risk factors of neurosyphilis in serofast syphilis patients.

**Methods** 382 patients with serofast syphilis were recruited from Shanghai Skin Disease Hospital between Nov 2010

and Dec 2016. All the patients had been at least twelve months after initial recommended treatment and regular follow-up. Serum samples were collected for the detection of a specific anti Tp-IgM by enzyme-linked immunosorbent assay (ELISA) and IgM against Tp15, Tp17, Tp45, and Tp47 by Western blotting. Cerebrospinal fluid specimens were collected for diagnoses of neurosyphilis.

**Results** The median length of follow-up were 18.4 months (range 12.0-36 months). 4-fold decline in serum rapid plasma reagin (RPR) was observed in 128 patients (33.5%). Serological failure rate was 49. 2%. 66 patients encountered with sero-reversion. The incidence of neurosyphilis was 22. 8%. Serum Tp-IgM ELISA were positive in 24. 9% patients at the end of follow-up. Serum Tp-IgM positive rate was more higher in patients with sero-reversion ( $P=0.01$ ) and sero-reactive patients ( $P=0.005$ ). Tp17 IgM (82. 1%) and Tp45 IgM (69.5%) were predominant types of serum TP-IgM in serofast patients. In a multivariate logistic regression model, male patients (2.27-fold), patients aged  $\geq 45$  years old (4.11-fold), serum RPR titer  $\geq 1:8$  (3.11-fold) and patients with sero-reversion (2.56-fold) were more likely to have neurosyphilis.

**Conclusions** The positive detection of serum Tp-IgM indicate activity of infectiousness in serofast syphilis patients. Male gender, age  $\geq 45$  years, serum RPR titer  $\geq 1:8$  and patients with sero-reversion are correlated risk factors for neurosyphilis in serofast patients.

PB15-011

### **An unusual combination: Malignant syphilis associated with neurosyphilis in HIV-negative patients**

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Malignant syphilis is rare dermatologic manifestation of secondary syphilis, which has recently been more frequently reported in the human immunodeficiency virus (HIV) infected population. This study aimed to investigate the relationship between HIV infection, malignant syphilis and neurosyphilis through a systematic analysis of medical data of our 26 malignant syphilis patients and a literature review of 81 reported malignant syphilis cases since 1987 when indentifying the first malignant syphilis patient co-infected with HIV. We found no direct association between HIV infection and malignant syphilis or neurosyphilis. Additionally we found a new unusual combination of malignant syphilis and neurosyphilis in the absence of HIV infection, and the higher proportion of neurosyphilis (30%) out of malignant syphilis contrasted that (23.8%) out of common secondary syphilis. Physicians should be aware that the importance to perform a cerebrospinal fluid (CSF) examination on malignant syphilis patients, when medical condition can be accessible, for the best clinical information to guide management decisions rather than a single serum rapid plasma regain (RPR) test.

## *PB16 Therapies*

PB16-001

### **Kimura disease has an excellent response to oral corticosteroid and methotrexate**

Han Ma, Zhi-rui Chen, Mei-Rong Li, Chun Lu, Wei Lai

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Kimura disease is a rare inflammatory disease presented as solid and painless subcutaneous mass in the region of head and neck. The treatment of the disease is quite difficult because recurrence is very common. Although there is variety of novel therapeutic measures, corticosteroids and immunosuppressive agents are still the firstline strategy in the treatment of this disease. In the study, we have described a case of Kimura disease which showed excellent response and long-lasting treatment effect after administration of oral corticosteroid and intravenous methotrexate.

PB16-003

**Clinical observation on the treatment of cholinergic urticaria with Qingxin Anzhen Decoction**

Yingying Ma

*Heilongjiang University of Chinese Medicine***Objective** To explore the clinical curative effect of Qingxin Anzhen Decoction on cholinergic urticaria.**Methods** The 56 patients with cholinergic urticaria were randomly divided into control group and observation group, each group of 28 cases. The rats in the control group were treated with epinastine hydrochloride capsules and the observation group was treated with Qingxin Anzhen Decoction. The therapeutic effects of the two groups were compared and analyzed.**Results** The effective rate of the treatment group was 92.90% in the observation group and 82.10% in the control group ( $P < 0.05$ ).**Conclusion** The therapeutic effect of Qingxin Anzhen Decoction on cholinergic urticaria is significant.

PB16-007

**Efficacy and safety of phototherapy in early-stage mycosis fungoides: a single-center retrospective study**

Da-Wei Han, Shi-Yu Zhang, Tao Wang, Jie Liu, Yue-Hua Liu

*Department of Dermatology, Peking Union Medical College Hospital, Chinese Academy of Medical Sciences***Background** Phototherapy is the standard treatment for early-stage of mycosis fungoides (EMF). Large sample clinical studies with phototherapy for EMF to assess the efficacy and safety in Asia patients were rare. We sought to assess the efficacy and safety of phototherapy in EMF through a retrospective study in single-center.**Methods** Clinical data were collected from 117 outpatients with EMF (IA, IB, IIA) based on skin biopsy and clinical features. Side effects, such as skin dryness, pruritus, erythema, lentigines, hyperpigmentation, idiopathic guttate hypomelanosis (IGH)-like lesions, nail pigmentation, nail Beau's line, nail thinning, nail onycholysis, acne, eye dryness, skin photoaging, skin carcinoma, blurred vision were assessed, and its relationship with the treatment duration, the dosage, the spectrum of violet (PUVA and/or UVB) and the effectiveness of phototherapy were enrolled in the study.**Results** In the study, one hundred and seventeen patients with EMF were enrolled. There were 79 patients who received PUVA+UVB therapy (combined therapy); the rest 38 patients were treated with UVB. A significant difference between side effects and the gender, the age at diagnosis, the duration of phototherapy, the type of phototherapy, the cumulative dose of UVA and the cumulative dose of UVB has been showed according to statistical analysis. Needs to be emphasized that there are no significant differences between different groups with skin carcinoma.**Conclusion** Phototherapy is safe, effective in patients with EMF in Chinese patients.

PB16-008

**Topical ozone therapies improve atopic dermatitis via rapidly reducing *S. aureus* colonization and immunoregulation**Jian-Yun Lu<sup>1</sup>, Ming Li<sup>2</sup>, Li-Hua Gao<sup>1</sup>, Miao-Miao Li<sup>1</sup>, Ya-Ping Xiang<sup>1</sup>, Jin-Hua Huang<sup>1</sup>

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2. Xiangya medical school of Central South University

Atopic dermatitis (AD) is an inflammatory skin disease characterized as staphylococcus aureus (*S. aureus*) colonization as well as an imbalanced immune response. Current research shows that topical ozone therapy is an

effective and alternative treatment in the management of multiple skin diseases, including AD. However, the mechanism for the ozone is not clearly understood. The aim of this study is to determine the clinical effectiveness and safety of topical ozone therapy and preliminary explore the mechanisms involved.

**Methods:** Patients between 6 to 65 years old diagnosed as moderate or severe AD were treated topically with ozone. The treatment scheme is topical application of ozonated water followed by ozonated oil, twice daily, for two weeks. The Severity Scoring for AD (SCORAD) index, Visual Analog Scale (VAS) pruritus and sleep scores were evaluated. The thickness of epidermal layer was detected by Reflectance Confocal Microscopy (RCM) and the expression of Th1, Th2, Th17 and Treg type cytokines in peripheral blood was tested by ELISA. Plate cultivation was used to quantitatively detect numbers of *S. aureus* colonizations in skin lesions.

**Results** Twelve patients in present study showed significant improvement in the eczematous skin lesions, with better keratinization of the stratum corneum, clearer basal layer structure and reduced infiltration. of inflammatory cells SCORAD, VAS pruritus and sleep scores were all significantly decreased ( $P < 0.01$ ). The ozone decreased the numbers of *S. aureus* colonization in skin lesions after treatment ( $90.74 \pm 0.14$ )% ( $P < 0.01$ ). The percentages of *S. aureus* colonies were parallel to the SCORAD scores in AD patients. Other side effects were not found. By using ELISA, we detected several cytokines concentrations in the serum in the patients. It was found that IL-17A expression was significantly decreased after treatment with ozone ( $P < 0.01$ ). On the other hand, although ozone increased the level of suppressive cytokine, IL-10, and decreased the level of pruritus related cytokine, IL-31, no significances were found ( $P > 0.05$ ).

**Conclusion** The treatment by using topical ozone alone significantly improve eczematous lesions in patients with AD, as well as decrease severity scoring, VAS pruritus and sleep loss scores. The mechanisms involved might be related to rapid reduction of *S. aureus* colonization and decreasing IL-17A expression. Our findings suggest that topical ozone therapy may be a potential remedy for AD.

PB16-010

### Clinical effect of chronic eczema treated by Lingnan fire-needle evaluated with symptom and life-quality score

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2. Panyu District Hospital of TCM

3. Tianhe District Hospital of TCM

4. Guangzhou University of TCM

**Objective** To explore the comprehensive curative effect of chronic eczema by use Lingnan fire-needle therapy.

**Methods** 90 patients with chronic eczema was divided into 3 groups, 30 cases in each group, using random number table method, who were from 1st Affiliated Hospital of GZ university of TCM, Panyu District Hospital and Tianhe District Hospital. Group A was treated with Lingnan fire-needle therapy, B with acupuncture and C with antihistamine drug.

**Results** Irrespective of treatment time, overall treatments can improve EASI index, itch VAS evaluation among the patients in this study ( $P < 0.05$ ). Irrespective of treatment, the treatment increase can also do that. ( $P < 0.05$ ). There is a interaction relationship between treatment and treatment timing ( $P < 0.05$ ). These 3 treatments all can effectively improve life quality of chronic eczema patients ( $P < 0.01$ ), and there was significant difference between the DLQI differences between 3 groups ( $P < 0.01$ ). In terms of comprehensive efficacy, effective rate of group A was 93.33%, B was 86.67% and C was 66.67%.

**Conclusion** These 3 treatments all can effectively improve EASI index, itch VAS evaluation and DLQI score of chronic eczema patients. Lingnan fire-needle and acupuncture have equivalent efficacy in chronic eczema, are better than taking antihistamine drug. Compared with acupuncture, Lingnan fire-needle is worthy of clinical promotion with it operate easily and work quickly.

PB16-011

**Effect of the single advancement flap on repairing the medial cheek defects after resection of malignant tumor and precancerous lesions**Ganggang Li<sup>1,3</sup>, Mei-Feng Xu<sup>1</sup>, Xuan-Feng Tan<sup>1</sup>, De-Wu Zhang<sup>1</sup>, Na Gao<sup>1</sup>, Zi Wang<sup>1</sup>, Hui-Qun Ma<sup>1,2</sup>

1. Department of Dermatology the Second Affiliated Hospital of Xi'an Jiao Tong University

2. The Chinese Journal of Dermatovenereology

3. People's Hospital of Tongchuan

**Objective** To investigate the clinical curative effect of skin and soft-tissue defects were repaired with the single advancement skin flap in the medial cheek after resection of malignant tumor and precancerous lesions.

**Methods** In total six cases, three cases were basal cell carcinoma, one case was actinic keratosis with highly differentiated squamous carcinoma, two cases were actinic keratosis. The lesion border was excised with 4mm, 4mm and 3mm additional margin respectively. Then defects were repaired with the single advancement flap. The length of flap was about twice as the width of the starting position of the flap. Soft tissue flaps were elevated from superficial layer of SMAS.

**Results** It is confirmed that the single advancement flap can be used to reconstruct certain size of defects after resection of malignant tumor or precancerous lesion located on the medial cheek, the flap survival rate is higher, the original disease recurrence rate is lower, with less side effects.

PB16-013

**Sturge-weber combined Klippel-Trenaunay Syndrome: A case report**Ri-Ga Wu<sup>1</sup>, Li Li<sup>2</sup>, Lin Ma<sup>2</sup>

1. The Affiliated Hospital of Inner Mongolia Medical University

2. Beijing Children's Hospital, Capital Medical University, National Center for Children's Health

**Objective** To identify the clinical features of Sturge-weber and Klippel-Trenaunay syndrome and improve the understanding of the disease.

**Methods** This article reviewed the case data and related literature of a child Sturge-weber combined with Klippel-Trenaunay syndrome, and analyzed the pathogenesis, clinical manifestations, imaging characteristics, diagnosis and treatment of the disease.

**Results** Both Sturge-weber and Klippel-Trenaunay syndromes are complex vascular malformations syndromes. They are rare. They are caused by somatic mutations. Treatment is a long-term and complex process. It requires multidisciplinary management. At present, it is mainly symptomatic treatment.

**Conclusion** Sturge-weber and Klippel-Trenaunay syndrome are rare and important to their early understanding.

PB16-014

**Clinical characteristics and risk factors for methotrexate toxicity: A case report and review of the literature**

Liuyu Chen

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Methotrexate (MTX) is an antimetabolite drug used for a vast number of conditions in dermatology. It is an analogue of folic acid and inhibits dihydrofolic acid reductase. The common serious types of adverse events with methotrexate have been reported including hepatic, hematologic, gastrointestinal, cardiovascular, renal, dermatological, pulmonary, neurologic, and immunologic events. We present a case of methotrexate-induced cutaneous ulceration in a patient with SLE. Review of the literature demonstrates patients with methotrexate toxicity exhibited mucositis, skin lesions,

pancytopenia. Renal involvement, older age, and mucositis predicted poor prognosis, but none of the errors in dosing, hepato-toxicity, and concomitant use of NASIDs. Dermatologists need to be alert to the possibility of cutaneous ulceration associated with methotrexate therapy and make early intervention.

PB16-002

### Experience in the treatment of moderate to severe acne by TCM

Xin-Yan Huang

*Second Affiliated Hospital of Zhejiang University School of Medicine*

**Objective** To observe the treatment effect of classical by TCM in the treatment of moderate to severe acne;

**Methods** 25 acne outpatients from December 2017 to March 2018, with moderate and severe acne diagnostic criteria, and II-III acne patients by Pillsbury classification method, eliminate photosensitive skin diseases and those may be induced or aggravate due to irradiation, through four diagnostic methods, using the Chinese traditional medicine in the treatment of moderate to severe acne treatment, ranging from half to 3 months+, during the treatment, no spicy and pungent food, application TCM: Scutellaria baicalensis plus Pinellia ginger Soup, zhizichi Decoctions, Daisaikoto Soup, Angelica czernaevia Kita Soup, XiaoPinGuiGanHshiMaimentdong Soup, QinjingGuizhiZhupiHuangqin Soup.

**Result** Achieved good results.

**Experience** 1. Scutellaria baicalensis, Peucedanum. . . etc. can be used for pus papula treatment; 2. Calcitriol, gypsum. . . etc. can be used for nodular cyst treatment.

PB16-004

### Efficacy of off-label use of topical calcineurin inhibitors in Dermatology

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**Background** Topical Calcineurin inhibitors have been assessed in many dermatological diseases. However, to date the evidence-based data concerning the efficacy of topical calcineurin inhibitors for many skin disorders is not clear. The aim of this study was to evaluate the efficacy of off-label use of tacrolimus and pimecrolimus in the treatment of different skin conditions.

**Methods** A search of the Cochrane, Ovid and PubMed review databases is performed using the terms "pimecrolimus", tacrolimus, calcineurin inhibitors along with different dermatological diseases.

**Results** For oral lichen planus, high evidence studies concluded that tacrolimus 0.1% is better than clobetasol, the only limitation was the possibility of systemic absorption. Pimecrolimus 1% cream for oral lichen planus was better than vehicle but equal to triamcinolone acetonide 0.1%. Topical tacrolimus for cutaneous lichen planus was evaluated but there is a low evidence for its use. For contact dermatitis, tacrolimus 0.1% was more effective than placebo in ameliorating the nickel reaction. However, most pair wise comparisons with topical corticosteroids were not statistically significant. Tacrolimus for plaque psoriasis, was superior to placebo, but not superior to calcipotriene. However, it was superior to calcitriol in facial/intertriginous psoriasis. In vitiligo, tacrolimus is almost as effective as clobetasol; both facial and non-facial. Topical calcineurin inhibitors for seborrheic dermatitis, active lichen sclerosus, rosacea, morphea and perioral dermatitis showed favorable results.

**Conclusion** Topical calcineurin inhibitors are a good alternative to topical steroids; with greater emphasis should be based upon the patient's personal values and the benefit/risk ratio and choices in clinical decision making.

PB16-006

**A case of fulminant purpura which was saved**

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Fulminant purpura is a rare acute, severe and often fatal disease that presents with rapidly enlarging, tenderness of skin, developing hemorrhagic skin necrosis. We described a case of fulminant purpura, a 34-year-old Chinese man presented with ecchymosis and necrosis on the abdomen which rapidly expanding in size for 3 days. The patient was given the oral cephalosporin for fever 7 days ago and was drinking alcohol, which a red patch appeared in the abdomen several hours later.

After hospitalization, the platelets were reduced rapidly, and there was no abnormal in blood coagulation function. Histopathology revealed that the capillaries in the dermis were hyperemic, and large numbers of red blood cells were visible. After treatment of hormone, gamma globulin, anti-infective therapy and plasma exchange, the patient was discharged after 2 weeks. The mortality of fulminant purpura is very high, so early infection and plasma exchange is the key to the success of this patient. And Cephalosporin and alcohol can not be used at the same time.

PB16-009

**A case of scrofuloderma cured by topical 5-aminolevulinic acid photodynamic therapy**

Guilan Yang, Min Zhao, Fanjun Song, Bin Xiao, Hongyan Tang

*Shenzhen Hospital, Southern Medical University*

**Objective** Scrofuloderma and lupus vulgaris are the two most common clinical forms in children. In particular, scrofuloderma mainly affects children and adolescents, often progressing to gummatous lesions (scrofulous gumma). The disease is often refractory and disfiguring, but the drugs may cause adverse reactions and there is no curative effect in partial patients. Photodynamic therapy (PDT) is a kind of non-surgical and easily-performed phototherapy used with increasing frequency in dermatology. However, there still have been few published data on whether PDT is also effective on cutaneous tuberculosis.

**Methods** we report a case of a 16 year-old girl with scrofuloderma who responded well to the therapy with PDT therapy.

**Results** We demonstrated the effectiveness of PDT in the treatment of scrofuloderma, which is difficult to cure and readily forms scars using traditional treatment methods.

**Conclusion** As far as we know, this is the first report of the successful treatment of scrofuloderma with PDT.

PB16-012

**High-throughput sequencing analysis of gut microbiome in patients treated with long term of minocycline**

Yuehua Men, Huimin Yan, Wei Jiang

*Peking University Third Hospital*

**Objective** To compare the difference of gut microbiome in patients with severe acne vulgaris before and after 6 weeks of oral minocycline treatment.

**Methods** 10 cases of severe acne vulgaris patients were diagnosed and treated with oral minocycline 50mg bid\*6 week. Stool samples were collected before (P group) and after treatment (PZ group), the bacterial DNA was extracted and subjected to 16S rRNA sequencing for the identification of microbial species, and the differences of gut microbiome were compared between P and PZ group.

**Results** Gut microbiome in the two groups mainly consisted of Bacteroidetes, Firmicutes, Proteobacteria and

Actinobacteria. There were no significant differences in the diversity of intestinal microflora, and no significant differences in the relative abundance of bacteria at the phylum, genus and species levels between the two groups.

**Conclusion** For young and middle-aged people with normal immune status, treated with low dose oral minocycline in 6 weeks has no obvious effect on intestinal flora.

## *PB17 Miscellaneous*

PB17-001

### **Hypertrophic lichen planus with unique dermoscopic features: twisted glomerular vessels**

Yixin Luo, Jie Liu, Cheng Chi

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A 55-year-old Chinese man with hypertrophic lichen planus had a 4-year history of hyperkeratotic, pigmented plaques covered with scales and crusts on the shins and dorsal aspect of the foot, and pterygium, trachonychia and anonychia on toenails. Histopathological examination (haematoxylin-eosin) revealed follicular plugs, hyperkeratosis, hypergranulosis, basal cell degeneration, vascular proliferation, and a band-like infiltrate in the upper dermis. Dermoscopy revealed multiple comedo-like openings filled with yellowish-whitish material, brownish reticular pigmentation, verrucous pattern, and glomerular vessels. There are several variants of lichen planus with various dermoscopic features<sup>1</sup>, but the coiled vessels were rare. Hypertrophic lichen planus can mimic other lichenoid dermatoses, and dermoscopy can be useful for differential diagnosis.

PB17-002

### **Research progress of temperature sensory proteins**

Shengnan Zhao, Xing-Hua Gao, Hong-duo Chen

*No. 1 Hospital of China Medical University*

Many proteins on the cell membrane can be ion channels. They can sense changes in external ion concentrations or mechanical stimuli and regulate the concentration of various ions in the cell (such as Ca<sup>2+</sup>, K<sup>+</sup>, Na<sup>2+</sup>, etc.), to maintain cell homeostasis or play a pathophysiological role. In recent years, studies have shown that certain proteins have the function of sensing temperature and initiate ion flow after the corresponding temperature is activated. This article focuses on temperature-induced ion changes and describes the activation of temperature-sensitive proteins.

PB17-003

### **Safe and effective UV protection of microencapsulated sunscreen nanoparticles based on zeolitic imidazole frameworks**

Dan Luo, Li-Xian Xu, Bing-Rong Zhou, Di Wu, Yang Xu

*The First Affiliated Hospital of Nanjing Medical University*

**Objective** Sunscreen is believed to protect human skin from photo damage due to UV exposure. However, the substantial concerns remain associated with skin contact with UV filters and the subsequent reactive oxygen species from photoactivation of UV filters. So we expect a new form of sunscreen for safe and effective UV protection.

**Methods** We designed microencapsulation of octyl p-methoxycinnamate (OMC), a typical UV filter, into nanoporous structure of zeolitic imidazole frameworks (ZIF-8), a kind of metal organic frameworks (MOF), then analyzed and evaluated the performance and safety of UV protection by different methods.

**Results** OMC/ZIF-8 showed a 5-fold higher UV absorption than OMC/Oil with a UV-Vis spectrometer scanning. Microencapsulated OMC/ZIF-8 has retained 76% of initial UV absorbance after 4h irradiation while free OMC has only remained 41% after 4h irradiation. The OMC release amount of OMC/ZIF-8 is very low, only 1.9% and 2.5% of the total OMC load in artificial human sweat at 32 °C and 37 °C, which could be explained by confinement effect of regular microporous structure of ZIF-8. In transdermal penetration test, microencapsulated OMC/ZIF-8 samples were not detected in the receiver solution at any time while free OMC could pass through human skin tissue into the receiver solution and the drug flux was up to about 25 µg/cm<sup>2</sup> at 8h.

**Conclusion** The microencapsulated UV filter system based on MOF could improve the photo-stability of OMC, provide higher UV photo-protective performance and stop OMC penetrate into stratum corneum and epidermis, which would find broad application in sunscreen for UV protection.

PB17-004

### **Emerging epigenetic role of CD8+T cells in autoimmune diseases**

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Autoimmune diseases (AIDs) are usually complex and multifactorial characterized by aberrant production of autoreactive immune cells and/or autoantibodies to target healthy cells and tissues. However, the pathogenesis of autoimmune diseases has not been clearly elucidated. Mounting evidence indicates that T and B lymphocytes are the paramount factors being implicated in the overactive immune response and overproduction of antibodies. Traditionally, the roles of B lymphocytes and CD4+ T lymphocytes in AIDs are well established. Nowadays, growing evidence suggests CD8+ T lymphocytes participate in the onset and development of AIDs. The activation, differentiation, and development of CD8+ T cells can be affected by numerous inflammatory cytokines, transcription factors and chemokines. However, in recent years, epigenetics are demonstrated to play an important role in the fate of CD8+ T cells. In this review, we summarize and discuss the epigenetic regulations on the fate of CD8+ T cells and their pathological roles in AIDs, for better understanding of pathogenesis of AIDs, as well as providing novel approaches and biomarkers for AIDs.

PB17-005

### **Computer-aided analysis with Image J for comparing different dermatoscopic patterns of dermatofibroma in Han Chinese population**

Juliandri, Xiao-Yan Wang, Zi-jing Liu, Yang Xu

*First Affiliated Hospital of Nanjing Medical University*

**Background** Dermatofibroma is a very common benign tumour of the skin composed of fibrohistiocytic cells which may occur anywhere on the body surface with a predilection for the extremities in adult patients. Although histopathology is the gold standard for a definite diagnosis, dermatoscopy has been proven to be useful tool to distinguish dermatofibroma from other pigmented skin lesions. Recently, several computer image analysis (CIA) techniques have been developed for the assessment of the lesions of the skin. But most of the methods are complicated, time consuming and unfeasible in practice or large-scale clinical trials. Hence, an objective, practical, and reliable method is still in need. The aim of this study was to analyse the dermatoscopy features of dermatofibroma density lesional area using Image J in Han Chinese Population.

**Methods** Prospective study is conducted on 20 dermatofibroma patients who are coming to Outpatient Department of Dermatology in the First Affiliated Hospital of Nanjin Medical Universtiy. Image J was used to analysing the dermatoscopic patterns of dermatofibroma.

**Results** 16 patients (14 Female and 2 male) with 20 dermaofiborma lesions were included in this study. Seven patterns of dermoscopic manifestation were found in all 20 dermatofibroma patients comfired by histopathology. The most commonly seen was Pattern 7b (Multiple white scarlike patches), which was seen in 33% lesions. Then Pattern

3 (Peripheral delicate pigment network and central white network), Pattern 7a (Total white scarlike patch), Pattern 2 (Peripheral delicate pigment network and central white scarlike patch) and Pattern 10 (Atypical) was found in 25%, 16.7%, 8.3%, 8.3% and 8.3% lesions.

**Conclusion** Image J is an objective, practical, and reliable method for analysis of different dermatoscopic patterns of dermatofibroma in Han Chinese Population.

PB17-006

### **Successful treatment of vulva recurrent papular acantholytic dyskeratosis using acitretin and laser therapy: A case report**

Yaping Tian

*The First Hospital of Jilin University*

Papular acantholytic dyskeratosis (PAD) of vulva is a very rare and frequently misdiagnosed disorder. Histological features include hyperkeratosis with acantholytic dyskeratosis and subbasal cleft formation. Treatment of PAD has not been well defined. Here, we present an unusual case of PAD clinically resembling verrucous carcinoma. The patient showed no response to trichloroacetic acid and intralesional triamcinolone acetonide and eventually treated successfully with oral acitretin combined with laser therapy. During a follow-up period of two years, no recurrence has developed. This treatment with relatively mild side-effects less pain may represent an alternative therapeutic option.

PB17-007

### **Norwegian scabies patients in China: A neglected population in urgent attention**

Jiu Yi, Wei Fang, Ya-Li Yang, Wei-Hua Pan, Wan-Qing Liao

*Shanghai Changzheng Hospital*

**Objective** To investigate the epidemiology and clinical characteristics of Norwegian Scabies in the mainland of China.

**Methods** Studies of norwegian scabies in China since 1985 were collected from electronic databases such as PubMed, CNKI, CJDF, and VIP, and Chinese physician full-text journals.

**Results** 46 cases were included in the study. The median patient age was  $54.1 \pm 26.5$  years old, with a male predominance (M:F = 1.56:1). Of all the cases, 30 patients had underlying diseases, and 33 patients were misdiagnosed primitively. 19 patients were diagnosed for endemic infection, and 3 were dead for secondary lung infection. All of the patients were positive under microscopic screen. Notably, the elderly bedridden patients with little family care accounts for 26% of all the patients and often indicate bad prognosis.

**Conclusions** In recent years, the prevalence of norwegian scabies has increased in mainland China and it is often misdiagnosed at the first time. For cases of suspected norwegian scabies, it is necessary to do a microscopic examination and initiate early anti-parasite therapy. The elderly bedridden patients with little family care are more likely to get norwegian scabies who desperately need social concern.

PB17-008

### **A case of bullous dermatomyositis with postoperative recurrence of Schwannomas**

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A 72-year-old male with the operation history of schwannoma had red erythemas, papules and blisters for 4 months, and developed cough and dysphagia a month ago. The patient's strength decreased with a high creatine kinase (CK), and electromyography shows myogenic changes. Pathology of his skin tissue shows blisters in subepidermal. Pathological changes of muscle also supports the diagnosis of dermatomyositis. So the diagnosis was dermatomyositis, schwannoma. Through glucocorticoid, cyclophosphamide, intravenous immunoglobulin (IVIG) and active anti-infection treatment, the patient was discharged from the hospital. This is a case of the bullous dermatomyositis with a recurrence of schwannoma, which cause significant dysphagia together.

PB17-009

### Research progress in the relationship between IL-17 and various autoimmune diseases

Yi-Feng Du

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IL-17 is not only a pro-inflammatory cytokine secreted by various cells, but also an important immunomodulatory substance. It binds to receptors and is widely involved in various biological activities such as inflammation development, immune response, and immune rejection. The current study found that IL-17 and its related cytokines are closely related to a variety of diseases in the body. This article will investigate the relationship between IL-17 and its autoimmune diseases, such as rheumatoid arthritis, multiple sclerosis, and systemic lupus erythematosus. Conduct an overview.

PB17-010

### Clinical value of the neutrophil-to-lymphocyte ratio in the diagnosis of adult-onset Still's disease

Mengqi Guan, Shan-Shan Li

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**Objective** Adult-onset Still's disease (AOSD) is a rare systemic auto-inflammatory disease, the main features of AOSD are a high spiking fever, evanescent rash, sore throat, polyarthralgia, lymphadenopathy, hepatosplenomegaly, serositis, and leukocytosis, as well as elevated liver enzymes and ferritin. None of these manifestations is disease-specific, so clinicians must first rule out neoplastic, infectious or inflammatory conditions. The neutrophil-to-lymphocyte ratio (NLR) is the proportion of absolute neutrophil count to lymphocytes on routine complete blood count tests and has been studied as a simple marker of the systemic inflammatory response. This study was performed to evaluate the clinical value of Neutrophil-to-lymphocyte ratio (NLR) in the diagnosis of Adult-onset Still's disease (AOSD), so as to diagnose early and correctly.

**Methods** This retrospective study was performed in the First Hospital of Jilin University between September 2014 and September 2017. Clinical data of 117 patients with "fever of unknown origin" were collected and analysed. After exclusion, 59 Adult-onset Still's disease (AOSD) patients, 58 non-AOSD patients and 98 healthy subjects as controls were enrolled to the current study. All clinical data were based on electronic medical records. Clinical characteristics, including age and gender were evaluated. Laboratory tests, including CBCs, ferritin, erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), the NLR, the platelet-to-lymphocyte (PLR) and the lymphocyte-to-monocyte (LMR) were evaluated. Statistical analyses were performed using SPSS software.

**Results** Compared with health controls, the NLR and PLR were remarkably higher in both AOSD and non-AOSD patients, while LMR was significantly lower (all  $P < 0.001$ ). AOSD patients showed higher NLRs, lower MLRs, and higher levels of ferritin, ESR, and CRP than non-AOSD patients (all  $P < 0.001$ ). When we compared PLR levels by AOSD and non-AOSD patients, those levels did not differ between 2 groups ( $13.40 \pm 11.12$  vs  $5.01 \pm 5.13$ ,  $P = 0.54$ ). The NLR levels were not different between female and male in patients with AOSD,  $P = 0.465$ . In receiver operating characteristic (ROC) curve analysis of the NLR for diagnosis of AOSD, the area under the curve (AUC) was highest at 0.839 (95% CI=0.759–0.919) with a cutoff value of 6.95. The cutoff value showed the greatest sensitivity (79.7%), specificity (84.6%), and AUC value (0.839) as a diagnostic tool for AOSD. At the same time, combining Yamaguchi

criterion and the levels of NLR to diagnose AOSD will have a high rate of specificity with 98.8%. Related parameters such as gender, NLR, ESR, and CRP detected by univariate logistic regression analysis were statistically related to AOSD. Multivariate logistic regression was performed to show the risk of AOSD patients in women was 3.821 times than that of men and the risk of having AOSD was increased by 1.199 times for every unit increase in NLR.

**Conclusions** The NLR is a valuable marker for the diagnosis of AOSD in the patients with fever of unknown origin.

PB17-012

### **Concomitant systemic lupus erythematosus and primary biliary cirrhosis: one case report**

Mei-Ping Huang

*The First People's Hospital of Kunming*

Autoimmune diseases share some similar pathological pathways or genetic etiologies, and it is common that more than one autoimmune condition may occur in a single patient. Almost all the clinical manifestations of autoimmune diseases are likely to occur in SLE, So SLE has been called the prototype of autoimmune disease by many scholars. PBC is considered an autoimmune disease of unknown etiology with organ-specific disturbance characterized by chronic progressive cholestasis with the destruction of the intrahepatic small bile ducts, particularly the interlobular bile ducts. However, concomitant cases of SLE and PBC are not common, and there have been few systematic literature reviews of these cases. In order to discuss the possible mechanisms of the concomitant cases, to improve the understanding concomitant case of SLE and PBC, 1 case is reported as follows. Concomitant SLE and PBC were also simultaneously classified into extrahepatic autoimmune (EHA) conditions associated with PBC. To date, the clinical features and pathophysiology of concomitant cases of SLE and PBC remain unclear.

PB17-013

### **Chinese medicated bath therapy for psoriasis**

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Psoriasis is a common chronic inflammatory skin disease. In recent years, the prevalence of psoriasis in our country has an increasing trend; psoriasis is a chronic disease which is easy to relapse and difficult to cure, it seriously affecting the patient's quality of life and health physically and mentally. The Chinese medicated bath therapy is one of the representative methods of external treatment of TCM and has been widely used in the treatment of psoriasis. However, there are still many deficiencies. Professor Liu Qiao has been engaged in the treatment of psoriasis for many years and he believes that the Chinese medicated bath therapy of psoriasis should be based on the characteristics of the skin lesions, the course of disease, and the condition of the patient. He thinks that Immersion therapy can be used on people who has bright red and generalized rash with slower rash speed, light erythema with or without large pieces of peeling and those with hypertrophic and fleshy rash lesions. Pustular psoriasis patients, psoriasis arthropathica patients with small joint lesions and the patients who have lots of bright red rash, but the speed of the rash is rapidly can choose different moisten compress therapy according to the condition. Moistened compress therapy is also suitable for these patients who has facial or folding lesions. Fumigation therapy mainly used in patients with Psoriatic arthritis, It is also suitable for these patients who has generalized light erythema with lots of desquamative skin lesions and hypertrophic and infiltrative lesions. Patients with hypertrophic and infiltrative lesions or dry and desquamated lesions are more suitable for fumigation and washing therapy. Pustular psoriasis patients with skin ulceration and scalp psoriasis are better in using shower therapy. This article introduces Liu Qiao's medicated bath therapy for the treatment of psoriasis, and intended to provide new idea for the medicated bath therapy of psoriasis.

PB17-014

**Micro-power vacuum dressing can promote granulation bed preparation before skin grafting**

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**Objective** After skin tumor excision, the skin defect is deep and often with the exposure of nerves, blood vessels and tendons. So the granulation bed preparation is inevitable. Our objective is to investigate if the use of micro-power dressing can accelerate this process.

**Method** We choose 20 patients who have received skin tumor excision and were needed skin grafting, randomly divided them into two groups. The experimental group change dressings with micro-power vacuum materials and the control group change dressings with traditional oil yarn. Then we recorded how many times the dressing has been changed and for how long we can conduct skin grafting in each group. We assessed the granulation growth on the seventh day; and survey the pain degree of the dressing change.

**Results** 1. On the seventh days, the score of granulation is  $4.25 \pm 0.79$  in experimental group much higher than the control group which is  $2.93 \pm 0.44$ ; 2. The pain score of dressing change in experimental group is  $3.9 \pm 1.2$  while in control group is  $5.1 \pm 1.5$ ; 3. The experimental group spent  $9.34 \pm 1.55$  days to receive skin grafting and the control group spent  $14.65 \pm 2.12$  days. 4. During the process experimental group averagely changed dressing for  $3.5 \pm 0.9$  times fewer than  $7.5 \pm 1.8$  times in control group.

**Conclusion** Using micro-power vacuum dressing to cover the defect after skin tumor excision, the granulation growth faster and better than using traditional oil yarn. It can shorten the time for the secondary operation and alleviating pain when change dressing.

PB17-015

**Case report of multicentric reticulohistiocytosis and literature review**

Shengming Qu, Bo-Ping Li, Yi Wu

*The Second Hospital of Jilin University*

A case of multicentric reticulohistiocytosis is reported with literature review. A 45-year-old female was evaluated for a 12-month history of papules on the whole body, and a 10-month history of nodules on both legs. Physical examination showed dense and hard red papules, millet to mung beans size, part of the fusion into plaque on the extensible side of right upper limb; many soybeans to beans large hard nodules, dark red, on the flexor side of dual thighs. Histopathological examination showed epidermis atrophy, a large number of histiocytes hyperplasia with abundant "ground-glass" shaped cytoplasm, and small nuclear with oval shape with HE dyed. And pathological fission was not seen. Immunohistochemical staining showed CD68(+), CD1a(-), S100(-). The final diagnosis was multicentric reticulohistiocytosis. After 5 weeks of symptomatic treatment, the skin papules and nodules were both reduced and joint symptoms were significantly improved. And now the patient is being followed up.

PB17-016

**Case report of hypereosinophilic syndrome and literature review**

Shengming Qu, Ju-Hua Jin

*The Second Hospital of Jilin University*

A case of hypereosinophilic syndrome is reported with literature review. A 72-year-old man was evaluated for a 9-month history of erythema and scale on the whole body by itching. Physical examination showed erythema, scale, nodules, lichenification and pigment abnormalities on the whole body. Skin biopsy showed a few eosinophils infiltration around the shallow middle-level blood vessels of dermis. Eosinophils in blood and bone marrow both increased remarkably by blood test and bone marrow pucture. A clinical diagnosis of hypereosinophilic syndrome

was made according to the typical clinical manifestation, skin biopsy, blood test and bone marrow picture. After 19-days symptomatic treatment, the patient's skin color of whole body changed light, skin rash became flat, and partial brown nodules subsided. Meanwhile we did not see scratches.