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Adjuvant immunoadsorption in severe and/or refractory bullous pemphigoid

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Immunoadsorption (IA) is increasingly used for the initial adjuvant treatment of severe pemphigus. Since the pathogenic effect of anti-BP180 antibodies in bullous pemphigoid (BP) has clearly been shown, IA appears to be rational therapeutic approach also in BP. At present, information on the use of IA in BP is limited to individual case reports and a small case series. Here, we report on 20 patients with severe or relapsed BP (13 female, 7 male, mean age 78.6 years; range 56 to 94 years) treated by adjuvant IA on 3 consecutive days in addition to tapering doses of oral prednisolone, dapsone, and lesional topical clobetasol propionate 0.05% ointment. Fifteen patients had been pretreated with topical and systemic glucocorticosteroids and immunosuppressants without satisfying success. We observed a rapid clinical response (complete remission on therapy) in 8 patients (42%) within 4 weeks after initiation of the IA protocol. Serum anti-BP180 autoantibody levels decreased by 73% and 87% within 1 and 3 months, respectively. Reversible anaemia in 8 patients was the most common adverse event, most likely attributed to concomitant dapsone. Severe adverse events occurred in 3 patients: one patient developed a cardiac decompensation after the 3rd day of IA, one patient an apoplex after the 2nd day of IA and one patient suffered from a sigma perforation several weeks after IA. This case series shows that the application of IA in patients with severe and/or therapy-refractory BP, in addition to a standard therapy regimen, is a feasible treatment option also in this elderly patient population.

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Microbiological characteristics of dermatological patients with ulcers of the lower extremities

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Treatment of ulcers of the lower extremities is challenging and complicated by many aspects. One of them is a wide variation of pathogenic bacteria, which worsens course of the disease. The aim of the current study was to determine and evaluate microbiological pattern of patients with lower extremities ulcers, treated in the department of dermatovenereology during 5 years period. A retrospective 5-year period analysis of total 429 patients of clinical and medical documentation data has been performed. Statistical analysis was carried out by the use of SPSS 22.0 software. (SPSS Inc., Chicago, USA). The results are expressed as mean ± standard error of the mean (SEM). A value of $p<0.05$ was considered statistically significant. All patients (n=429) initially were admitted to the department of dermatology due to complicated ulcers of the lower extremities. Mean age of women (51,5%) and men (48,5%) were 66,2±15,0 years and 57,2±17,2 years, respectively. Most commonly from swab tests cultivated bacteria were following: *St. aureus* 14,3%. (n=229), *Ps. aeruginosa* 10,8% (n=172) and *E. faecalis* 7,0% (n=112). Statistically relevant coherence has been determined between repeatedly hospitalised and contagious state of the ulcers with *Ps. aeruginosa* (p=0,002) and *S. marcescens* (p=0,001). Patients with diabetes had a significant correlation with growth of *M. morganii* (p<0,001), *B. fragilis* (p=0,001), *S. marcescens* (p=0,002). During 5 years period a significantly relevant increase in bacteria resistance to Gentamicin and Amoxicillin/Clavulanate has been determined (p=0,012). Ulcers of the lower extremities remains a chronic health care problem, which often is complicated by secondary infectious disease. Abundant usage of antibiotics in treatment of lower extremities ulcers increases rise and spread-out of resistant pathogenic microorganisms. Thus, the antibacterial treatment should be selected with cautious.

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Properties of TRP-regulin®, pongamia oil and hesperidin methyl chalcone on anti-redness treatment

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Rosacea is a chronic skin disorder characterized by inflammation and vascular abnormalities of the facial skin. Skin biopsies of rosacea are also characterized by an increase on the activation of the capsaicin receptor, the transient receptor potential vanilloid 1 (TRPV1). The aim of this study was to evaluate the activity of different compounds on the inflammatory and vascular responses implicated in rosacea. In one hand, we evaluated the effect of TRP-regulin® (pentylene glycol 4-t-butylcyclohexanol) on TRPV1 activation, and the effect of the association of TRP-regulin® and pongamia oil on the inflammatory response of normal human epidermal keratinocytes in a rosacea environment. On the other hand, the activity of Hesperidine Methyl Chalcone (HMC) compound was assessed to modulate vascular responses and IL-8 cytokine production after a Substance P (SP) stimulation on human skin explants. In this study, we showed that TRP-regulin® significantly inhibited TRPV1 activation by capsaicin. These experiments also showed that TRP-regulin® and pongamia oil inhibited the mRNA expression of the chemokines CXCL1 and CXCL6 and the IL8 protein production. In addition, we demonstrated a synergy of these two compounds association on the inhibition of IL8 production. Finally, in the SP stimulated-skin model, HMC significantly decreased the proportion of dilated vessels, the total vessel area and the IL8 production. Altogether these results showed that TRP-regulin®, pongamia oil and HMC compounds have complementary and very interesting soothing and anti-redness properties and could be suitable for topical adjunctive treatment in rosacea.

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Non-contact reading of patch tests utilizing infrared imaging

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Patch testing of contact allergens to diagnose allergic contact dermatitis (ACD) is a traditional, useful tool. Reading the test shows high inter-individual variation between readers. During manual reading, the morphology of each contact allergen application site is evaluated by taking erythema, infiltration, vesicles and demarcation into account. The most important decision during reading of the patch test is the distinction between allergic and irritant reactions, as this has direct implications on the diagnosis of the patient. We aimed to evaluate a new method of non-contact infrared reading of patch tests. Following from this, a possible correlation between the intensity of the reaction and the increase in temperature was sought. 14 consecutive patients with 30 positive lesions were included in our study. Independent patch test readers assessed the reactive lesions and graded them allergic (of intensity + to +++) or irritant. At the same time, a forward-looking infrared (FLIR) camera attachment for iOS was used to acquire infrared thermal images of the readings. The photos were analyzed by the FLIR ONE app. Allergic patch test reactions showed temperatures increases of $\geq 0.7°C$ compared to surrounding skin. Irritant reactions however only resulted in $\leq 0.3°C$ temperature increase. Interestingly, the amount of the temperature increase did not correlate with the clinical intensity of the reaction. Thermography in evaluating erythematous lesion in patch testing demonstrated that allergic reactions seem to generate more heat that irritant reactions. With currently available devices, workflows could be established for half-automated, non-contact reading of patch tests. camera is an easy-to-use tool that can assist the physician in making a decision in difficult cases. Further studies are needed to confirm our findings.

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Surfactant proteins in psoriasis vulgaris and lichen planus

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In this study, we aimed to investigate the surfactant proteins expression levels in psoriasis vulgaris and lichen planus. Volunteer six patients with psoriasis and six patients with lichen planus were enrolled consecutively in this study. Biopsies from each lesion and adjacent normal-appearing skin were performed. Expression and localization of the surfactant proteins in fresh tissues were studied by an immunofluorescence technique and expression of surfactant proteins was determined in skin tissues by semiquantitative RT-PCR. In all patients, weak surfactant proteins -A, -B, -D stainings were observed in epidermis in normal-appearing skin. Strong surfactant proteins -C cytoplasmic stainings were observed in all patients' normal-appearing skin. Strong cytoplasmic and nuclear surfactant proteins -A, -B, -C, -D stainings were observed in keratinocytes in lesional area of the patients with psoriasis vulgaris and lichen planus. surfactant proteins -A, B, C and D strong nuclear stainings were obtained in inflammatory cells infiltrating dermis. surfactant proteins -D mRNA expressions were significantly increased in lesional skin. The increased expression of surfactant proteins might be explained by the intense hyperproliferation and an increased number of cells. However, only surfactant proteins -D was up-regulated on the gene transcriptional level in psoriasis vulgaris and lichen planus that may play important roles in the pathophysiology of these inflammatory skin diseases.

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Antimicrobial peptides in atopic skin using tape stripping technique

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This study aims to determine the concentration of AMPs: hBD-2, hBD-3, RNase7, psoriasin and LL-37 in stratum corneum of lesional and non-lesional skin in patients with AD and healthy controls, using a minimally invasive technique. Further to evaluate the concentration and distribution of these AMPs in different depths of stratum corneum. Tape stripping was used to collect stratum corneum samples, from 9 AD patients, lesional and non-lesional skin, and 5 healthy volunteers. From each skin site, 35 consecutive tape strips were collected and pooled in groups of 5, reflecting 7 different depths of stratum corneum. ELISA analyses were performed to determine AMP concentrations in stratum corneum samples and in serum. hBD-2, hBD-3, RNase7 and psoriasin were detected in stratum corneum samples, using a minimally invasive tape stripping technique and ELISA analysis. HBD-3 was higher in AD non-lesional skin compared to healthy controls, and similar trend was observed for RNase7. AMPs were distributed evenly throughout the 35 tape strips of stratum corneum, apart from psoriasin which was primarily detected in the outermost layers. Using tape stripping technique, higher levels of hBD-3 were found in AD non-lesional skin compared to healthy skin, and several AMPs were found expressed evenly throughout the depth of stratum corneum.