

508

Effects of brimonidine tartrate on *P. acnes*-induced inflammatory reaction

S Choi^{1,2}, K Sohn¹, Y Lee¹, M Im¹, J Lee¹, S Kim¹ and C Kim¹ ¹ Department of Dermatology, School of Medicine, Chungnam National University, Daejeon, Korea (the Republic of), ² Department of Medical Science, School of Medicine, Chungnam National University, Daejeon, Korea (the Republic of) and ³ Department of Dermatology, Chonnam National University Medical School, Gwangju, Korea (the Republic of)

Brimonidine is a highly specific α_2 adrenergic receptor agonist and acts on vascular smooth muscle to constrict blood vessels. Currently, it is used for the treatment of rosacea as a gel formulation under the brand name of Mirvaso. We experienced that Mirvaso treatment of patients with acne and rosacea resulted in alleviation of flushing as well as improvement of acne. Since it is well recognized that inflammatory reaction induced by *Propionibacterium acnes* (*P. acnes*) is critically important in the pathogenesis of acne, we speculate that brimonidine has anti-inflammatory activity in addition to its vaso-constrictive effect. In this study, we investigated the effects of brimonidine tartrate on *P. acnes*-induced inflammation in monocytes and keratinocytes that are importantly involved in acne pathogenesis. We examined the expression of α_2 adrenergic receptor in both monocytes and keratinocytes. When applied to both cells, brimonidine tartrate suppressed the *P. acnes*-induced pro-inflammatory cytokine such as IL-1 β , IL-6, and IL-8 in monocytes and keratinocytes. Also, brimonidine tartrate reduced pro-inflammatory cytokine secretion by *P. acnes*. These results demonstrate that brimonidine has additional anti-inflammatory property besides its vaso-constrictive potential, suggesting that brimonidine is beneficial in the treatment of patients with acne and rosacea via dual action mechanisms.



509

Current methodologies in neurosyphilis diagnostics

N Potekaev, N Frigo and E Negasheva *Moscow Center of Dermatology and cosmetology, Moscow, Russian Federation*

Neurosyphilis (NS) is a severe disease caused by *T. pallidum* resulting in significant decrease of life quality, development of disability and lethal outcome, especially in cases of incomplete examination and inadequate therapy. Currently, examination of cerebrospinal fluid (CSF) of patients is decisive for neurosyphilis diagnostics. Pair samples of liquor and blood serum received from 29 patients with the established diagnosis neurosyphilis and from 20 patients without specific lesion of the nervous system were used as a study material. The methods were used in the study: determination of protein concentration and content of cell elements in liquor; non-treponemal method (VDRL); treponemal methods (ELISA, TPHA, FTAc), determination of antibodies to recombinant proteins of *T. pallidum* with the molecular mass of 15,17,41 and 47kDa in the immunochip format; determination of the serum-liquor ratio (ITPA-index). It was established that the VDRL method demonstrated 79.6% sensitivity. Among treponemal tests, the ELISA (91.6-100%) and FTAc (93.2-100%) were the most sensitive methods, TPHA sensitivity was 61.5-85.5%. Also was tested the immunochip. At analysis of liquor samples from NS patients using the immunochip, antibodies to, at least, one applied recombinant antigenic proteins of *T. pallidum* (Tp17, Tp15, Tp47 and TmpA) were revealed in all 29 samples. At that, antibodies to the recombinant antigen Tp17 were detected in all CSF samples (100%), to Tp15 antigens – in 75.5%, to Tp47 antigen - in 77.6%, to TmpA antigen – in 67.3%. The diagnostic specificity at examination of CSF samples in patients without the characteristic lesion of the nervous system was 100%. One of perspective approaches to neurosyphilis diagnostics is calculation of the serum-liquor ratio (ITPA-index). At determination of this parameter, a high coefficient of the serum-liquor ratio (values from 9.06 to 260.8) was noted in 73.5% of NS patients, which unambiguously testified the intrathecal synthesis of antibodies to *Treponema pallidum* and presence of the specific lesion of the nervous system.



510

The association between low grade inflammation and skin diseases.**A cross-sectional survey in the Northern Finland Birth Cohort 1966**

S Sinikumpu¹, L Huilaja¹, J Jokalainen², J Auvinen², K Puukka³, A Ruokonen³, M Timonen² and K Tasanen¹ ¹ Department of Dermatology, PEDEGO, University of Oulu, Medical Research Center Oulu, Oulu University Hospital, Oulu, Finland, ² Center for Life Course Health Research, Faculty of medicine University of Oulu and Oulu University Hospital, Oulu, Finland, Oulu, Finland and ³ NordLab Oulu, Medical Research Center Oulu, Oulu University Hospital and Department of Clinical Chemistry, University of Oulu, Finland, Oulu, Finland

Low grade inflammation is associated with many noncommunicable diseases. The association between skin diseases in general and systemic inflammation has not previously been studied at the population level. A whole-body investigation on 1,930 adults belonging to Northern Finland Birth Cohort 1966 was performed and high sensitive C-reactive protein (CRP) level was measured as a marker of low grade inflammation in order to determine the association between low grade inflammation and skin diseases in an unselected adult population. After adjustment for confounding factors the following skin disorders were associated with low grade inflammation in multinomial logistic regression analysis: atopic eczema (OR 2.2, 95% CI 1.2-3.9), onychomycosis (OR 2.0, 1.2-3.2) and rosacea (OR 1.7, 1.1-2.5). After additionally adjusting for body mass index, the risks for atopic eczema (OR 2.4, 1.3-4.6) and onychomycosis (OR 1.9, 1.1-2.0) remained statistically significant. In conclusion, low grade inflammation is present in several skin diseases.



511

Association of metabolic syndrome with psoriasis vulgaris: A case control

S Bhargava, K Varma and H Sharma *Dermatology, R.D.Gardi Medical College, Ujjain, India*

Psoriasis is a common, chronic, inflammatory, immune mediated, genetically determined skin disorder, the course of which is affected by multiple environmental factors. Psoriasis is associated with metabolic syndrome and its components, such as obesity, diabetes and hypertension independent of traditional risk factors for these disorders. These phenotypically diverse conditions share similar pathologic changes, selected susceptibility genes and loci. Aim: To assess the association of Metabolic syndrome in patients of psoriasis vulgaris. Objectives: 1. To select clinically diagnosed cases of psoriasis vulgaris. 2. To study and evaluate the profile of psoriasis vulgaris patients. 3. To compare the cases with age and sex matched control groups. 4. To study the association of psoriasis vulgaris with metabolic syndrome. Study Design: Case Control study (200 cases and 200 controls). RESULTS: In our present study Metabolic Syndrome was present in 52(26%) of psoriatic cases in comparison to 20(10%) non psoriatic cases which came out to be statistically significant. Conclusion: There is possible association of metabolic syndrome with psoriasis.



512

The Decrease of psoriatic redness by PEMF in IL 17A-treated Keratinocytes

H Cho¹ and J Byun¹ ¹ Dongguk University Research Institute of Biotechnology, Gyeonggi-do, Korea (the Republic of) and ² Department of Dermatology, Ewha Womans University School of Medicine, Seoul, Korea (the Republic of)

Psoriasis is a long-lasting autoimmune disease. That consists of three parts, the first is abnormal keratinocyte differentiation, the second is hyperproliferation and the third is inflammatory elements influencing redness. Once pathogenic T cells have entered the skin, they become activated and release cytokines and chemokines to attract other immune cells to perpetuate the inflammatory cascade. Many kinds of chemokine "CXC" subfamily were expressed in psoriatic region. Keratinocytes play an important role in the regulation of skin immune response, responding to environmental stimuli. The IL-17 is a proinflammatory cytokine produced by activated T cells. High levels of this cytokine are associated with several chronic inflammatory disease including psoriasis. Pulsed Electromagnetic Fields (PEMFs) can provide noninvasive treatment for reducing inflammation. An anti-inflammatory mechanism of action is based on in vitro capability of PEMFs to increase the number of A_{2A} adenosine receptors in human neutrophils. In this report we identified genes expressed by IL-17A in Human Keratinocyte cell lines. When IL-17A was treated with Human Keratinocyte cell lines, Bcl-2, CXCL1, CXCL3, CXCL5 and CXCL6 were enhanced than non-treated group. After 3 days treated with IL-17A for inducing psoriatic genes, we exposed the IL-17A treated cells into PEMF during 3 ~ 6 days. Especially CXCL1 and CXCL5 were decreased by PEMF. CXCL1 and CXCL5 are proangiogenic chemokines related the psoriatic redness. And we could not find the PAR2 activation. PAR2 deactivation was dependent on NF- κ B deactivation. We investigated that PEMFs can reduce psoriatic redness of skin immune disease like psoriasis.



513

Nonbullous cutaneous pemphigoid: A systematic review

A Lamberts, J Meijer and M Jonkman *Dermatology, University Medical Center Groningen, Groningen, Netherlands*

Cutaneous pemphigoid is an autoimmune bullous disease that typically presents with tense bullae and severe itch. However, vesicles or bullae may be lacking, called nonbullous cutaneous pemphigoid. The purpose of our study is summarize the reported characteristics of nonbullous cutaneous pemphigoid. We performed a systematic search in the EMBASE and MEDLINE databases using 'nonbullous cutaneous pemphigoid' and various synonyms. Case reports and series describing nonbullous cutaneous pemphigoid were included in this study. The search identified 133 articles. After selection 39 articles were included, presenting 132 cases. Erythematous, urticarial plaques (52.3%) were most frequently reported. Papules/nodules were found in 20.5% of the cases. Mucosal involvement was reported in one case. Histopathology was commonly nonspecific. Linear depositions of IgG/C3 along the basement membrane zone by direct immunofluorescence microscopy were found in 93.2%. Indirect immunofluorescence on salt split skin was positive in 90.2%. The mean duration of symptoms before diagnosis was 22.6 months. During follow-up blisters occurred in a minority of patients (9.8%) after a mean duration of 9.6 months. In conclusion, nonbullous cutaneous pemphigoid is not rare and mostly does not evolve to bullous cutaneous pemphigoid, but mimics other pruritic skin diseases. Awareness among doctors is needed, since the doctors delay in diagnosis may be long.

