
## 3 marca 2018 roku, Warszawa

## ORGANIZATOR

## Studenckie Koło Naukowe
## przy Katedrze i Klinice Dermatologicznej
## Warszawskiego Uniwersytetu Medycznego

## SZANOWNI PAŃSTWO,
## SZANOWNI CZYTELNICY „FORUM DERMATOLOGICUM",
## DROGIE KOLEŻANKI I KOLEDZY,

z wielką przyjemnością możemy Państwu zaprezentować streszczenia i tematykę prac prezentowanych podczas tegorocznej, IV już edycji Ogólnopolskiej Konferencji Naukowej organizowanej przez Studenckie Koło Naukowe Kliniki Dermatologicznej Warszawskiego Uniwersytetu Medycznego, która odbędzie się 3 marca w Warszawie na terenie naszej kliniki, przy ul. Koszykowej 82a.

Możliwość dotarcia do tak szerokiego odbiorcy oraz opublikowanie streszczeń w „Forum Dermatologicum" było możliwe dzięki wydawnictwu Via Medica. Pragniemy szczerze podziękować za ten gest i wyjście naprzeciw pragnieniom przyszłych i młodych lekarzy zainteresowanych odkrywaniem dermatologii, piękna medycyny i jej interdyscyplinarności.

Konferencja „Interdyscyplinarne Aspekty Chorób Skóry i Błon Śluzowych", powstała w celu wymiany wzajemnych doświadczeń dotyczących objawów dermatologicznych w rożnych dziedzinach medycyny. Ku naszej radości konferencja cieszy się coraz większym zainteresowaniem, co świadczy o wspólnej potrzebie jej współtworzenia przez studentów i lekarzy różnych specjalności. Otrzymaliśmy ponad sto prac z różnych klinik i ośrodków naukowych z całej Polski. Ten fakt wskazuje na duże zainteresowanie zagadnieniami związanymi z dermatologią oraz prawidłową interpretacją zmian skórnych w codziennej praktyce lekarzy wielu specjalności.

Nie budzi wątpliwości, że obecna medycyna opiera się na specjalistycznej współpracy interdyscyplinarnej. Naukowcy przekuwają swoje odkrycia na grunt medycyny klinicznej, a klinicyści poszukują odpowiedzi na swoje pytania w badaniach naukowych. Wzajemna wymiana doświadczeń i poszukiwanie odpowiedzi na kolejne pytania tworzą wzajemną płaszczyznę porozumienia i rozwoju nauk biologicznych i medycznych. To właśnie dzięki ludziom młodym, dociekliwym, zmotywowanym i ciekawym odkryć, kształtuje się medycyna teraźniejszości, a rodzi przyszłości. Wyrażamy nadzieję, że taką możliwość daje między innymi nasza konferencja o zasięgu interdyscyplinarnym i ogólnopolskim, a przynajmniej takie jest jej zamierzenie.

Naszą konferencję patronatem objęli najznamienitsi lekarze z Warszawskiego Uniwersytetu Medycznego, Polskiego Towarzystwa Dermatologicznego i Izb Lekarskich, a współtworzą lekarze z całej Polski, co bardzo nas cieszy i motywuje do dalszego działania.

W imieniu organizatorów, studentów i lekarzy, serdecznie zapraszam do zaszczycenia nas swoją obecnością 3 marca w naszej Klinice Dermatologicznej w Warszawie lub zapoznania się z tematyką poruszanych zagadnień na stronach „Forum Dermatologicum".

Wyrażamy nadzieję, że tegoroczne zagadnienia zapoczątkują inspirujące dyskusje, zrodzą nowe pomysły i zaowocują współpracą na przyszłych interdyscyplinarnych konferencjach naukowych.

*Z wyrazami szacunku*

*Joanna Czuwara*

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# ORIGINAL RESEARCH — ORAL SESSION

## SODIUM BUTYRATE — A NEW THERAPEUTIC STRATEGY FOR PSORIASIS?

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**Introduction:** Recently it has been shown that butyrate, a bacterial product from the fermentation of fiber in the colon, is involved in protection against colonic inflammation. GPR109A/HCA2 and GPR43 are the best-known receptors for butyrate. The signaling of both promotes anti-inflammatory properties in colonic macrophages and dendritic cells and enables them to induce differentiation of IL-10 producing regulatory T cells (Treg). Skin autoimmune and chronic inflammatory diseases e.g. psoriasis are driven by dysregulated Treg responses. Since stimulation of GPRs is necessary for homeostasis in the gut and their deficiency enhances susceptibility to colitis, we asked whether a similar pattern can be found in psoriasis.
**Aim of the study:** To compare the expression of GPR109A/HCA2 and GPR43 and its induction upon butyrate treatment in the healthy and psoriatic skin.
**Materials and methods:** Biopsies from the lesional and non-lesional skin of 6 psoriatic patients and 6 healthy controls were analyzed for the expression of both receptors using immunofluorescence microscopy. Then biopsies from psoriatic and healthy skin were stimulated with sodium butyrate for 24 hours or left untreated. Afterward, immunofluorescence analysis was performed.
**Results:** The expression of GPR109A/HCA2 and GPR43 was significantly reduced in lesional skin in comparison to healthy control skin. The expression of both receptors in the non-lesional psoriatic skin was also decreased but to a lesser extent. Immunofluorescence analysis revealed a significant upregulation of both GPRs upon butyrate treatment.
**Conclusions:** The role of sodium butyrate as an agonist of GPRs and potential inducer of Treg in inflammatory skin diseases may allow the development of new therapeutic strategies for psoriasis.

## MCR LIGANDS ARE POTENTIAL PSORIASIS ENHANCERS

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**Introduction:** Physiology of skin and immune system seems to be tightly connected be only fairly discovered, especially in the appearance of high-end analysis modalities. Last updates suggest role of melanocortin receptors (MCR) in crosstalk between keratinocytes and macrophages. Macrophages are confirmed instigators of immune response in psoriasis. MCR ligands may act as transducers of signal from skin to hypophysis and vice versa.
**Aim of the study:** We wanted to investigate the possible relation between psoriasis severity and plasma concentration of two main MCR agonist (Agouti Related Protein AGRP, alpha Melanocyte-Stimulating Hormones alphaMSH).
**Materials and methods:** In these cross-sectional study group, 44 patients were included. Patients were admitted to our clinic due to psoriasis exacerbation and examined after 24h rest and standard diet. Demographical and biometric information were collected through standardized Case Report Form. Plasma samples were analyzed using EIA.
**Results:** During performing EIA test four samples act abnormally both in AGRP and MSH test. We didn't observe statistically significant correlation between psoriasis severity. In study group power of Pearson correlation r = 0.45 was approximated for 0.9. Four patients AGRP levels were significantly higher with MSH normal levels, which was analyzed in case series fashion.
**Conclusions:** There is no strong association between MCR ligands and psoriasis severity in general group. There is weak evidence AGRP concentration change throughout course of psoriasis, which has to be challenged in a longitudinal study.

## IS THE IMPAIRED BALANCE IN THE HPA AXIS THE CLUE OF PSORIASIS PATHOGENESIS?

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**Introduction:** The association of endocrine system, especially the hypothalamic-pituitary-adrenal (HPA) axis with psoriasis is nowadays the topic of research. The discovery of the skin analog of HPA axis led us to understand the psoriatic skin response to stress. In 2017 Hannen et al. showed the steroidogenesis is impaired in psoriasis lesion and non-lesional skin. Whether this is a starting disturbance or the effect of the global HPA axis dysfunction is not known.
**Aim of the study:** The aim was to test whether severity of psoriasis is related to ACTH/cortisol index, as a marker of HPA axis function.
**Materials and methods:** The study consisted of 40 patients with psoriasis (12 women/28 men) after written informed consent. Severity of disease was assessed by PASI, BSA and DLQI. The concentrations of serum ACTH, cortisol and other basic laboratory tests were measured. Body composition parameters were measured.
**Results:** The prevalence of mild psoriasis was in (PASI < 12) 6 cases, moderate (12 < PASI < 30) 22 cases and severe (PASI > 30) 12. We found the positive correlation between ACTH/COR with PASI (p = 0.0487), and negative correlation with Age (p = 0.0254). There was no significant correlation between the ACTH/COR and bioimpedance results.
**Conclusions:** Our analysis shows the relation between the balance in HPA axis and the PASI, which indicates that not only skin-derived HPA axis is affected. Further natural step in appearance of these evidence are longitudinal studies in risk group of psoriasis, revealing if changes are primary or secondary.

## OBESITY AND PSORIASIS: ARE ADIPOKINES THE LINK?

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**Introduction:** Adipose tissue is an active endocrine organ which regulates multiple metabolic pathways via self-produced adipokines. These molecules are suspected for pathogenesis of metabolic syndrome and cardiovascular diseases. Co-occurrence of these two with psoriasis rise a question how they interact and whether adipokines may be a connecting link.
**Aim of the study:** The aim of the study was to assess adipokines levels and metabolic parameters in psoriatic patients.
**Materials and methods:** The study consisted of 43 patients with psoriasis (11 women/32 men) after written informed consent. Psoriasis severity was assessed by DLQI, PASI and BSA score. The concentrations of serum: chemerin, visfatin, adiponectin, leptin, resistin and RBP-4, total cholesterol (TChol), high-density lipoprotein (HDL), low-density lipoprotein (LDL) and hsCRP protein were measured. Body composition parameters (BMI, WHR) were measured.
**Results:** The prevalence of mild psoriasis was (PASI < 12) 13 cases, moderate (12 < PASI < 30) 24 cases and severe (PASI > 30) 6. The incidence of overweight was 31.8% and obesity 45.5%. There was no correlation between PASI, BSA a serum adipokines levels. We found a significant correlation between PASI and hsCRP (p = 0.024); chemerin and WHR

(p = 0.045), hsCRP (p < 0.0001), TChol (p = 0.010), HDL (p = 0.001), LDL (p = 0.020). TChol correlated with BSA score (p = 0.016) and with resistin (p = 0.040).
**Conclusions:** Our study did not directly show the relationship between adipokines and psoriasis. But due to limitations of our study (most patients obese or overweight), we cannot say that this interaction does not exist, as epidemiologic data underline the interplay. Further studies are needed to deeply understand the role of adipokines in psoriasis.

## INFLUENCE OF BMI ON SEVERITY OF ACNE LESIONS

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**Introduction:** Acne tends to be chronic, refractory to treatment and associated with psychosocial problems and depressive disorders. So far scientific literature has reported that higher BMI is a risk factor for more severe acne.
**Aim of the study:** The aim of this study was to investigate the influence of BMI on the severity of acne lesions in men and women between 17 and 31 years of age.
**Materials and methods:** 1695 women and 484 men between 17 and 31 years of age with varied intensification of acne lesions were enrolled in this study. The data was collected through anonymous online questionnaire. The participants were shown 12 photos from *The Leeds Revised Acne Grading System,* picturing different degrees of acne severity on the face. The participants were supposed to choose one photo picturing current condition of their complexion.
**Results:** Spearman's rank correlation coefficient revealed that BMI is negatively correlated with the severity of acne lesions in women at the age exceeding 18 years old (R = -0.066; p = 0.0101). On the other hand, Kendall's rank correlation coefficient proved that among women at the age of 17 the correlation is positive (T = 0.101; p = 0.0327). In men we did not notice any statistically significant connection between BMI, age and severity of the acne lesions.
**Conclusions:** Initial findings indicate that higher BMI is protective factor against acne in mature women. On the other hand, in women younger than 18, higher BMI is a significant risk factor for more severe acne lesions.

## DERMATOLOGICAL SIGNS OF SEXUAL FUNCTION DISORDERS IN WOMEN WITH THE FUNCTIONAL HYPERANDROGENIC SYNDROME

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**Introduction:** The functional hyperandrogenic syndrome is one of the most common disorders found in patients of gynecological endocrinology, in which patients suffer from excessive secretion of androgens resulting in masculinization, defeminization and metabolic disorders. Moreover, it includes disorders of sexual function, but so far there has been no thorough research about its correlation to the clinical picture and laboratory findings.
**Aim of the study:** The aim of the study was to compare sexual function using female sexual function index (FSFI) questionnaire in women with the functional hyperandrogenic syndrome (FHS): polycystic ovary syndrome (PCOS), congenital adrenal hyperplasia (CAH) considering clinical versus laboratory findings, with the sexual function of healthy controls.
**Materials and methods:** The study included 73 women aged 18–40 years with functional hyperandrogenic syndrome: 56 with PCOS, 17 with congenital adrenal hyperplasia and 20 healthy controls. All participants completed Female Sexual Function Index (FSFI) questionnaire assessing sexual function in the domains of desire, arousal, lubrication, orgasm, satisfaction and pain. Additionally, clinical laboratory assessment was performed in all patients.
**Results:** Study results indicate that patients with PCOS show to have the highest quality of sexual functions in comparison to women suffering from CAH and control group. Authors found that sexual function quality index is highly correlated with the levels of specific androgens.
**Conclusions:** Dermatological signs of the functional hyperandrogenic syndrome are in close correlation with sexual function. It is essential for a physician to recognize these signs and direct patients not only to a dermatologist, endocrinologist but also to a sexologist.

## EVALUATION OF MMP-1, MMP-2 AND TIMP-1 CONCENTRATIONS IN THE COURSE OF AD

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**Introduction:** MMPs are important elements conditioning the integrity of skin cells, and determination of the speed of matrix components synthesis and the speed of its components degradation is crucial for the correct condition of epidermal barrier in the course of atopic dermatitis.
**Aim of the study:** Evaluation of MMP-1, MMP-2 and TIMP-1 concentrations taking into consideration parameters of epidermal barrier in the course of AD.
**Materials and methods:** The study involved a group of 43 people suffering from AD and a control group of 22 people. The test was carried out by marking the TEWL value using the Tewameter TM 300 and by marking the skin's hydration level using the Corneometer CM 825. The concentration measurement of MMP-1, MMP-2, TIMP-1 in blood serum was carried out using the enzyme-linked immunosorbent assay.
**Results:** Average concentration values of MMP-1 in blood serum were 1278.77 ± 666.71 SD [pg/ml] in patients suffering from AD and 911.51 ± 662.7 SD in the control group. In the examined group an average MMP-2 concentration was 1312.58 ± 3901.15 SD, and 85.09 ± 202.78 SD in the control group. TIMP-1 concentration was higher in patients suffering from AD and its level was 568.88 ± 462.19 SD. Patients suffering from AD obtained the TEWL statistically significantly lower in the area of changed skin and 2 cm away from the atopic changes when the TIMP concentration is higher than MMP-1 concentration (Mann-Whitney test, Z = 1.624, p < 0.05).
**Conclusions:** Predominance of TIMP-1 over MMP-1 reduces TEWL and maintains correct hydration of the epidermis.

## QUALITY OF LIFE AND EXPECTATIONS OF PARENTS OF CHILDREN WITH ATOPIC DERMATITIS — PRELIMINARY RESULTS

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**Introduction:** Atopic dermatitis (AD) is a common chronic skin disease in children. It has a huge impact on the quality of life of patients and their families, particularly due to its chronic and relapsing history.
**Aim of the study:** To evaluate the impact of AD on family quality of life and to determine major problems in therapy and parents' expectations of doctors.
**Materials and methods:** The study included 30 children (divided into two groups: 0–4 and 4–18 years old) with AD. The patients and their parents completed Dermatitis Family Impact Questionnaire, Children's Dermatology Life Quality Index or Infant's Dermatitis Quality of Life Index and specially created Preliminary Survey of Parents of Children with Atopic Dermatitis Expectations.
**Results:** The authors observed that there was a statistically significant correlation between the infants' quality of life and family functioning (r = 0.744) as well as between the children's quality of life and family functioning (r = 0.565). According to the survey, 47% of the parents were not satisfied with the amount of information about the disease that they received from doctors. The most frequent problems in therapy were costs, dirty clothing and time-consuming treatment. For almost two-thirds of patients and parents the only source of knowledge about

AD was their doctor. However, 60% of them found the information on the Internet.
**Conclusions:** To conclude, AD has a great impact on sufferers and their family life. There is a necessity to provide patients' parents with sufficient amount of information about the disease via qualified personnel.

## PHOTOTOXIC AND PHOTOALLERGIC SKIN REACTIONS — RESULTS OF A SINGLE-CENTER RETROSPECTIVE STUDY

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**Introduction:** Phototoxic and photoallergic skin reactions are classified as exogenous photodermatoses, induced by an interaction between topical or systemic sensitizer and exposure to ultraviolet radiation (UVR). Drugs, plants, dyes, fragrances or even sunscreen chemicals can act as photosensitizers. Among all patients with photosensitivity, phototoxic eczema occurs in 8% and photoallergic eczema in 7%.
**Aim of the study:** The aim of the study was to determine the most common photosensitizers.
**Materials and methods:** The study is based on a retrospective review from 2009 to 2013 of data extracted from the medical records of Department of Dermatology, Medical University of Warsaw. A total of 66 patients suspected of photosensitivity underwent photopatch tests with 38 photosensitizers. The reactions were scored using the International Contact Dermatitis Research Group visual scoring system. The mean age of patients was 50.40 of 66 patients were women. UVB and UVA phototests were performed as well.
**Results:** 41 out of 66 patients (62.12%) presented hypersensitivity to UVB radiation, and 6 (9.09%) presented hypersensitivity to UVA radiation. Positive photopatch test reactions to one or more chemicals were detected in 49 patients (74%). The most common photosensitizers were coal tar — 31 patients (63%), peru balsam — 13 patients (26.5%) and nickel — 12 patients (24.5%).
**Conclusions:** Photopatch testing remains an integral part and gold standard for the work-up of the photosensitive patients.

## REVIEW OF PHARMACOLOGICAL INTERVENTIONS IN SELF-INFLICTED SKIN DISEASES

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**Introduction:** Self-inflicted skin diseases (SISD) are the group of psychodermatoses belonging to the group of simulated disorders. Skin lesions are the result of a patient's activity aimed at getting someone's attention or care. During the diagnostic process patients visit many physicians of various specialties, perform numerous diagnostic tests, and apply many medications, mostly unsuccessfully.
**Aim of the study:** Presentation of pharmacological interventions used in patients with SISD.
**Materials and methods:** During a one-year period (2016–2017) patients diagnosed as SISD, seen in the Department of Dermatology, Venereology and Allergology Medical University of Gdańsk, were recorded. Each patient was given a detailed interview about the diagnostic procedures and drugs used so far.
**Results:** Eleven patients were selected: 9 women and 3 men, mean age was 51 years. 100% patient was treated with local antibiotics and 45% were used oral antibiotics. In 82% patients local glicocortycosteroids were used. 18% were treated with arechin. 1 patient used Wilkinson ointment. Antifungal local drugs were used in 33% patients. In 100% of patients, no clinical improvement was observed during any of the treatments. Psychological support was offered to 100% of the patients and was accepted by 45%.
**Conclusions:** Each of the patients with SISD before the diagnosis is treated with many pharmaceuticals. After establishing the diagnosis, the patient's cooperation with the dermatologist, psychiatrist and psychotherapist is necessary in the therapeutic process.

## TUMOR-ASSOCIATED ANTIGENS IN SYSTEMIC SCLEROSIS

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**Introduction:** Tumor-associated antigens are a group of proteins usually restricted to tumor cells although they may also be expressed on normal cells as well as on inflammatory cells. Recent data indicate that the production of these antigens may be increased in autoimmune diseases such as systemic sclerosis.
**Aim of the study:** Retrospective analysis of patients with systemic sclerosis in whom at least one tumor-associated antigen was assessed.
**Materials and methods:** We reviewed clinical files of 51 patients with systemic sclerosis both localized and diffuse (43 [84.31%] and 8 [15.69%], respectively) hospitalized in 2005–2017. Median age was 66 (range: 37–88). In all patients, at least one tumor-associated antigen, including CA 125, HE4, CA 19-9, CEA, CA 15-3, AFP and CA 72-4, was assessed.
**Results:** The most commonly assessed tumor-associated antigens were: CA 125, CA 15-3, CEA — assessed in 48 (94.12%) patients. CA 19-9, AFP, HE4, CA 72-4 were evaluated respectively in 47 (92.16%), 38 (74.51%), 29 (56.86%), and 10 (19.61%) patients. 27 patients (52.94%) had increased levels of minimum one antigen — 21 (77.78%) with localized and 6 (22.22%) with diffuse scleroderma. In all cases antigen levels were assessed to monitor the immunosuppressive therapy and to exclude malignant process.
**Conclusions:** Our study demonstrated that levels of tumor-associated antigens were increased in some patients with systemic sclerosis. Monitoring of tumor-associated antigens in systemic sclerosis enhances the safety of long immunosuppressive therapy and enables fast diagnosis of malignant condition. Further research could determine the relevance of tumor-associated antigens in systemic sclerosis.

## THE ROLE OF DERMOSCOPY IN THE DIAGNOSIS OF LICHEN SCLEROSUS AND LICHEN PLANUS OF THE VULVA

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**Trustee of the paper:** Marek Opala

**Introduction:** Numerous skin disorders can be located in the region of the female genital organs. It is necessary to make the correct diagnosis and to choose a proper treatment. Lichen sclerosus is skin disorder with symptoms like pruritic, burnings, soreness, dyspareunia and signs like hyperkeratosis, erosions, fissures. Lichen planus occur with very similar symptoms and that's why clinical lesion is not always characteristic for just one of this skin disorder.
**Aim of the study:** The aim of the study is to explore the role of dermoscopy in identification of lichen sclerosus and lichen planus of the vulva.
**Materials and methods:** Study analyzed 10 clinical cases with histopathologically confirmed lichen sclerosus or lichen planus of the vulva. Evaluation of specific patterns was performed with the use of images from the dermoscopy assay.
**Results:** The most common dermoscopy findings of lichen sclerosus are: white to yellowish structureless areas, ice-like patches, white dots, irregular vessels. The most common dermoscopy findings of lichen planus are white scaling patches, reddish areas, irregular vessels.
**Conclusions:** Dermoscopy may serve as a rapid non-invasive method for the preliminary diagnosis of lichen sclerosus and lichen planus of the vulva.

## CLINICAL PROFILE OF 45 PATIENTS WITH VULVAR LICHEN SCLEROSUS

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**Introduction:** Lichen sclerosus (LS) is a chronic, immune-mediated dermatosis, occurring mainly in women, with a predilection for the

anogenital region. Due to the lack of clinical data, there is a necessity to study etiology, pathogenesis and optimal therapy of LS.
**Aim of the study:** The aim of the study was to analyze clinical features and therapy of vulvar lichen sclerosus.
**Materials and methods:** In this retrospective study medical records of 45 women were analyzed. The study group included patients with biopsy-proven vulvar lichen sclerosus who were admitted to tertiary referral hospital in Warsaw (Poland) between 2014 and 2017. We have analyzed the data concerning patients' symptoms, potential risk factors and current therapy.
**Results:** The mean age of the patients was 57 years old (SD = 14). The proportion of premenopausal to postmenopausal patients was 26.2% to 73.8% (11 to 31). The chief complaint was vulvar pruritus (n = 35, 83.3%). The lesions were most frequently localized on the labia maiora (n = 16, 35.6%) and the frenulum of labia minora (n = 10, 22.2%). No statistically important differences were found between premenopausal and postmenopausal women concerning the dominant symptom (p = 0.381) and the main localization of lesions (p = 0.465). The majority of the patients (n = 32) were treated with topical steroids, including hydrocortisone (n = 21, 52.5%), clobetasol (n = 21, 52.5%) and betamethasone (n = 5, 12.8%) and all treated patients reached good clinical response.
**Conclusions:** Whereas vulvar pruritus remains the most common symptom of vulvar lichen sclerosus, the dominant localization of the lesions cannot be easily determined. Topical corticosteroids are a beneficial treatment for LS. However, further research is needed.

## INFLAMMATORY SKIN CHANGES OF THE FOREHEAD — RETROSPECTIVE ANALYSIS

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**Introduction:** The most common skin changes on the face are skin neoplasms. However, many inflammatory dermatoses may also occur on face, particularly on the forehead.
**Aim of the study:** The aim of the study was to assess the frequency of non-cancerous skin changes biopsied from the forehead. To our knowledge, no previous studies in this field have been reported.
**Materials and methods:** Records from biopsies taken in our department in years 2010–2016 were analyzed. The following information were incorporated: age of patients, sex, preliminary diagnosis, concomitant skin changes, duration of disease and histopathological diagnosis. Inclusion criteria were: biopsies taken from the frontal area and final diagnosis of inflammatory lesion. Biopsies from skin cancer were excluded.
**Results:** Amidst 440 biopsies obtained from the forehead, only 44 met the criteria (10%). 50% of the patients constitute women. Mean age of the group was 61.92 years. The most frequent preliminary diagnosis was sarcoidosis. 7 patients presented concomitant skin changes in other location. Mean disease duration time was 1.18 year. The most frequent histopathological findings were inverted follicular keratosis (26.67%), acne rosacea (8.89%), atheroma (6.67%), granuloma faciale (6.67%), lupus erythematosus (6.67%) and sarcoidosis (6.67%).
**Conclusions:** There are many different inflammatory diseases on the face, forehead in particular. They can be purely dermal, follicular or dermo-epidermal as it is in lupus erythematosus. Dermatopathologist after excluding skin malignancy should take into account several dermatoses. The most typical one such as atopic dermatitis, seborrheic dermatitis are not biopsied as a rule by dermatologists.

## INTRATUMOR GENETIC HETEROGENEITY IN PRIMARY CUTANEOUS MELANOMA — ANALYSIS OF THE VARIABILITY OF THE MOST COMMON MUTATIONS

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**Introduction:** Melanoma tumors are the most heterogeneous of all cancer. Tumor heterogeneity results in difficulties in diagnosis and is a frequent cause of failure in treatment. Novel techniques enable accurate examination of the tumor cells, taking into account their heterogeneity.
**Aim of the study:** To study the somatic variation among highly and low proliferating compartments of melanoma tumors.
**Materials and methods:** 10 archival FFPE samples of primary cutaneous melanoma were stained with Ki-67 antibody. Highly and low proliferating compartments were dissected using Laser Capture Microdissection. DNA was isolated and analyzed quantitatively and qualitatively. Using NEB Next Direct Cancer HotSpot Panel libraries were prepared.
**Results:** Sufficient amount of material for amplicon-based NGS analysis was obtained. Preliminary analysis showed significant differences between highly and low proliferating compartments. Mutations which extended in different percentage in both compartments (i.e. mutation in KDR, NPM1, FLT3, TP53) as well as mutations which were presented just in one compartment (i.e. BRAF, CDKN2A, ERBB4, KDR, PDGFRA, SMAD4, STK11) were noted. Moreover, three novel mutations (undescribed in COSMIC) with impact the melanoma biology were reported.
**Conclusions:** Results will be used to assess the degree of spatial intratumor heterogeneity in the context of the proliferation index. This can revise the eligibility criteria for personalized therapies.

## VITAMIN D METABOLISM AND EXPRESSION OF ITS RECEPTORS IN MUCOUS MEMBRANE OF THE UPPER RESPIRATORY TRACT?

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**Introduction:** Vitamin D has recently gained a lot of attention due to numerous studies that reveal its possible link to various diseases of the skin and mucous membranes, for example psoriasis vulgaris, systemic lupus erythematosus and atopic dermatitis. In this study, we wanted to evaluate its action in sinonasal mucosa epithelial cells and possible impact on inflammatory process that occurs in chronic rhinosinusitis.
**Aim of the study:** We aimed to study the expression of the Vitamin D receptor (VDR) and CYP27B1, 1alpha-hydroxylase which converts calcifediol into calcitriol, in sinonasal mucosa epithelial cells and analyze its potential changes in patients with chronic rhinosinusitis comparing to healthy controls.
**Materials and methods:** VDR and CYP27B1 expression in 15 CRS without nasal polyps (CRSsNP), 15 CRS with nasal polyps (CRSwNP) and 15 control samples was assessed by immunohistochemistry. Tissue was gathered from the ostiomeatal complex.
**Results:** The VDR and CYP27B1 were expressed in sinonasal mucosa epithelial cells. We found that the level of VDR expression was statistically significantly diminished in CRS patients than in controls. No statistically significant difference between CYP27B1 expression was found in studied groups.
**Conclusions:** Sinonasal mucosa epithelial cells express VDR and have the capacity to synthesize the active form of vitamin D3. The differences in VDR expression between CRS patients and healthy controls indicate that vitamin D3 and VDR may be engaged in the pathogenesis of CRS.

# CASE REPORTS — ORAL SESSION

## LOW-LEVEL LASER THERAPY IN RECURRENT APHTHOUS STOMATITIS TREATMENT

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**Introduction:** Recurrent aphthous stomatitis (RAS) is a painful inflammatory process of the oral mucosa that may affect 10 to 30% of the population with unknown etiopathogenesis and numerous predisposing factors. Treatment of RAS may be very challenging and includes topical, systemic or light therapy to reduce the pain and inflammation. Low-level laser therapy (LLLT) is a non-invasive and atraumatic therapeutic method that involves local application of a high-density monochromatic narrow--band light source.
**Material and methods:** A 25-year-old healthy woman was admitted to the Oral Pathology Clinic presenting two major aphthous ulcers on tonsil and palatoglossal arch. The patient referred stress and tiredness as a reason of lesions appearance. The treatment of previous lesions was coating ointment and policresulen application which was not satisfactory. LLLT using a diode laser with 635 nm wavelength and 100 mW power was administered 3 times on first, third and fourth day of the therapy. A control CBC test showed no abnormalities. After first session ulcers were less painful and the process of healing was visibly initiated. After three sessions lesions were painless and patient refers faster healing than previous ulcers.
**Conclusions:** Low-level laser therapy may be considered as an effective and non-invasive method of promotion aphthous ulcers healing in patients with RAS.

## CLINICAL, DERMOSCOPIC AND HISTOLOGICAL FEATURES OF MELANOCYTIC TUMORS OF UNCERTAIN MALIGNANT POTENTIAL — CASE SERIES

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**Introduction:** Histopathological evaluation of melanocytic lesions is based on tissue architecture as well as on morphological features of particular cells. Most melanocytic lesions may be classified as benign or malignant. Nevertheless, in this spectrum there are some cases representing ambiguous and often heterogenic histopathological picture, which are classified as melanocytic tumors of uncertain malignant potential (MELTUMP).
**Material and methods:** We report 10 cases (2 male, 8 female) of MELTUMP with clinical, dermoscopic and histopathological presentation diagnosed and treated surgically at Department of Dermatology, Venerology and Allergology Medical University of Gdańsk.
**Conclusions:** The scientific data concerning dermoscopic presentation of MELTUMP are scarce. In the presented case series most lesions revealed suspicious clinical and dermoscopic features. Literature data shows that prognosis in patient with MELTUMP is, in most cases, favorable. Based on the latest expert recommendations wide excision of the lesion is recommended, together with 6-month follow-up and ultrasound examination of regional lymph nodes.

## SOLAR LENTIGO, MELANOCYTIC NEVUS, SEBORRHEIC KERATOSIS ON PATIENT'S BACK? SUSPICIOUS LESION — WHICH FEATURES SHOULD BE TAKEN INTO CONSIDERATION IN DERMATOSCOPY?

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**Introduction:** Dermatoscopy is a non-invasive skin and mucous membranes examination method of melanoma. The most common melanoma findings in dermatoscopy include: an atypical pigmented network, asymmetry and blue-whitish veil. Lesions that do not meet these criteria and being melanoma, are the most difficult for diagnosis.
**Material and methods:** 51-year-old woman with skin phototype II with one melanoma removed a year before, referred to our clinic for dermatoscopy examination of her melanocytic lesions. The patient had a history of repetitive sunburns in her youth and many solar lentigo on her back. The scar after melanoma was present in the interscapular area. On dermatoscopy, an irregularly pigmented lesion few centimeters above the scar was noticed. Clinically the lesion did not seem suspicious. Due to melanoma history and dermatoscopy image which showed that lesion had irregular pigment network, pigment concentration on the edge forming streaks, some homogeneous grey color in the center which were suspicious, but not suggestive of melanoma, was directed for a diagnostic biopsy. Differential diagnosis included seborrheic keratosis, solar lentigo, atypical melanocytic nevus and finally the combination of the above, collision tumor. Histopathological examination revealed melanoma in situ developing in the preexisting nevus. The rest of the lesion was totally removed showing hyperplasia of atypical melanocytes without residual melanoma which is an indication of melanocytic activation in this patient. Patient remains under regular thorough dermatoscopic assessment.
**Conclusions:** Dermatoscopy is a very valuable diagnostic method, but histopathological examination decides about the final diagnosis. Therefore, careful examination of pigmented and non-pigmented lesions in dermatoscopy by experienced doctors is recommended. If any atypical features are noticeable, it is advisable to perform a biopsy to exclude their malignant character.

## AMELANOTIC MELANOMA. WHAT FEATURES SHOULD YOU BE CONCERNED ABOUT?

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**Introduction:** Cutaneous melanoma has been one of the most rapidly increasing cancers worldwide over the last decades. It is characterized by very early metastases, so it is important to diagnose melanoma in early stages. Amelanotic melanoma represents an atypical form of melanoma presentation. Amelanotic melanoma may present as a frequently eroded exophytic nodule mimicking a pyogenic granuloma or haemangioma leading to delayed diagnosis. The ABCDE classic is no longer appropriable in this case.
**Material and methods:** A 30-year-old pregnant female with several weeks history of red nodules on the left arm. Firstly, wrongly diagnosed as granuloma teleangiectodes. Dermoscopy revealed linear-irregular vessels, milky-red areas and globules. The histopathological examination confirmed the diagnosis of melanoma pT3a. The second patient is

a 41-year-old man with erythematous macula on the top of lower limb. Dermoscopy showed dotted vessels, glomerular vessels and pigment remnants. Pigmented Bowen disease or amelanotic melanoma was suspected. Excision biopsy was performed, and histopathological examination confirmed the diagnosis of the amelanotic melanoma pT1a.
**Conclusions:** The amelanotic melanoma is extremely rare and it is difficult to distinguish it from other malignant skin lesions. The urgency in the diagnosis should be a standard due to the severity and potential fatal consequences of amelanotic melanoma. Dermoscopy can be useful in early diagnosis of amelanotic melanoma but histopathological examination is a gold standard.

## NONSPECIFIC PRESENTATIONS OF BASAL CELL CARCINOMA. THE USEFULNESS OF DERMOSCOPY

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**Introduction:** Basal-cell carcinoma (BCC) is the most common skin cancer. Due to ambiguous clinical presentations, a correct diagnosis can be challenging. The aim of this study was to demonstrate four unusual BCC.
**Material and methods:** Patient 1: 60-year-old woman wrongly diagnosed with tinea faciei, consulted at Department of Dermatology due to progression of the lesions. Mycological examination was negative. Dermoscopy showed telangiectatic arborizing vessels covered with a scale. Histopathology proved infiltrative basal cell carcinoma. Patient 2: 43-year-old man consulted due to damaged ulcerated left earlobe and pre-auricular area, intensive pain and destructed left external auditory meatus. Dermoscopy showed features of both BCC and SCC. Histopathology proved infiltrative BCC with squamous changes. Patient 3: 68-year-old woman with a whitish, hard plaque lesions on her neck and scalp on the left side with arborizing atypical blood vessels was consulted. Neoplastic process was suspected including BCC or skin metastases. Histopathology proved lichen sclerosus and morphea. Patient 4: 36-year-old woman after $CO_2$ ablative laser treatment of an erythematous hard, well-circumscribed lesion with many telangiectases and atypical blood vessels in a whitish scar-like background in dermoscopy. Histopathology proved infiltrative basal cell carcinoma.
**Conclusions:** The correct diagnosis made early on, based on non-invasive imaging methods and followed by histopathology is essential for the diagnosis of unusual BCC, appropriate treatment choice and prognosis of the patient.

## DIFFERENTIAL DIAGNOSIS OF SARCOMA KAPOSI AND METASTATIC MELANOMA. THE VALUE OF THE DIAGNOSTIC BIOPSY

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**Introduction:** Kaposi sarcoma is an angioproliferative disorder which is induced by human herpesvirus 8 (HHV-8) infection. It usually presents on the skin of the upper and lower extremities. Malignant melanoma is the most aggressive skin neoplasm which develops from melanocytes. It metastasizes commonly to the other skin areas. The classic Kaposi sarcoma and skin metastases of melanoma may look clinically similar. That is why it is relevant to present a diagnostic method allowing to differentiate these two distinct processes. Similarly looking two cases would be presented.
**Material and methods:** One is an 85-year-old man with multiple purple macules and nodules on his lower extremities. Dermoscopy revealed rainbow patterns, scaling surface and lacunae. The biopsy confirmed the diagnosis of the Kaposi sarcoma. The second patient is a 79-year-old woman presenting similarly looking skin lesions but only on the right lower leg with accompanying ulceration. During examination the gray-blue and black macules, nodules were detected and also a complete dystrophy of the fifth toenail was found. In dermoscopy irregular structureless lesions with blue-whitish veil and multiple colors were observed and the Hutchinson's sign at the base of dystrophic nail plate. Biopsy taken from two small nodules allowed to make a diagnosis of in-transit metastases of melanoma coming from the nail matrix of the fifth toe.
**Conclusions:** Kaposi sarcoma and metastatic melanoma can present as similarly looking papules, nodules or plaques. The biopsy is decisive for the diagnosis. Every suspicious skin lesion should be guided for the skin biopsy and pathological examination.

## ESTRIOL AND POLICRESULEN IN THE OFF-LABEL THERAPY FOR HIGH-GRADE VAGINAL INTRAEPITHELIAL NEOPLASIA (VAIN 3)

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**Introduction:** Vaginal intraepithelial neoplasia (VaIN) is a rare and asymptomatic HPV-related precancerous lesion. It occurs as a solitary or multifocal lesion, usually located in the upper third of the vagina. VaIN coexists with other lower genital tract precancerous lesions in 30–80 % cases. It is often diagnosed using cytology, followed by colposcopy and colposcopically-directed biopsy of suspicious areas. Widely approved therapeutic options include radical surgery, brachytherapy, laser vaporization and topical 5-fluorouracil.
**Material and methods:** A 35-year-old nulliparous patient with a history of premature ovarian insufficiency (POI), cervical intraepithelial neoplasia grade 1 and infection with HPV type 31 and 45 (both high risk) is presented. Her main complaint was vaginal burning sensation and pruritus. After an abnormal cytology result (LSIL), vulvovaginoscopy was conducted, exhibiting a whitish lesion arising in the posterior vaginal fornix. The histopathological examination revealed VaIN high grade. The patient was disqualified from surgical treatment and brachytherapy. The off-label short-term topical therapy with estriol and policresulen was applied, resulting in a regression of the vaginal lesion (VaIN low grade) and resolving of the symptoms.
**Conclusions:** An abnormal cytology result should lead to an examination of vaginal portion of cervix, but also to an examination of vagina and vulva. For patients with VaIN high grade and hypergonadotropic hypogonadism, new non-invasive therapeutic options should be considered. The short-term estrogen- and policresulen-stimulated exfoliation of vaginal cells may lead to a noticeable improvement of the patient's clinical condition.

## PATIENT WITH DIFFUSE, ERYTHEMATOUS PAPULES AND TENSE BULLAE — A CASE REPORT

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**Introduction:** Lichen planus pemphigoides is a rare autoimmune blistering disease that combines typical symptoms of lichen planus with subepidermal bullae. The blisters arise on lichen planus lesions or individually on uninvolved skin. Direct immunofluorescence of the perilesional skin as well as histopathological picture of the bullae are identical to those of bullous pemphigoid.
**Material and methods:** A 49-year-old woman presented with diffuse erythematous papules and tense bullae, lasting for 7 weeks and 2 days, respectively. The lesions were localized on the trunk and limbs. The mucous membranes were not involved. Laboratory findings revealed an increased concentration of total immunoglobulin E. Direct immunofluorescence of the perilesional skin showed strong linear deposition of C3 along the basement membrane zone. Histopathology revealed the presence of interface dermatitis with apoptotic keratinocytes in basal layer of the epidermis, the presence of subepidermal bullae and superficial perivascular lymphohistiocytic inflammatory infiltrates. The patient was initially treated with oral prednisone (50 mg daily) and 0.05% clobetasol propionate ointment. Because of insufficient recovery, prednisone was withdrawn and

methotrexate at the dose of 10 mg weekly (initially subcutaneously, then orally) was used. At 5-week follow-up marked improvement was observed.
**Conclusions:** Coexistence of erythematous, small, shiny papules merging into rough, scaly plaques and tense blisters may indicate the diagnosis of lichen planus pemphigoides. The diagnosis of this condition is based on direct immunofluorescence and histopathology results. Most of the cases of disseminated disease can be successfully treated with systemic corticosteroids. In recalcitrant cases methotrexate can be effectively used.

## PEMPHIGUS SEBORRHOICUS, A RARE VARIANT OF PEMPHIGUS FOLIACEUS WITH NOSE INVOLVEMENT — CASE REPORT

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**Introduction:** Pemphigus seborrhoicus, a mild variant of pemphigus foliaceus, is an autoimmune disorder characterized by the pruritic small flaccid intraepidermal bullae, erosions, exfoliating lesions covered by yellow crust and erythema located mainly on face, upper chest and back.
**Material and methods:** A 58-year-old man was admitted to the Dermatology Clinic in July 2016 with one-year history of exfoliating erythema on his nose treated unresponsively with oral tetracycline and retinoid as rosacea. On admission he presented erythematous lesion with hyperkeratosis and edema spreading his nose and several, round, well-defined, similar lesions on his back and one round lesion on upper chest. Dermoscopy revealed multiple spiral extended blood vessels and yellow corneous plugs suggesting dyskeratosis in hair follicles. The biopsy of the back skin section, appearing similar to the one on the nose, detected acantholytic keratinocytes under the stratum corneum especially visible in infundibula of the hair follicles. Direct immunofluorescence of involved tissue was positive, indirect IF revealed circulating pemphigus antibodies reacting with the guinea pig esophagus. Pemphigus seborrhoicus was recognized and combined systemic therapy with prednisone and Imuran was started. Due to fast elevation of transaminases the treatment was changed into prednisone with methotrexate after one month. From a year now there is a progressive medical improvement.
**Conclusions:** Diagnosis of pemphigus seborrhoicus includes clinical presentation, immunofluorescence tests and histopathology. When introduced treatment is ineffective then differential diagnosis should be taken into account. In dermatology many skin disorders may look similar, occur at the same location leading to diagnostic difficulties.

## FAMILIAL PEMPHIGUS VULGARIS WITH COEXISTENCE HIDRADENITIS SUPPURATIVA — CASE REPORT AND ANALYSIS OF LITERATURE

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**Introduction:** Pemphigus vulgaris is a rare chronic autoimmune bullous disease that affects skin and mucous membranes. The presence of anti-Dsg1 and anti-Dsg3 antibodies leads to loss of connections between keratinocytes and formatting blisters. It is suspected that genetic predisposition plays an important role in the pathogenesis of disease. Only a few cases of familial PV have been published.
**Material and methods:** We report a case of a 35-year-old Greek woman with erosions in oral cavity occurring since July 2017 and with acne inversa diagnosed 20 years ago. The woman was hospitalized in the Dermatologic Clinic with exacerbation of hidradenitis suppurativa, however solitary blisters on erythematous background on forearm and chest and erosions of mucosa of the mouth were found in clinical examination. Interestingly, in family history patient's mother was diagnosed with PV at the age of 34. DIF examination of mucosal tissue and IIF confirmed the diagnosis of pemphigus vulgaris in our patient. Clindamycin and rifampicin therapy i.v. for acne inversa was initiated as well as prednisone and azathioprine therapy for pemphigus vulgaris, with improvement of HS and PV.
**Conclusions:** Familial pemphigus occurs rarely. In the literature it was postulated that there are specific HLA haplotypes predisposing for PV. Not only genetic profile plays a role in pathogenesis of pemphigus, however triggering factors remain unknown. In our case a coincidence of two autoimmune diseases with different pathogenesis, acne inversa (dysfunction of lymphocyte T) and pemphigus vulgaris (dysfunction of lymphocyte B) is remarkable, making an effective treatment really challenging.

## ACNE FULMINANS AS A RESULT OF ANDROGEN EXCESS IN A PATIENT SUFFERING FROM PREGNANCY LUTEOMA

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**Introduction:** Pregnancy luteoma is a benign neoplasm of the ovary — in most cases asymptomatic and diagnosed accidentally during Caesarean section or imaging procedure. Current literature describes less than 200 cases of this exceedingly rare disease. Very few patients present androgen excess syndromes such as: hirsutism, acne, lowered timbre of voice or clitoromegaly.
**Material and methods:** A 29-year-old patient, was admitted to the hospital in 36$^{th}$ week of pregnancy due to worsening androgen excess syndromes: hirsutism, acne, decreased timbre of voice and clitoromegaly. Conducted laboratory tests revealed elevated serum level of testosterone (3869 ng/dl normal range 14–76 ng/dl), androstenedione, DHEA-SO4. Solid, vascularized structures, measuring 71 × 39 mm and 63 × 32 mm were exposed in pelvic ultrasound. The entire clinical picture suggested pregnancy luteoma. In the 37th week of pregnancy the Caesarean section was performed. Histopathology revealed lesions characteristic of pregnancy luteoma in both ovaries. A healthy son, 2300/59 was born. Despite normalization of hormone levels after labor, the lowered timbre of voice was irreversible, and the acne exacerbated significantly (to face, chest and back). Retinoid therapy and scar treatment were performed in a dermatology clinic.
**Conclusions:** The rarity of such acute course of pregnancy luteoma may be misleading and indicate adrenal etiology or a malignant ovarian tumor. Our patient is the first reported case of the acne exacerbating despite normalization of androgen levels — caused perhaps by the diagnostically undetectable androgen metabolites with unknown effects.

## (METH)ACRYLATES AS A CAUSATIVE FACTOR OF CONTACT ECZEMA INDUCED BY HYBRID MANICURE

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**Introduction:** Ultraviolet (UV)-curable (meth)acrylate monomers and oligomers are the main components of hybrid varnish and well-known contact sensitizers. So far, allergy to (meth)acrylate monomers has been known as professional eczema of manicurists and dentists. The increasing availability of UV lamps for domestic use has led to increased incidence of allergic contact dermatitis (ACD).
**Material and methods:** We present five cases of ACD to acrylates found in hybrid varnish. In all patients nail changes were due to inflammation within the nail bed and matrix. On the periungual area, intense exfoliating erythematous skin lesions with hyperkeratosis and deep fissures were detected. Such inflammation led to the onychodystrophy with subungual hyperkeratosis resulting in nail plate elevation and onycholysis. In most patients sensitization developed after months or even years of chronic exposure to allergen, leading to type IV allergic reaction. The most frequent allergens were 2-hydroxyethyl methacrylate (2-HEMA) and 2-hydroxypropyl methacrylate (2-HPMA). Mycological examination in all patients gave negative results. Also, none of them had any other nail disease. After hybrid manicure removal, significant clinical improvement, resolution of inflammation was noticed but nail changes persisted for several months.
**Conclusions:** Increasing use of new acrylic nail products requires dermatologists' awareness of induced ACD, that can be confusing with psoriasis. Therefore, inflammatory nail abnormalities merit patch testing

for allergic cause. (Meth)acrylates may also induce cross-reactions with other acrylic compounds (used in dentures, teeth fillings, contact lenses, bone cement or hearing aids) and trigger severe allergic reactions when re-exposure occurs in a different location.

## INTERDISCIPLINARY ASPECTS OF BEHÇET'S DISEASE — A CASE REPORT

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**Introduction:** Behçet's disease, which occurs with a frequency between 1/15000–500000 in Europe, is a condition of unknown etiology, characterized by recurrent oral aphthae and any of several systemic manifestations including genital aphthae, skin lesions, ocular disease, gastrointestinal and neurological involvement, as well as vascular disease or arthritis.
**Material and methods:** A 26-year-old patient, mentally retarded, with family history of four sudden deaths, was hospitalized at the Department of Dermatology twice. He has suffered from recurring painful oral aphthae for 2 years. In September 2017 a small aphtha on the scrotum appeared, rapidly evolving into ulceration. Patient reported headaches and pain in the chest recurring for many years. Multiple additional investigations and consultations revealed heart, vascular and neurological abnormalities. After systemic treatment with azathioprine, antibiotics, antifungals and acyclovir, as well as topical agents, patient's condition improved.
**Conclusions:** Behcet's disease occurs in Poland very rarely, it affects more frequently men than women and usually appears between 20 to 35 years of age, as the presented patient. The most common causes of death of such patients are aneurysm rupture or neurological complications. The prognosis for young men is poorer and strict observation is necessary. The disease is a great interdisciplinary problem because of numerous possible manifestations, that is why it requires cooperation of doctors of many different specialties.

## PORPHYRIA CUTANEA TARDA — CASE REPORTS

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**Introduction:** The porphyria cutanea tarda (PCT) belongs to the group of porphyrias. The gist of porphyria is a heme disorder due to acquired or congenital defect of hepatic enzymes. This consequently leads to the accumulation of porphyrins in various organs. In case of PTC, there is a deficiency of an enzyme- uroporphyrinogen decarboxylase. The most frequent factor that leads to damage of this enzyme is liver insufficiency, as a result of chronic alcoholism and exogenic estrogen intake. The porphyrins accumulating in the skin are decomposed under the influence of ultraviolet radiation, which results in skin lesions. Typical lesions for PCT include blisters, erosions, crusts, and milia, that arise after exposure to the sun. Furthermore, skin becomes thin, more susceptible to injuries and scarring.
**Material and methods:** Two cases of acquired PCT were presented. In the first case, alcoholism, use of hormone replacement therapy and metformin intake were the cause. Second patient used estrogen due to endometriosis. In both cases, skin changes appeared after exposure to the sun.
**Conclusions:** PCT is the most common and the most treatable type of porphyria. PCT may be the first symptom of liver damage. This is why it should be diagnosed early to avoid fatal consequences.

## UNUSUAL PICTURE OF MORPHEA — A CASE REPORT

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**Introduction:** Morphea is an idiopathic, inflammatory disorder limited mainly to the skin and underlying tissues, but can also affect the function and structure of the muscles, bones and the nervous system. Morphea is divided into several variants and combinations of them. Linear morphea and its subtype "en coup de sabre" (LSCS) are special forms of morphea. Linear morphea occurs on extremities and trunk, while LSCS affects head most frequently. Both types of morphea are present in our patient.
**Material and methods:** We want to report the study of a 40-year-old woman diagnosed with morphea at the age of six. In patient's childhood skin lesions progressed till the age of 15 and eventually involved dermis, subcutaneous tissue and muscles of the right side of the body and of the left side of head (LSCS). For the next 20 years there was no activity of skin lesions observed, nowadays new erythematous and sclerotic lesions appear. In 2016 our patient developed hemorrhage in left cerebral hemisphere, what is unusual in young age. Neuroimaging revealed nonspecific changes, possibly vascular lesions related with LSCS.
**Conclusions:** Clinical presentation of coexisting morphea lesions of one side of the body and contralateral side of head has been extremely rare in the literature. Linking CNS malformation with skin lesions localization and early onset of disease may suggest congenital neuronal cell mutation. Etiology of LSCS still remains uncertain and needs some further investigation. Collecting and analyzing clinical case reports is vital to understand basis of this rare disease.

## CHILBLAIN LUPUS ERYTHEMATOSUS: A CHALLENGING CASE REPORT — DIAGNOSIS AND TREATMENT

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**Introduction:** Chilblain lupus erythematosus (ChLE) is clinically classified as a rare subtype of chronic cutaneous lupus erythematosus (CCLE) reported mostly in middle-aged female patients. It is characterized by symmetric erythematous-violaceous inflammatory plaques/nodules and oedematous skin mainly around the acral regions of the body (including the dorsal aspects of fingers and toes, as well as nose, cheeks, and ears), appearing after cold and wet exposure with observed improval tendency in the summer. The lesions commonly ulcerate, but usually heal without scars. Up to 20% of patients affected by ChLE develop systemic lupus erythematosus (SLE) or ChLE may occur after the diagnosis of SLE is established. Making a diagnosis of this special form of LE as well as effective managing is extremely challenging.
**Material and methods:** We report a case of 38-year-old man presented with a 6-month history of an itchy ulcerative lesions on the hands associated with carpal and digital pain and swelling, limited range of motion and impaired grip, who had been treated with different medications with no response. The patient was diagnosed with chilblain lupus (according to Mayo Clinic Proposal of Diagnostic Criteria). Finally, a complex therapy with prednisone, mycophenolate mofetil and sulodexide managed to control the symptoms and brought important relief as well as improved the quality of patient's life.
**Conclusions:** Chilblain lupus erythematosus should be considered as a differential diagnosis when faced with cold-induced erythematous lesions. The reported case suggests that putting a right diagnosis is crucial and aggressive complex treatment makes a control of the systemic disease possible.

## NECROBIOTIC XANTHOGRANULOMA — CHARACTERISTIC FEATURES OF THIS RARE ENTITY

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**Introduction:** Necrobiotic xanthogranuloma NGX is a rare histiocytic disease characterized by multiple nodules or plaques occurring in periorbital area. It is usually associated with malignant lymphoproliferative disorders, including paraproteinemias and multiple myeloma.
**Material and methods:** We present 64-year-old woman with yellowish nodules on her lower eyelids and temple, infiltrating lesions on the

shoulders, and nodular infiltrates on her neck. She was diagnosed with IG-kappa type monoclonal gammopathy in 2011 (without transmission into multiple myeloma till now) but her skin has no changes for several years. The patient was treated with methotrexate 10 mg per week (between 4–8.2017) without response. From 8.2017 till now she has been treated with azathioprine without improvement. Histologically necrobiotic xanthogranuloma is a granulomatous process of a deep dermis with collagen degeneration (necrobiosis) and adipose tissue damage with characteristic cholesterol clefts, many foamy histiocytes, multinucleated giant cells with Touton giant cells, lymphocytic nodular infiltrates, plasma cells and histiocytes.
**Conclusions:** Necrobiotic xanthogranuloma is a very rare disease with characteristic location, clinical presentation and histopathological findings. The overlying paraproteinemia should be investigated in each NXG. The treatment of NXG is difficult with poor therapeutic response. We present the case based on the rule: once seen never forgotten, hoping it will be diagnosed easier in the future.

## THREE CASES OF DIFFERENT SKIN DISEASES WITH PARAPROTEINEMIA

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**Introduction:** Paraprotein is a monoclonal immunoglobulin or its light chains, most commonly — κ, which appears in the blood or urine and usually derives from clonal proliferation of plasmocytes.
A variety of dermatoses are connected with increased level of paraprotein, e.g. cutaneous plasmacytoma, cryoglobulinemia. Although they are rare, may be the first sign of underlying haematologic malignancy.
**Material and methods:** Three cases of different skin disorders secondary to paraproteinemia are presented: (1) 61-year-old woman complaining of diffuse nodular lesions with tenderness and pruritus on her knees and elbows with biopsy proven erythema elevatum et diutinum. Due to unexplained normocytic anemia and bone changes, she was referred to oncology, where m protein, increased level of plasmocytes and IgA κ/λ were detected. These results indicate Monoclonal Gammopathy of Undetermined Significance (MGUS). (2) 65-year-old woman suffering from hyperlipidemia, MGUS and progressive hard nodules on her neck and shoulders. She had numerous yellowish nodules with the foci of skin hardening on her lower eyelids and temples. Histopathology confirmed necrobiotic xanthogranuloma — a rare disease usually associated with paraproteinemia, as in her case. (3) 73-year-old woman with polyclonal gammopathy and many comorbidities was admitted to the hospital to diagnose diffuse, progressive proximal skin hardening, difficulties with swallowing and arthralgia. Biopsy revealed features of scleredema — type of cutaneous mucinosis which may be connected with abnormal level of Ig in the blood. Biopsy of adipose tissue showed amyloid deposits.
**Conclusions:** Our cases concomitant with paraproteinemia imply serious diagnostic and therapeutic difficulties because skin symptoms are only manifestation of plasmocytes dysfunction or transformation.

## RARE TYPE OF NEUROFIBROMATOSIS

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**Introduction:** Neurofibromatosis is a common disorder that affects approximately 1 in 3000 persons. However, Segmental Neurofibromatosis (NF-5) is a rare and atypical variant of neurofibromatosis, where the cutaneous changes are limited to one region of the body. SN is characterized by café-au-lait spots and neurofibromas limited to a circumscribed body region. Because of its rare occurrence, there is no specific guidelines regarding management.
**Material and methods:** In October 2016, a 48-year-old female presented with lesions situated on the upper right arm. Multiple nodules were flesh-colored, soft and non-painful. Primarily lesions occurred 20 years ago after pregnancy. There were no other symptoms typical for NF observed — cafe au lait spots, freckles in the axillary region or Lisch nodules. In November 2016 the tissue biopsy was performed. Histopathological examination indicated neurofibroma. There was no previous family history on NF.
**Conclusions:** In 1982 Riccardi classified NF into eight categories. Our patient presents neurofibromatosis type 5 — SN. NF is caused by postzygotic mutation in the NF1 gene present on chromosome 17. The mutation occurs during the embryonic development and causes mosaicism. SN is generally not transmitted to offspring, because somatic mosaicism does not affect gonadal cells. Mosaicism is also associated with the localized character of the disorder. Neurofibromas of patients with NF1 commonly grow during puberty and pregnancy. Our patient's neurofibromas were strictly limited to one region of the body — right upper arm and occurred after pregnancy. There was no previous family history of NF, which is also typical for NF-5.

## THE ROLE OF DIAGNOSTIC BIOPSY IN AMBIGUOUS CLINICAL AND TRICHOSCOPIC MANIFESTATION OF ALOPECIA

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**Introduction:** Trichoscopy is non-invasive diagnostic method of hair loss and scalp disorders. In most cases, trichoscopy findings are characteristic for the accurate diagnosis. However, some patients need further differential diagnosis provided by biopsy, due to coexistence of two diseases, severe hair loss or unresponsiveness to treatment.
**Material and methods:** Three women in postmenopausal age were admitted to the clinic presenting severe, persistent hair loss with the history of: Hashimoto disease, ovary carcinoma, endometriosis and adrenalectomy. Previous pharmacological treatment with topical corticoids was insufficient. Adjuvant therapy with PRP was without any benefit. The blood tests and trichoscopy were performed. Based on results and comorbidities the initial diagnosis was Female Androgenic Alopecia. The image of videodermoscopy showed features characteristic not only for FAGA as: scale, erythematous plaques and dilated vessels. The differential diagnosis included psoriasis, mucinosis follicularis, alopecia areata, eczema or early discoid lupus erythematosus. In biopsies, the histopathology examination revealed Malassezia spp. and bacterial infundibular infection, increased percentage of telogen hairs, disturbances of keratinization and hair follicle miniaturization. Telogen shift with minimal inflammation indicated diagnosis of telogen effluvium coexisting with AGA. In one case, diffuse alopecia areata was suggested. FAGA with predisposing factors: drug treatment, hypothyroidism, anemia, chronic illnesses, major surgery or stress enforce searching for additional alopecia type leading to hair loss exacerbation.
**Conclusions:** Presented cases show the important role of the biopsy in diagnostic process of alopecia, differentiating scarring from non-scarring process and identification of comorbidities in the hair follicles or dermis leading to increased hair loss.

## AMICROBIAL PUSTULOSIS OF THE FOLDS

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**Introduction:** Amicrobial pustulosis of the folds (APF) is a rare, neutrophilic dermatosis characterized by the presence of relapsing, sterile pustules involving predominantly cutaneous folds, anogenital region and scalp. It affects almost exclusively young women exhibiting a wide spectrum of autoimmune abnormalities. As the disease shares common clinical and histopathological features with other pustular dermatoses, differential diagnosis might be problematic. Due to low incidence of APF, data on effective therapeutic options are limited to solitary cases. The aim of the study is to present a patient with APF, who was successfully treated with topical steroids.

**Material and methods:** A 69-year-old man with hypertension and asthma presented to our department with a 3-week history of escalating pustular eruption of major skin folds with co-existing pruritus. Skin biopsy revealed subcorneal pustules with neutrophilic infiltrate, as well as psoriasiform epidermal hyperplasia with granular layer preserved. Direct and indirect immunofluorescence examination as well as Periodic Acid-Schiff (PAS) staining of the biopsy specimen gave a negative result. An increased concentration of anti-thyreoperoxidase antibodies with compensated thyroid hormones was detected. Two-week treatment with high-potency topical glucocorticosteroids resulted in significant improvement, without noticeable relapse during a 4-month follow-up.
**Conclusions:** In conclusion, the diagnosis of this rare entity can be difficult, as it can be easily misdiagnosed as more common conditions, such as pustular forms of psoriasis or pemphigus foliaceus. That is why clinicopathological correlation and search for co-existing autoimmune disorders play a crucial role in APF diagnosis.

# REVIEWS — ORAL SESSION

## PROSTAGLANDIN ANALOGUES FOR THE TREATMENT OF DIFFERENT TYPES OF HAIR LOSS

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Bimatoprost, latanoprost and travoprost are prostaglandin F2-alfa analogues, commonly used to treat glaucoma. Trichomegaly and hypertrichosis of the eyelashes, which may occur as side effects of glaucoma therapy with topical prostaglandin analogues, led to clinical studies of the efficacy of these drugs for different forms of alopecia. Topical treatment with 0.1% latanoprost solution was reported to significantly increase hair density (terminal and vellus hairs) in a small randomized trial of men with androgenetic alopecia. Mechanism of action of prostaglandin F2-alfa analogues in androgenetic alopecia stems from stimulation and prolongation of the anagen phase in hair follicles. The use of prostaglandin F2-alfa analogues has also been investigated in alopecia areata. Topical application of bimatoprost 0.03% solution applied twice daily resulted in higher percentage of hair regrowth and earlier onset of initial response in comparison to mometasone furoate cream 0.1% applied once daily. Data on efficacy of bimatoprost on alopecia areata of the eyelashes are inconclusive. Topical bimatoprost may be also considered for the treatment of chemotherapy-induced eyelash alopecia. Prostaglandin F2-alfa analogues have been shown to be safe and well tolerated in adult and pediatric populations. Most of the reported adverse effects were mild, localized to the site of application and reversible after termination of the treatment. Most commonly reported were: conjunctiva hyperemia, pruritus, contact dermatitis and irritation. Additional studies with longer follow-up and larger sample sizes are necessary to determine whether prostaglandin analogues could be used for treatment of different types of hair loss.

## NUTRIENTS THAT PREVENT HAIR LOSS

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Hair follicle cells are among the most metabolically active cells and they need good supply of nutrients and energy. For this reason, nutritional and energy deficiency may lead to structural abnormalities or hair loss. Malnutrition and inadequate supply of energy and proteins are common causes of hair loss. Proteins are major constituent of hair fibres. Crucial aminoacids include L-lysine (important for iron and zinc uptake) and L-cysteine (component of keratin). Furthermore, essential polyunsaturated fatty acids and alpha-linolenic acid deficiency can lead to hair loss. Insufficient iron is the most common nutritional deficiency that also leads to this problem. The reason is that multiple genes in a human hair follicle may be regulated by this nutrient. Copper is crucial for keratin fibre strength and an essential micronutrient for prevention of hair loss. Selenium plays an important role in protection against oxidative damage. Studies suggest that rats suffering from its deficiency have sparse hair growth. Zinc deficiency may lead to telogen effluvium and brittle hair. Vitamin C is also important because ascorbic acid is crucial for collagen synthesis and cross-linage of keratin fibres. Vitamin D plays a role in hair follicle cycling, whereas vitamin A activates hair follicle stem cells. Biotin may help by increasing DNA concentration and protein synthesis in hair follicles. The supply of these nutrients in a well-balanced diet can play an important role in prevention of hair loss.

## DIET AS A FORM OF PREVENTION AND TREATMENT OF ATOPIC DERMATITIS IN INFANTS AND SMALL CHILDREN

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In atopic dermatitis (AD) prevention, breastfeeding plays an important role and hence early termination of this process is not advised. It seems that mothers dietary restrictions have no influence on AD development. As an alternative or support to breastfeeding children with high risk of AD development, milk replacement with hydrolyzed proteins may be used. For many years, among children with increased AD risk, food that was potentially allergenic was introduced later than it normally would. Current scientific evidence indicates that not only it did not decrease the risk but may have potentially increased it. The conclusion is that it is not recommended to deviate from nutrition guidelines for young children or introduce dietary restrictions. Before applying elimination diet, products that exacerbate the symptoms should be identified. Unjustified elimination and incorrect diet management can lead to nutritional deficiencies. More and more frequently we notice a connection between abnormal gut microbiota and AD development and so it seems justified to supplement probiotics in both pregnant and breastfeeding women as well as newborns. Changes in gut microbiota in infancy may have a role in allergies development, because of its impact on immune system functions and development.

## RESTORATION OF THE NATURAL COMPOSITION OF THE SKIN MICROBIOME — A NOVEL STRATEGY FOR THE TREATMENT OF ATOPIC DERMATITIS

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Microbiome disorders, which have been proposed as an important element of pathogenesis in various dermatoses, are particularly well studied in atopic dermatitis (AD). 16S rRNA sequencing has confirmed classical microbiological observations regarding the excessive colonization of AD lesions by Staphylococcus aureus and simultaneous reduction of other bacterial strains of the natural microflora. It has also become evident that S. aureus may not only be a secondary exacerbating factor of the disease, but also lead to the development and perpetuation of skin lesions in AD. In the light of these reports, restoration of the proper composition of the skin microbiome has become a promising novel therapeutic option. Nevertheless, due to the risk of selection of drug-resistant strains of pathogenic bacteria and reduction of beneficial commensal microflora, the extent and chronic course of the disease and cost-effectiveness, antibiotics are not indicated in asymptomatic *S. aureus* colonization. However, promising reports considering the application of synthetic anti-microbial peptides (AMPs), specific bacteriocins derived from bacteriophages and preparations containing non-pathogenic commensal bacteria have, among other solutions, given base to the elaboration of an additional line of treatment in AD. This report focuses on the role of novel agents in restoring natural skin microbiome in AD and on the impact of this intervention on the clinical course of the disease.

## NONALCOHOLIC FATTY LIVER DISEASE, INSULIN RESISTANCE AND PSORIASIS. NEW ASPECTS OF LOW-GRADE CHRONIC INFLAMMATION

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Over the past 10 years, it has become increasingly evident that nonalcoholic fatty liver disease (NAFLD) is a multisystem disease that affects multiple extra-hepatic organ systems and interacts with regulation of several metabolic and immunological pathways. NAFLD and the metabolic syndrome are mutually and bidirectionally associated, as these two pathological conditions share insulin resistance as a common pathophysiological mechanism. There is clinical and epidemiological evidence supporting a strong association between NAFLD and chronic plaque psoriasis. They share multiple inflammatory and cytokine-mediated mechanisms and are part of an intriguing

network of genetic, clinical and pathophysiological features. It is conceivable that several pro-inflammatory cytokines that are locally over-produced by lymphocytes and keratinocytes into the skin of psoriatic patients may contribute to the pathogenesis of systemic insulin resistance. Health care providers following psoriatic patients should be mindful of this potentially progressive liver disease that is commonly observed among psoriatic patients. The presence of NAFLD should be also taken into consideration when choosing pharmacological treatment, as some conventional drugs for psoriasis are potentially hepatotoxic.

## APREMILAST — NEW TREATMENT OPTION FOR PSORIASIS

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Apremilast is an oral small molecule (non-biologic) inhibitor of phosphodiesterase 4. Increase in the intracellular concentration of cyclic adenosine monophosphate leads to suppression of proinflammatory cytokines (TNF-α, IL-12, IL-17, IL-23) production and relase of anti-inflammatory mediators (IL-10). The immunomodulatory effects of phosphodiesterase 4 inhibitors have been investigated in a number of chronic inflammatory diseases, such as psoriasis and psoriatic arthritis.
The efficacy of apremilast in the treatment of moderate to severe plaque psoriasis was confirmed in preclinical in vivo models as well as in phase II and III clinical trials. Additionally, apremilast was also effective in the treatment of psoriasis in difficult to treat locations such as palms and soles, scalp and nails. Apremilast is generally well tolerated. The most common adverse effects are gastrointestinal complaints such as diarrhea, nausea and weight loss. They occur within the first few weeks of use and pass away with time. Other side effects include headaches, insomnia and upper respiratory tract infections. Owing to the absence of organ toxicity, there is no need of laboratory prescreening or ongoing monitoring for laboratory parameters. The advantages of apremilast include activity for both psoriasis and psoriatic arthritis and efficacy in difficult to treat forms of psoriasis, a good safety profile, oral administration. This makes apremilast an attractive therapeutic option for patients with psoriasis. However, cost-effectiveness and health economics should also be taken into account.

## SURPRISING CORRELATION: PARKINSON'S DISEASE AND MELANOMA. WHAT IS THE POSSIBLE LINK?

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Parkinson's disease (PD) is a neurodegenerative disorder, characterized by depletion of dopamine in the striatum and loss of melanin-positive, dopaminergic neurons in the substantia nigra pars compacta. Melanoma is a skin cancer arising from epidermal melanocytes. The epidemiology of melanoma focus on well-known risk factors such as skin and hair color, gender, eye pigmentation and ultraviolet (UV) exposure. Several studies have suggested an association between PD and melanoma. The underlying mechanism that link Parkinson's disease with melanoma is not clear but it has aroused lots of interests. More interesting is that the link between these diseases runs both ways. What is the underlying cause of this reciprocal association? Is it due to Parkinson's treatment? Is levodopa the reason of increased incidence of melanoma in people with the neurodegenerative condition? Are there any genetic, immune system irregularities or environmental risk factor that serves as the common denominator between these two conditions? Should we consider melanoma comorbidity with Parkinson's disease and vice versa? Some hypothesis include pigmentation changes in melanin and/or melanin synthesis enzyme like tyrosinase, autophagy deficits, changes of PD-related genes such as Parkin or α-synuclein. Learning more about the relationship between PD and melanoma may lead to better understanding of each disease and contribute to more effective treatments of both.

## VISMODEGIB — AN INNOVATIVE THERAPEUTIC OPTION FOR PATIENTS WITH LOCALLY ADVANCED OR METASTATIC BASAL CELL CARCINOMAS

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Basal cell carcinoma (BCC) is the most common cancer in individuals with fair skin type. The tumor usually grows slowly and has a good prognosis. The gold standard of treatment of BCC remains surgical excision. For BCCs not suitable for surgery, topical therapies, such as 5-fluorouracil, imiquimod, photodynamic therapy and cryotherapy are a therapeutic opportunity. However, all these approaches are less effective than surgery. In 2012 FDA approved vismodegib for patients with metastatic or locally advanced, recurring after surgical excision BCC, as well as for cases when surgery or radiation are contraindicated. Vismodegib blocks the sonic hedgehog pathway whose activating mutation plays a key role in the pathogenesis of BCC. The main challenges in the vismodegib therapy are adverse effects such as muscle cramps, alopecia and nausea, in some cases resulting in the discontinuation of treatment. There were reports of developing squamous cell carcinoma (SCC) at distant sites or within the primary tumor bed during or after treatment with vismodegib. The question whether vismodegib significantly increases the risk of SCC still remains to be answered.

## THE USABILITY OF SULODEXIDE IN DERMATOLOGY

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**Introduction:** Sulodexide, known for its antithrombotic and anti-inflammatory properties, belongs to the group of low-molecular weight heparins. The aim of this study was to evaluate the current usability of sulodexide in dermatological conditions.
**Material and methods:** An electronic search of three databases (Scopus, Web of Science and PubMed) was performed using the following search terms: sulodexide AND (therapy OR treatment OR efficiency) AND (skin OR dermatol OR sclerosis OR morphea OR ulcer).
**Results:** A total of 58 articles were included into the review. A total of 44 studies concerned venous leg ulcers and showed that oral sulodexide (250 or 500 LSU/day) may serve as an effective adjuvant therapy. Seven articles regarded diabetic foot leg ulcers. Four out of seven records focused on the usability of sulodexide in oral lichen planus. In one study, the mean time needed for complete clinical resolution equaled 23 and 36 days in sulodexide and topical cyclosporine group, respectively. Two publications revealed that oral sulodexide used in recurrent aphthous stomatitis has less severe adverse effects than oral prednisone. One study showed efficacy of sulodexide in localized scleroderma, administered both orally (500 LSU/day) and intravenously (600–1.200 LSU/day). Another study showed that both parenteral (1.200 LSU/day for 3–4 days every 4–6 weeks) and oral (500 LSU/day) sulodexide reduces the risk of complications of impaired microcirculation in systemic sclerosis.
**Conclusions:** Sulodexide is an effective adjuvant therapy for venous leg ulcers. Further investigations are needed to evaluate its efficacy in other dermatological conditions.

## DIFFERENTIAL DIAGNOSIS OF PROGRESSIVE CUTANEOUS SCLEROSIS AND ITS CAUSES

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Progressive cutaneous sclerosis is a state that may involve dermis, subcutaneous tissue and underlying soft tissues. It can be either deep or broad and be secondary to various systemic disorders, from benign to life-threatening ones. Due to its potentially lethal causes, it is essential

to thoroughly diagnose the patients with signs of rapidly progressing skin hardering. Apart from detailed interview and thorough physical examination, histopatological examination of the skin lesion, immunohistochemical staining, blood analysis and other laboratory tests can be very helpful in differential diagnosis. Hematological diseases, such as paraproteinemias or their more severe form — plasma cell dyscrasias — can be distinguished as possible culprits of progressive cutaneous sclerosis. Examples of skin conditions associated with monoclonal gammapathies include amyloidosis, POEMS syndrome, scleromyxedema, scleredema and eosinophilic fasciitis. Thickening of the skin can also occur in mycosis fungoides — the most common cutaneous T-cell lymphoma. Correct diagnosis is crucial as some forms of progressive cutaneous sclerosis can withdraw after introduction of proper treatment of the underlying disease. This presentation provides clinical and morphological clues to differentiate various presentations of progressive cutaneous sclerosis and diseases or systemic disturbances which can be hidden as the cause of skin hardening.

## TARGETING FIBROSIS IN SYSTEMIC SCLEROSIS — WHAT IS NEW IN BASIC AND CLINICAL SCIENCES?

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Systemic sclerosis is a chronic, systemic autoimmune disease, characterized by progressive fibrosis of the skin and internal organs. The pathogenesis of systemic sclerosis is complex and not completely understood. Most theories tend to focus on the interplay between immunological events and vascular changes. Recent advances in the understanding of molecular and cellular pathways involved in fibrosis allow to develop new targeted therapeutics. The central mediator of fibrosis in systemic sclerosis is transforming growth factor-β (TGF-β). This pleiotropic cytokine stimulates fibroblasts to proliferate and produce extracellular matrix components. Fresolimumab, a monoclonal antibody against TGF-β, was shown to decrease skin fibrosis in patients with early diffuse cutaneous systemic sclerosis. Another drug targeting the TGF-β pathway abituzumab (antibody against αv integrin) is currently being evaluated in phase 2 clinical trial. Promising results from a small clinical and observational studies highlight the potential efficacy of B-cell depletion therapy with rituximab in systemic sclerosis associated interstitial lung disease. Interleukin-6 is secreted by activated immune cells and plays important role in fibroblast accumulation. Blockade of interleukin-6 receptor with tocilizumab reduces skin and lung fibrosis. Given the role of vascular damage in systemic sclerosis, the use of riocyguat, stimulator of the soluble guanylate cyclase, has additionally antifibrotic effect. A number of other new therapeutics is currently under evaluation for systemic sclerosis. The diversity of the available strategies raises hope for starting a new era in the treatment of fibrotic diseases.

## LICHEN SCLEROSUS — BETWEEN DERMATOLOGY AND GYNAECOLOGY

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Lichen sclerosus (LS) is a chronic, inflammatory, mucocutaneous disorder that most commonly afects genital and perianal areas. The etiology of lichen sclerosus is unclear, and may include genetic, hormonal, irritant, traumatic and infectious factors. LS may occur at any age but is usually diagnosed in prepubetral and postmenopausal women. Typical skin lesions are white atrophic plaques that can result in genital scarring and adhesions with a risk of developement of squamous cell carcinoma. The diagnosis should be confirmed with a skin biopsy and early treatment should be initiated. High-potent topical corticosteroids are used in first-line treatment of lichen sclerosus. Second-line therapy includes calcineurin inhibitors. Topical and systemic retinoids, steroid injections, cyclosporin and methotrexate should be applied when the previously mentioned methods are ineffective. Surgery should be restricted to patients with functional impairments. Consistent long-term treatment can decrease the risk of development of squamous cell carcinoma connected to genital area. The anogenital location of lesions and typical profile of patients indicates the need for close cooperation between a dermatologist and a gynecologist in a long-term treatment and follow-up of LS.

## PATHOGENICITY OF ENVIRONMENTAL CHLAMYDIAE FOR HUMANS AND ANIMALS

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More and more attention has been paid to environmental chlamydiae in recent years. They were classified as pathogenic bacteria for both humans and animals. Thanks to molecular biology techniques, the following nine families of environmental chlamydiae were assigned to the order of Chlamydiales: *Candidatus Clavichlamydiaceae*, *Criblamydiaceae*, *Parachlamydiaceae*, *Candidatus Piscichlamydiaceae*, *Rhabdochlamydiaceae*, *Simkaniaceae*, *Waddliaceae*, *Candidatus Actinochlamydiacae* and *Candidatus Parilichlamydiaceae*. These bacteria are considered the infectious factors of zoonoses due to the fact that they can be found among pets and livestock such as cats, guinea pigs, sheep, cattle and even fish. Many of these animals also suffer from diseases caused by these bacteria. While characterizing environmental chlamydiae, special attention has been paid to illnesses of the respiratory tract caused by Simkania negevensis, and to the miscarriages in people and ruminants caused by *Waddlia chondrophila*. Furthermore, the species of the Rhabdochlamydiaceae family as well as the bacteria from the Parachlamydiaceae family are responsible for eye illnesses in humans and animals. Lastly, newly discovered fish chlamydiae which are potential pathogenic factors in humans and terrestial animals are also presented.

## DRUG INDUCED LUPUS ERYTHEMATOSUS

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Drug-induced lupus erythematosus (DILE) is a term referring to an autoimmune disorder caused by specific medication use and characterized by clinical and immunopathological features comparable to those found in idiopathic LE. In contrast, the onset of symptoms of DILE is slower, milder and strongly linked to continuous drug exposure. It passes away after termination of the treatment and can re-occur when medication is used again. The time needed for symptoms to occur may vary from several days to years of chronic drug administration. Three distinct types of drug-induced lupus have been reported: systemic DILE, subacute cutaneous (DISCLE) and chronic cutaneous drug-induced lupus. Unlike LE, DILE does not show female predilection and the mean age of its onset is generally higher. The first DILE was described in 1945 after sulfasalazine use and in 1985 hydrochlorothiazide was found to be causing DISCLE. The list of numerous xenobiotics linked with the condition includes antihypertensives (hydralazine, methyldopa), antiarrhythmics (procainamide), antibiotics (isoniazid, minocycline), diuretics, antipsychotics and others. In recent years, biological therapies with TNF-alpha inhibitors as DILE-inducing agents have been reported. Due to their broader use in medicine, the number of DILE caused by anti-TNF-alpha is still growing. No formal diagnostic criteria have been formulated but rather sets of guidelines are used to standardize and facilitate the diagnosis and to distinguish between the drug-induced and idiopathic form. Discontinuation of the implicated drug is the principal action in the management of DILE but in more severe cases the use of immunosuppressive agents and glucocorticoids should be considered.

## OCULAR MANIFESTATIONS IN AUTOIMMUNE BULLOUS DISEASES

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Autoimmune bullous diseases are a group of disorders which affect skin and mucous membranes. Ocular involvement is observed in about 70% of patients with mucous membrane pemphigoid. Patients with the disease present chronic cicatrizing conjunctivitis, symblepharon, cicatricial entropion, and trichiasis. The disease can lead to corneal ulcerations, symptoms of dry eye and consequently to progressive vision loss and blindness. Paraneoplastic pemphigus or paraneoplastic autoimmune multiorgan syndrome is another autoimmune disorder with frequently observed ocular involvement. There are reports in the literature about cicatrizing conjunctivitis with symblepharon formation and corneal melting. Ocular involvement can be rarely observed in pemphigus vulgaris. One of the most common symptoms is non-scarring conjunctivitis and erosions of conjunctiva. Patients with ocular lesions in the course of pemphigus vulgaris complain of pain and photophobia. The treatment of patients with ocular symptoms in the course of autoimmune bullous disorders is challenging. Therapy consists of glucocorticosterids and various adjuvant immunosuppressive agents. In conclusion, early detection and adequate treatment of ocular symptoms are of significant importance for preserving vision in patients with autoimmune bullous diseases.

## PRIMARY CUTANEOUS B-CELL LYMPHOMAS

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Primary cutanoeus lymphomas are rare heterogenous malignant neoplasms which at the moment of diagnosis are located only on the skin. Most of primary cutanoeus lymphomas are associated with T-cell lymphomas, however 25% of them are B-cell lymphomas. Primary cutanoeus B-cell lymphomas (CBCL) are thought to be less important than the T-cell group because they are less common. The annual incidence of B-cell lymohomas is about 0.3 per 100 000 population. The pathogenesis of B-cell lymphomas is incompletely known. Pathogenesis is usually associated with genetic, immunological and enviromental factors. The clinical presentation can be various in different patients and depends on the type of lymphoma. In the CBCL group we can distinguish primary cutanoeus follicle centre lymphoma, primary cutanoeus marginal zone lymphoma and primary cutanoeus diffuse large B-cell lymphoma, leg type. The base of diagnosis are clinical features, histopathological examination of the skin, sometimes the lymph node and also immunophenotype of the lymhocytes. The aim was the description of clinical features, diagnosis, differentiation and treatment of primary cutanoeus B-cell lymphomas.

## DERMATOLOGICAL DIET

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Dermatology is a field of medicine specializing in examining and describing the structure as well as functions of the skin and its appendages. Dermatologists diagnose numerous skin diseases based on skin structure changes. Many systemic diseases can be also detected on skin symptoms. Specific symptoms are crucial for the disease recognition and diagnosis and some of them possess complicated names, therefore it may be hard to pronounce and remember them. But some of these symptoms names resemble everyday objects.
According to the dictionary of the Royal Spanish Academy an eponym is the use of the name of a person or place to designate a town, period, disease, unit of measure, or whatever. In medicine, eponyms are descriptive names used as referrral to a disease, syndrome, clinical sign, surgical technique, or device. The use of an eponym very often pays homage to the physician who first described the condition. Eponyms may also refer to the name of the patient whose case contained the first description of a disease. We will give many examples of dermatological eponyms originating from foods as well as fruits, which we can commonly find in our fridge, for instance, blueberry muffin. This dessert reminds us of a newborn with purple skin changes, who has neonatal purpura of congenital rubella syndrome also known as CRS.

# ORIGINAL RESEARCH — ORAL E-POSTER SESSION

## PSORIASIS — OCULAR MANIFESTATIONS

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**Introduction:** Around 10% of the patients with psoriasis complain from eye problems. They are believed to be caused by immune disturbances and applied treatment.
**Aim of the study:** An assessment of visual disturbances in patients with psoriasis.
**Materials and methods:** 279 patients with psoriasis were asked to participate in questionnaire survey. Several factors were analyzed: ophthalmic symptoms, connection between them and psoriasis and character of psoriasis as the underlying disease. Study group was compared to the control group consisting of 135 respondents.
**Results:** 49% of the psoriatic patients complained from ocular symptoms. Women were more likely to develop eye changes than man regardless of clinical variant of psoriasis. There was no statistical significance in the duration of the disease between patients with and without ocular manifestations. Patients with psoriatic arthritis were more predisposed to ophthalmic disturbances. Three symptoms: sudden change in visual acuity, severe eye pain, blurred vision were statistically significant and were more often observed. 57% of the patients using external treatment complained from eye symptoms.
**Conclusions:** The most predisposing to ocular disorders type of psoriasis is psoriatic arthritis. Women are more likely to develop ophthalmic dysfunction what can be associated with autoimmune reactions, more often observed in females. Four of analyzed ocular symptoms are a part of clinical picture of anterior uveitis. Patients external treatment are more likely to develop ocular changes. Regarding the general treatment retinoids can cause burning sensation, itchy eyes and dry eye syndrome in patients with psoriasis.

## PSORIASIS — THE INFLUENCE OF SMOKING ON THE DEVELOPMENT AND COURSE OF THE DISEASE

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**Trustee of the paper:** Agnieszka Owczarczyk-Saczonek

**Introduction:** Cigarette smoking influence the development of multiple disorders and chronic diseases. According to World Health Organisation (WHO) it kills more than 5 mln people each year and is responsible for the death of one out of ten adults. The risk of developing psoriasis is higher among actual and past smokers comparing to a non-smoking population. Nicotinism is also known to exacerbate the course of the disease. Cigarette smoking leads to an increased production and release of free radicals and is the cause of "oxidative stress". Free radicals stimulate some of prostaglandin-independent cell signaling pathways that are known to be involved in the pathogenesis of psoriasis. However, it should be emphasised, that suffering from psoriasis, is a source of stress itself, leading to decreased self-esteem and causing the patients are more likely to reach for alcohol and cigarettes.
**Aim of the study:** The aim of the study was to analyze a group of nicotine dependent psoriatic patients in terms of correlation between the strength of addiction and the prevalence and severity of the disease course.
**Materials and methods:** The study reveals the analysis of cigarette addiction among a group of psoriatic patients with the use of Fagerström Test for nicotine dependence.
**Results and conclusions:** The results and conclusions are still being evaluated in comparison to a group of nonsmoking patients, regarding their age and sex.

## THE EFFECT OF STRESS ON THE FORMATION OF SKIN SELIONS

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**Introduction:** Stress is an indispensable element of our lives. It has many implications and essentially contributes to the disruption of homeostasis and the emergence of many diseases. The skin, however, as the largest organ of the common coat, has many functions and, as in the mirror, all the changes taking place in the body reflect it.
**Aim of the study:** Evaluation of the impact of stress on the time and severity of the skin lesion unit.
**Materials and methods:** The study included 100 students aged 19 to 28 years. A questionnaire was used to conduct the study, consisting of 22 questions on, among others, skin changes and diseases, lifestyle, stress factors and two questions regarding student self-assessment. A file is also attached. The whole was developed in Excel 2013 and analyzed.
**Results:** As a result of the data analysis, it can be stated that 91% of people observe reactions to stress and 100% of people experience stress during the year. Most respondents indicate the development of skin lesions, 64% think that there is a significant relationship between the stress and the occurrence of ailments.
**Conclusions:** Stress has a very large impact on the induction of skin lesions and on their development, also affects exacerbation of already existing ailments. Stress acts on the skin through a strong modulating effect of the neuro-endocrine-immune system. Therefore, the occurrence of stress-dependent dermatoses should be treated interdisciplinary using multidimensional dermatological, psychological and psychiatric procedures.

## ROLE OF SWI/SNF CHROMATIN REMODELING COMPLEX IN MUCOSAL INFLAMMATORY DISEASES

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**Introduction:** SWI/SNF is a chromatin remodeling complex which plays role in the suppression of human oncogenesis and probably inflammatory response. It can be important in pathophysiology of mucosal inflammatory diseases. We hypothesize that one of the reasons of chronic rhinosinusitis (CRS) relates to the SWI/SNF complex.
CRS is one of the most common chronic human diseases with the estimated prevalence of 11% among European populations. The causes of CRS remain uncertain although presumable etiology and pathophysiology of CRS have long been known.
**Aim of the study:** The aim of study is the assessment of the protein expression level of the SWI/SNF complex subunits (BAF155, BRM and BRG1) in the nasal cavity mucosa from patients with CRS.
**Materials and methods:** Samples of nasal mucosa were taken from patients during functional endoscopic sinus surgery: 30 patients suffering from chronic sinusitis with and 30 without polyps and as control group — 30 patient without CRS whom underwent septoplasty.
Activities of subunits BAF155, BRG1 and BRM were measured in molecular examination.
**Results:** Results of the observation have revealed smaller amount of the SWI\SNF complex in the CRS groups in comparison to the control group. A significant lower level of the complex was noticed in the CRS with polyps group, compared to the control group and the group without polyps.
**Conclusions:** The role of SWI/SNF in mucosal disorders should be analyzed. The thorough knowledge about the CRS pathophysiology is crucial for clinicians to improve the patient treatment and helps to avoid potential complications.

## ASSESSMENT OF KNOWLEDGE ABOUT MELANOMA AND BEHAVIOR ASSOCIATED WITH EXPOSURE TO UV AMONG STUDENTS

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**Introduction:** Melanoma represents only 2% of all skin neoplasms nevertheless it is the most malignant skin neoplasm. It is a great interdisciplinary health problem because the morbidity and fatality still increase, approximately it doubles every 10 years.
**Aim of the study:** Assess the knowledge of medical and non-medical faculties students regarding melanoma, its risk factors and responders' sun protection-associated habits.
**Materials and methods:** In 2016 an original anonymous survey was carried. 277 subjects responded. They filled 17 questions: general regarding responders' information and specific regarding melanoma. Statistical analysis was performed using Chi-Square test, statistically significant difference was at $p < 0.05$.
**Results:** In the group 76% were females and 24% males. The most common skin phototype was type II (34%). More than one sun burn in the past was reported by 69%. Possessing less than 50 moles was reported by 67% of responders and more than 50 by 23%. One responder had history of melanoma. It was also diagnosed among grandparents and distant relatives in 3%, among parents in 2%. Most of responders (92%) considered melanoma as a malignant neoplasm, while 4% as a benign lesion and 4% did not know what it was. There was no statistically significant difference between groups regarding sun-exposure behaviors, sun protection and knowledge of risk factors of melanoma. Medical students statistically significant better-identified features of moles that may be related to malignancy.
**Conclusions:** Almost every responder identified melanoma correctly as a malignant neoplasm, nevertheless awareness of the risk factors for melanoma is insufficient what contributes to the increasing incidence of the disease.

## CUTANEOUS SIDE EFFECTS IN ONCOLOGICAL TREATMENT AND DECREASING OF PATIENTS' QUALITY OF LIFE — A QUESTIONNAIRE STUDY

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**Introduction:** Cancer is second — after cardiovascular diseases — most common cause of death in Poland. Due to increased frequency of chemotherapeutic use and combined oncological treatment, there are more and more reports on toxic effect of oncological therapy on the skin, its appendages and mucous membranes.
**Aim of the study:** The aim of the study was to gather information about different types of skin toxicity during anti-cancer treatment. Secondary purpose was to get to know, how much it affects patients quality of life.
**Materials and methods:** A study of 50 patients undergoing oncological treatment in Oncological Centre in Bydgoszcz was performed. Using the authorial questionnaire, the types of skin problems, their duration and frequency were analyzed. Moreover, the influence of skin changes on patient comfort was studied using Dermatology Life Quality Index. Analysis of collected data was done by using Statistica 13 programme.
**Results:** Research has shown that most of oncologically treated patients experience side effects concerning the skin or its appendages during the therapy. Frequency of skin changes occurrence varies depending on skin problem type, type of the medication and also individually. Data has not shown any correlation between sociodemographic profile and the cutaneous manifestations.
**Conclusions:** Studies on cutaneous side effects caused by anti-cancer treatment will allow developing standards and protocols of proper skin care. This could lead to the increase of quality of life in oncological patients. It should also be noticed that various medications are often simultaneously used and it is difficult to assign undesirable symptoms to a specific drug.

## REHABILITATION IN SYSTEMIC SCLEROSIS — AN EASY WAY TO IMPROVE PATIENT COMPLIANCE

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**Introduction:** Systemic sclerosis is a chronic connective tissue disease of a complex etiology. Due to the skin fibrosis within the fingers it leads to the joint mobility limitation and contractures which result in a significant loss of hand mobility. The appropriate rehabilitation programs can prevent or delay the formation of contractures.
**Aim of the study:** The purpose of the study was to compare the efficacy of home exercises alone and home exercises combined with paraffin bath treatment in hand rehabilitation of patients with systemic sclerosis.
**Materials and methods:** The pilot program involved two groups of patients. The first group (11 patients) performed home exercises for a month. The second group (12 patients) apart from performing home exercises underwent paraffin bath treatment for one week. Hand mobility was assessed using HAMIS test. The second group of patients was also assessed subjectively with VAS scale.
**Results:** In both groups majority of patients showed improvement in the HAMIS test (respectively 7 and 8 patients). 4 patients from both groups received the same results. The mean improvement in HAMIS test in group 1 and 2 was 0.91 and 2 points respectively. Improvement was observed also in VAS scale. All patients from the second group were strongly willing to continue the therapy.
**Conclusions:** The preliminary observations confirm the effectiveness of both rehabilitation programs in improving the motion range of patients with systemic sclerosis. Nevertheless, the combined therapy seems to give better results and enforces the patient compliance and concordance.

## GRANULOMA ANNULARE — STILL ENIGMATIC DISEASE. A RETROSPECTIVE ANALYSIS OF PATIENTS

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**Introduction:** Granuloma annulare (GA) is an inflammatory skin disease of uncertain etiology and epidemiology, characterized most commonly by firm papules and erythematous annular plaques with predilection for limbs.
**Aim of the study:** Retrospective analysis of medical records of patients with GA.
**Materials and methods:** Ten-year retrospective analysis of patients hospitalized with GA at the Department of Dermatology. Gender, age of patients, comorbidities, clinical course of the disease and treatment were considered. Results were analyzed using Chi-squared test.
**Results:** In this period 52 patients were hospitalized with GA — 37 females and 15 males. Age of patients ranged from 5 to 79 years, average 50.58. The history of skin lesions ranged from one week to eight years, in 80% of patients they persisted for at least one year. The most common skin manifestation was erythema (62%) and papules (60%) with annular arrangement in 71% cases. Lesions were localized most often over the limbs: lower (79%) and upper (77%); in 81% patients they were observed in more than one area, in 23% a generalized variant was diagnosed. The most common comorbidity was arterial hypertension (38%), hypercholesterolemia (27%), carbohydrates metabolism disorders (23%) and thyroid diseases (21%). Three patients reported present or past neoplasms occurrence; 63% patients had excess body weight.
**Conclusions:** The analysis confirmed GA is a disease of a chronic course affecting more often women than men as well as overweight patients. Hypercholesterolemia was observed more frequently in patients in GA. The relationship between GA and malignancies remains uncertain, however in patients with atypical, disseminated manifestations, neoplasm investigation should be considered.

# CASE REPORTS — ORAL E-POSTER SESSION

## INGENOL MEBUTATE TREATMENT IN ACTINIC KERATOSIS — CLINICAL EFFECTIVENESS AND POTENTIAL SIDE EFFECTS

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**Introduction:** Actinic keratosis is a common skin disease that occurs in response to prolonged exposure to ultraviolet radiation. This problem affects up to 60% of the population over 40 years of age. Actinic keratosis is considered to be a precancerous lesion leading to SCC. The new therapeutic option for the treatment of actinic keratosis is ingenol mebutate gel (0.015%, 0.05%).
**Material and methods:** 10 patients with actinic keratosis lesions on face or scalp self-applied a 0.015% gel for 3 consecutive days on the 25cm2 marked area. They were assessed at baseline and day 4, 7, 14, 57. All patients on day 57 presented a complete absence of AK lesions in the area of ingenol mebutate application. No adverse events were observed.
**Conclusions:** Our study and all reviewed studies show that ingenol mebutate is highly efficacious and induces a generally temporary and mild to moderate local skin response. Even in cases where severe skin reactions appear, the final cosmetic effect is good and satisfying for patients. These findings suggest that ingenol mebutate could be a first line field treatment for actinic keratosis.

## MELKERSSON-ROSENTHAL SYNDROME IN A PATIENT WITH ANKYLOSING SPONDYLITIS TREATED WITH ETANERCEPT

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**Introduction:** Melkersson-Rosenthal syndrome is a rare condition affecting the nervous system and skin. Fully symptomatic form is characterized by recurrent orofacial swelling, recurrent facial paralysis and a fissured tongue. Nevertheless, the presence of the complete triad in a patient is relatively rare — in app. 25% of all cases. A significant phenomenon is cheilitis granulomatosa, which makes it possible to investigate the Melkersson-Rosenthal syndrome within the group of granulomatous diseases, such as sarcoidosis or Crohn's disease.
**Material and methods:** The 55-year-old woman with a persistent edema of the upper lip was admitted to our Department, as she showed no response to antihistamine therapy, glucocorticoid treatment and topical tacrolimus. The presence of a fissured tongue was also found in the physical examination. The Melkersson-Rosenthal syndrome was diagnosed on the basis of the clinical picture as well as the histopathological examination. The patient has been suffering from ankylosing spondylitis for 23 years and she was treated with etanercept for a few months before the occurrence of edema. Because of the possible side effects of etanercept treatment, the medicine was later replaced by infliximab.
**Conclusions:** It seems that in anti-TNF-treated patients, sarcoid granulomatous reactions of various kinds are observed more frequently for a soluble receptor in the dimeric form than for the anti-TNFα monoclonal antibody. This may be caused by etanercept's different biological properties as well as medicines such as infliximab or adalimumab.

## SUPERFICIAL PYODERMA GANGRENOSUM AFTER ORTHOPEDIC SURGERY: A CASE REPORT

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**Trustee of the paper:** Alicja Kryst, Marta Sar-Pomian

**Introduction:** Pyoderma gangrenosum (PG) is a rare inflammatory skin disorder of unknown etiology characterized by rapidly evolving necrotic ulcers with undermined edges. In many cases, lesions often occur at a site of surgery in an immediate post-operative period, as a result of a phenomenon defined as pathergy.
**Material and methods:** We present an 81-year-old patient with a non-healing wound in the left wrist after an anastomosis of the distal end fracture with a plate and screws. Initial therapy according to the guidelines for the treatment of ulcers proved to be challenging and insufficient. Immunohistochemistry findings showed increased kappa serum light chain titer, normocytic anemia and hypoalbuminemia. Eventually histological examination defined the nature of neutrophilic dermatosis. The final diagnosis of pyoderma gangrenosum was confirmed by collecting together clinical features and biopsy findings and successful systemic corticosteroid therapy was performed.
**Conclusions:** We showed that pyoderma gangrenosum represents a diagnostic and therapeutic challenge, because of the difficult differential diagnosis of painful ulceration mimicking infection of the operative site. There is no gold standard of treatment for PG. Therefore the disease should always be suspected when painful ulceration is aggressively progressing on surgical sites.

## PEMPHIGOID GESTATIONIS — AS A RISK FACTOR FOR ADDITIONALLY PREGNANCY COMPLICATIONS

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**Introduction:** Pemphigoid gestationis (PG) is a rare autoimmune subepidermal blistering disease occurring in the second or third trimester of pregnancy. It typically manifests with inflammatory skin lesions and severe pruritus, starting around the umbilicus and spreading around the whole body. Maternal anti-BP-AG2 antibodies are responsible for skin lesions but also interact with placenta antigens, weakening its function. Therefore PG is associated with preterm labor or small-for--gestational-age newborns.
**Material and methods:** The 23-year-old woman with epilepsy, at 36$^{th}$ week of her second gestation, was admitted to the 1st Department of Obstetrics and Gynecology due to the presence of severe pruritus, serous subepidermal bullae and weak fetal movements. Up to 35$^{th}$ week the course of pregnancy was uncomplicated and the patient did not require antiepileptic therapy. On examination fresh bullous lesions along with old healed scar marks on the abdomen and limbs were observed. After dermatological consultation PG was diagnosed. Topical corticosteroids and antipruritic drugs were introduced with good clinical effect. No abnormalities in cardiotocograms or ultrasound scan were detected. However, due to the nature of the disease labor induction was performed at 37 week of gestation. Due to the signs of imminent fetal asphyxia cesarean section was performed. A healthy male newborn weighting 3290 g without any skin lesions was born. Few days later the mother and her child were discharged home in a good general condition.
**Conclusions:** As PG may be associated with adverse pregnancy outcomes, a multidisciplinary approach with an appropriate pharmacotherapy and close fetal monitoring is required.

## COEXISTENCE OF BULLOUS PEMPHIGOID AND DERMATITIS HERPETIFORMIS — A RARE CASE REPORT

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**Trustee of the paper:** Patrycja Gajda

**Introduction:** Dermatitis herpetiformis (DH) and bullous pemphigoid (BP) are bullous autoimmune diseases of the skin microscopically characterized by subepidermal blisters.
**Material and methods:** A 64-year-old man presented with disseminated erythematous papules, tense blisters and erosions on the trunk,

buttocks, extremities and scalp with concomitant persistent pruritus. First lesions have already developed a year before and since then had increased in number. Direct immunofluorescence examination revealed linear deposition of IgG IgM at the basement membrane zone as well as granular deposits of IgA, IgM and IgG in the papillary dermis. Indirect IMF detected circulating anti-BMZ IgG at a titer of 1:5 with epidermal binding on salt-split skin. Histopathological examination of a skin lesion showed a marked necrosis of the epidermis, interstitial dermis edema with scattered eosinophils. Dapsone, doxycycline, topical clobetasol propionate and a gluten-free diet were initiated. A partly resolution of the skin lesions and significant reduction of pruritus was achieved.
**Conclusions:** There are only a few cases in the literature describing concomitance of dermatitis herpetiformis and bullous pemphigoid. The etiological and pathogenetic processes that cause this rare coexistence are not fully understood. Further studies are needed to elucidate the pathogenesis of these bullous diseases.

## DERMOSCOPY OF DARIER'S DISEASE

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**Trustee of the paper:** Marta Sar-Pomian, Agata Szykut

**Introduction:** Darier's disease is an autosomal dominant genodermatosis characterised by hyperkeratotic papules occasionally accompanied by pruritus. This condition is usually diagnosed on the basis of clinical picture and histopathological examination. We present a case of Darier's disease along with dermoscopic findings to show the usefulness of this method in non-invasive diagnosis of this condition.
**Material and methods:** A 20-year-old man presented with a 5-year history of keratotic follicular papules localized on the upper chest and the neck. Nails abnormalities, such as split and thinning of the distal parts of the finger nail plates were observed. Dermoscopy of the skin lesions revealed polygonal, star-like or roundish-oval-shaped, yellowish-brownish areas surrounded by a whitish halo localized on a pinkish homogeneous background. The onychoscopy showed red and white longitudinal bands and characteristic "V-shaped notch". The histopathology of the skin lesion showed acantholysis, parakeratosis and dyskeratosis with characteristic corps ronds and grains which was consistent with Darier's disease. The patient was initially treated with systemic acitretin which was substituted with oral isotretinoin due to increased hair loss and skin dryness. A major improvement of skin lesions was observed after one month.
**Conclusions:** Our case report illustrates the importance of dermoscopy in the early diagnosis of Darier's disease. Its dermoscopic picture differs from bacterial folliculitis and seborrheic dermatitis, which are main differential diagnoses of Darier's disease. Furthermore, Darier's disease has also specific onychoscopic picture. In conclusion, dermoscopy of skin and nails can be regarded as a useful non-invasive tool in the diagnosis of Darier's disease.

## DERMOSCOPIC FEATURES OF FAMILIAR ANGIOKERATOMA

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**Introduction:** The term angiokeratoma refers to vascular skin lesions that appear as black-red papules and plaques, separate or arranged in clusters. Although the etiopathology is still unknown, genetic predisposition, pregnancy and trauma could be the main causal factors. Five clinical forms of angiokertomas have already been described in literature. The aim of this study was to analyze a dermoscopic pattern of angiokeratoma diagnosed at the Department of Dermatology at Medical University of Warsaw.
**Material and methods:** The case concerned a histologically confirmed angiokeratoma in a 53-year-old female with a 28-year history of a 10-cm vascular malformation consisting of black papules on the left buttock. The first lesion appeared during pregnancy. Similar vascular malformations were present on her father's skin. Dark and red lacunae, a whitish veil and peripheral erythema have been observed dermatoscopically. The patient has been scheduled for a laser therapy.
**Conclusions:** Several dermoscopic structures of pregnancy — induced angiokeratoma with a family history have been identified. Usually a clinical diagnosis of angiokeratoma is sufficient but the presence of red and dark lacunae with whitish veils could help to differentiate pigmented lesions such as melanomas and other vascular structures from angiokeratoma under dermoscopic examination.

## DERMATOSCOPIC EXAMINATION OF EXTRAGENITAL LICHEN SCLEROSUS

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**Introduction:** Lichen sclerosus (LS) is chronic, inflammatory skin disease of unknown etiology. The peak incidence occurs between 50–60 years of age and in majority of cases it affects women. It is usually located in the anogenital region and is accompanied by severe pruritus, easy bleeding, pain and dysuria. Extragenital location of LS in areas such as shoulders or trunk is more uncommon and usually remains asymptomatic. Porcelain-white papules which demonstrate a tendency to coalesce into bigger patches with follicular hyperkeratosis are characteristics of the LS. There are only few descriptions of dermatoscopy of LS in the literature.
**Material and methods:** A 58-year-old woman presented with LS located on the trunk, in the inguinal region, on the labia majora as well as vulval mucosa. The first lesions appeared about 3 years ago and gradually increased. In the diagnostic process both histopathological and dermatoscopic examinations of extragenital lesions were used and correlated. Dermatoscopy revealed white structureless areas, thin, sharply branching telangiectasias of different length, yellowish circles and multiple small black dots. White structureless areas corresponded to dermal sclerosis, yellowish circles to follicular plugging and multiple small dots to scattered melanophages indicative of the resolved interface dermatitis.
**Conclusions:** Growing popularity of dermatoscopic examination arises the possibility of application of this method in LS. Evaluation of more cases will allow to determine to what extent the dermatoscopic image corresponds to histopathological findings and disease activity. It could be tempting to consider dermatoscopy as potential method of choice in LS diagnosis in the future.

## DRUG-INDUCED CUTANEOUS LUPUS ERYTHEMATOSUS — A DESCRIPTION BASED ON A CASE PRESENTATION

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**Introduction:** Some medications may induce an autoimmune response leading to the development of drug-induced lupus erythematosus (DILE) or subacute cutaneous lupus erythematosus (SCLE).
**Material and methods:** We present a case of 82-year-old Caucasian man receiving treatment for Hodgkin's lymphoma (COP regimen of chemotherapy: cyclophosphamide, vincristine, prednisone) and propafenone and bisoprolol on a regular basis. The patient developed the manifestations after introduction of allopurinol which occurred two weeks after completing the second course of chemotherapy. Cutaneous erythemato-edematous and erythemato-exfoliative lesions occurred in a photodistributed pattern along with the commencement of allopurinol administration. Laboratory tests showed circulating antinuclear antibodies (Ro antibodies at a titer of 1:640) and slight leukocytosis (12 040/mm3) with elevated lymphocyte and monocyte count. Skin biopsy showed lesions at the dermo-epidermal junction characteristic of SCLE or adverse drug reaction. Direct immunofluorescence (DIF) of non-lesional skin from the lesional edge showed granular IgG deposits. Discontinuation of allopurinol and introduction of systemic treatment with systemic and topical corticosteroids resulted in the resolution of active cutaneous lesions. However, post-inflammatory discoloration remained on the skin.
**Conclusions:** It is unknown whether the disease was drug-induced or related to systemic diseases — Hodgkin's lymphoma and its treatment.

A full clinical picture of the patient, histopathological findings and DIF do not provide an unambiguous diagnosis. The patient met the criteria of SCLE diagnosis as well as adverse drug reaction. Taking into consideration that both drug-induced SCLE and DILE might be provoked by many medications from different therapeutic groups, the awareness of mentioned diseases is crucial while diagnosing skin lesions.

## CLINICAL, DERMOSCOPIC AND HISTOLOGICAL CHARACTERISTICS OF MAMMARY PAGET'S DISEASE AND NIPPLE ECZEMA — THE STUDY OF TWO CASES

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**Introduction:** Paget's disease is a distinct, rare subtype of breast cancer. It clinically presents as an unilateral erythema with associated vesicles and erosions or scaling. The main differential diagnosis is nipple eczema, which occurs more commonly. The final diagnosis is made based on histopathological examination.
**Material and methods:** We report the cases of two female patients (19- and 43-year-old) who presented to Department of Dermatology, Venerology and Allergology Medical University of Gdańsk with unilateral erythematous lesion on the breast. In both cases clinical and dermoscopic assessment was performed. The histopathological examination revealed the features of nipple eczema and mammary Paget's disease, respectively.
**Conclusions:** Based on authors' observation it seems that dermoscopic presentation of nipple eczema and mammary Paget's disease is different. We have found only one case report describing dermoscopic features of non-pigmented mammary Paget's disease. The future studies are needed to establish the role of dermoscopy in this area.

## WHAT NOT TO MISS IN ANOGENITAL REGION? A CASE OF EXTRAMAMMARY PAGET'S DISEASE

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**Introduction:** Extramammary Paget's Disease (EMPD) is a rare intraepithelial adenocarcinoma, which predominantly affects postmenopausal, female patients. It targets cutaneous areas that are rich in apocrine glands. The most common location is the vulva, followed by the perianal or genital region. Clinical diagnosis must be confirmed by histopathology that reveals the presence of typical Paget cells.
**Material and methods:** A 54-year-old male patient presented to the Department of Dermatology with an erythematous — desquamative patch in a suprascrotal area with a minor scrotal skin involvement. The lesion was approximately 5cm in diameter, sharply demarcated and appeared a year before. The patient denied allergic diseases and family history of psoriasis. Empirically initiated antifungal treatment was not effective and properly carried out mycological examination excluded fungal infection. Videodermoscopy revealed a polymorphous vessel pattern with prominent irregular linear, glomerular and dotted vessels. Additionally structureless white-pink areas were present. Subsequently a biopsy was performed with a suspicion of Bowen disease based on clinico-dermoscopical correlation. Histopathological findings were characteristic for extramammary Paget disease. The patient was consulted surgically and first treated with 5% topical imiquimod.
**Conclusions:** Differential diagnoses of EMPD include: Bowen's disease, fungal infection, eczema and psoriasis. Every skin lesion in anogenital area, that is unresponsive to treatment, should be suspected for EMPD regardless the gender. Dermoscopy may be helpful in diagnostic process of EMPD.

## ENDOVASCULAR MANAGEMENT OF NECK SKIN CANCER LESION BLEEDING

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**Introduction:** Skin cancer progression during palliative treatment can lead to arteries infiltration and uncontrolled hemorrhage from skin cancer lesion, that can be fatal to the patient.
**Material and methods:** A 80-year-old patient with skin cancer of neck and right supraclavicular region after palliative radiotherapy was admitted to hospital because of the bleeding from one of cancerous ulceration in the neck region. After initial haemostasis and stabilizing the patient, arteriography of aortic arch was performed. It visualized branching of right subclavian artery which were supplying cancerous lesions and caused bleeding. Covered stent was implanted in right subclavian artery occluding its branches with preserved patency of vertebral artery. Patient was discharged from hospital 3 days after procedure, post-operative recovery was uneventful.
**Conclusions:** Hemorrhage caused by cancerous skin lesions can be treated using endovascular approach. Implanting endovascular prosthesis occluding pathological vessels can minimize risk of recurrence of bleeding. Further studies are needed to evaluate long-term effects of such approach.

## DISSEMINATED GRANULOMA ANNULARE COEXISTING WITH NEOPLASM IN TWO PATIENTS — RELATIONSHIP OR COINCIDENCE?

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**Introduction:** Granuloma annulare (GA) is a chronic granulomatous dermatosis of unclear etiopathology with an estimated incidence of 0.1–0.4%. Generalized GA has been associated with systemic diseases but also malignant neoplasms.
**Material and methods:** CASE 1: A 58-year-old patient was admitted due to the 7-month history of multiple disseminated, red papules and erythematous plaques on the neck, trunk and upper limbs. After 2 months of the onset of them the metastases to lymph nodes of squamous cell carcinoma of unknown origin were diagnosed. The histopathological examination confirmed GA. After skin biopsy regression of the lesions occured. CASE II: A 59-year-old man with diagnosed one month earlier laryngeal squamous cell carcinoma was admitted due to the 8 years history of numerous disseminated papules on the trunk, upper and lower limbs. The histopathological examination revealed GA.
**Conclusions:** Generalized granuloma annulare concerns 9–15% of patients with GA and might be associated with systemic diseases or malignancy. The primary skin lesions are often non-specific, with atypical location. The presented cases emphasize the need for diagnostic examinations for cancer in patients with generalized GA.

## WHEN TO THINK ABOUT ACRODERMATITIS CHRONICA ATROPHICANS?

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**Introduction:** Acrodermatitis chronica atrophicans (ACA) is a late manifestation of borreliosis mainly located on extremities. It begins with inflammatory stage characterized by bluish red discoloration and cutaneous swelling. Two cases of ACA with various presentation are presented.
**Material and methods:** 29-year-old woman was suspicious of connective tissue disease presenting with Raynaud's phenomenon for eight years and violaceous discoloration on the left buttock, both knees and left foot for seven years. At admission, fingers and extensor part

of her left hand were also reddish. Patient denied arthritis, loss of hair, erosion of the mucosal membrane and decreased exercise tolerance. In serological tests: ANA(-), ACA(-), lupus antibody(-), cryoglobulin(-), RF(-), ANCA(-). ELISA for B. burgdorferi IgG was positive and IgM negative. Venous ultrasound was unremarkable. DIF from her left leg was negative. Histological examination of the biopsy from her buttock demonstrated multiple dilated blood vessels, perivascular and interstitial inflammation containing many plasma cells and focally thickened collagen fibers characteristic of acrodermatitis chronica atrophicans. 59-year-old woman with a two year history of erythema on the extensor surface of her right hand treated as contact dermatitis without any improvement. Digital joints were edematous. Rheumatic diseases were excluded. Skin biopsy of the right hand was characteristic for acrodermatitis chronica atrophicans. ELISA to Borrelia IgG was positive. The woman was treated with oral doxycyclin with a good response.

**Conclusions:** ACA has to be considered in any case of acral asymmetric, red-violaceous discoloration of skin with visible vasculature. The diagnosis must be confirmed by combining clinical, serologic and histopathological results.

## ADALIMUMAB — SAFE AND EFFECTIVE THERAPY FOR PEDIATRIC PATIENT WITH SEVERE PSORIASIS AND IMMUNE THROMBOCYTOPENIA

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**Introduction:** Psoriasis is a cutaneous, chronic inflammatory disorder that affects approximately 4% of adults and up to 2% of children worldwide. Early onset during childhood or adolescence has a significant impact on the quality of life. Pediatric psoriasis may be associated with various comorbidities, including metabolic syndrome, atopy, celiac disease and alopecia areata. Immune thrombocytopenia is one of the most common acquired bleeding disorders in children that is developed secondary to the production of auto-antibodies against platelets. The association of immune thrombocytopenia and psoriasis has been reported rarely. Due to potential platelet-lowering effect of immunosuppressive drugs, systemic treatment of pediatric psoriasis coexisting with immune thrombocytopenia is a real clinical challenge.

**Material and methods:** We present a case of 17-year-old girl with immune thrombocytopenia and severe plaque psoriasis. The patient was previously treated with PUVA therapy, acitretin (0.5 mg/kg bw/day), methotrexate (20 mg/week) and cyclosporine (3.5 mg/kg bw/day) but she never obtained a clinically meaningful response. At the time of admission to our Department psoriasis area severity index (PASI) score was assessed at 34.9 and body surface area: 48%. The patient received adalimumab, a human anti-TNF monoclonal antibody, 40 mg subcutaneously every 2 weeks.

A rapid improvement was seen after first two injections, with almost complete remission during the following weeks. During biologic therapy we did not observe any adverse events. The platelet count moderately increased.

**Conclusions:** Psoriasis and immune trombocytopenia are quite common in pediatric population, but their coexistence is rare. Altered TNF expression could be a pathogenic linkage and therapeutic target for these diseases.

# REVIEWS — ORAL E-POSTER

## PSORIASIS VULGARIS AND ENDOCRINE DISORDERS — A PROBLEMATIC RELATIONSHIP

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Psoriasis vulgaris (PV) is an autoimmune disease characterized by hyperproliferation of keratinocytes, which can significantly reduce the quality of life. A number of exogenous and endogenous factors is known to induce or exacerbate the course of PV. Among the potential endogenous triggering factors, there can be found various disorders of endocrine system. Here we present the most important correlations between hormonal dysfunctions and PV. Stress hormones, like cortisol and epinephrine, exert pleiotropic effects on both, immune system and skin. Comparing to healthy controls, patients with PV tend to present higher levels of epinephrine and lower levels of cortisol. Cortisol deficiency promotes inflammatory responses in keratinocytes. Also sex hormones may play an important, but still unclear, role in the pathogenesis of PV since many studies have demonstrated the anti-inflammatory effects of estrogens.
On the other hand, estrogens stimulate keratinocytes proliferation and angiogenesis which can potentially induce the development of PV. It has been reported that also prolactine (PRL) and growth hormone (GH) have an immunostimulative activity which can promote the development of PV. They may induce keratinocytes proliferation and angiogenesis as well. While patients with prolactinoma often present symptoms of PV, it has been suggested that bromocriptine, which decreases PRL levels, can also reduce the severity of PV symptoms. Finally, thyroid hormones may be involved in the pathogenesis of PV as they affect proliferation and differentiation of the skin cells. However, the results of the studies on this issue are highly inconsistent and require further confirmation.

## THE ROLE OF VITAMIN D3 IN THE TREATMENT OF PSORIASIS

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In this study we aimed at determining the impact of vitamin D3 on the psoriatic patients. Vitamin D3 is a steroid hormone, converted in the skin from 7-dehydrocholesterol to cholecalciferol by the UV irradiation. An active form of vitamin D3 (calcitriol or 1.25[OH]2D3) is formed in further reactions. It binds to a nuclear receptor-VDR, located in the skin cells. By that, the expression of over 900 significant genes is regulated. Vitamin D3 and its analogs influence proteins (p21 and p27) and enzymes (CDKs) that participate in the cell cycle. Consequently, they control proliferation, differentiation and apoptosis of keratinocytes. Moreover, vitamin D3 modulates the immune response and regulates cathelicidin antimicrobial peptide production. It is also suggested that calcitriol and its metabolites play a role also in the photoprotection and have anti-cancer activity. The vitamin is widely used in the psoriasis treatment due to its antiproliferative and pro-differrentiative effects on epidermal cells. It has anti-inflammatory activity, for example, in suppressing IL-2 gene transcription. Additionally, vitamin D3 inhibits the increased synthesis of cathelicidins, which contribute to self-DNA aggression in psoriasis. Taking into consideration its effects, vitamin D3 and its analogs, in particular calcipotriol and tacalcitol have been implemented in practice. The vitamin D3 therapy focuses mainly on topical treatment which stimulates the immune tolerance using Tregs. Phototherapy, for instance PUVA increases the level of 25-hydroxyvitamin D in the skin, and both this treatment and oral supplementation with vitamin D3 may be used and were examined in this study.

## THE GUT-SKIN CONNECTION. HOW GUT MICROBIOME AFFECTS THE DEVELOPMENT OF PSORIASIS AND PSORIATHIC ARTHRITIS?

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At the recent time the scientific society has gained an insight into the importance of the intestinal resident flora for the host's health and disease. In fact a gut microbiota plays an essential role in modulating innately and acquiring immune responses, thereby has an influence on the balance of inflammation and tolerance. The fact that both the gut and the skin engage in the connections goes back to the first half of the 20$^{th}$ century, notably to the dermatologist Stokes and Pillsbury. Nowadays aspects of this theory have been further proven by modern scientific investigations.
Psoriasis is a common immune-mediated chronic inflammatory skin disease and about 30% of people with psoriasis also develop a form of inflammatory arthritis ca lled psoriatic arthritis. The pathogenesis of the diseases haven't been fully understood — Th17 cells and the cytokines they produce, such as IL-17, IL-22 and IL-23, play a critical role in the pathogenesis of psoriasis. Gut microbiota, as the modulating factor of an immune response, can influence on the development and pathogenesis of psoriasis and psoriatic arthritis. The aim of this review is to present the recently investigated role of a gut microbiome in psoriasis and psoriatic arthritis.

## COLOSTRUM BOVINUM SUPPLEMENTATION IN THE TREATMENT OF PSORIASIS

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Psoriasis vulgaris is a chronic inflammatory disease that primarily affects the skin. The typical areas of the body with skin lesions are elbows, knees and scalp, but skin patches may be found on any part of the skin. Psoriasis is linked to depression, social stigmatization and pain. The pathogenesis of psoriasis is still unknown, but some studies suggest that this disease is mediated by Th1 lymphocytes. We also know that psoriatic lesions are characterized by the infiltration of T lymphocytes. Bovine colostrum is the first milk produced by cows during the first days postparturition. It contains immunoglobulins and growth factors such as the insulin-like growth factor (IGF) or the epidermal growth factor (EGF) as well as pro-inflammatory cytokines such as interleukin-1β, interleukin-6, TNF-α and interferon-γ. The available studies suggest a beneficial effect of supplementation of bovine colostrum in immune-deficiency syndromes. Some studies suggest that bovine colostrum may suppress Th1 immune response and down-regulate the activity of infiltrated T-cells. Further research is needed to confirm the positive therapeutic effect of bovinum colostrum in patients with psoriasis.

## SKIN EQUIVALENT OF HPA AXIS AND ITS ROLE IN PATHOGENESIS OF PSORIASIS

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In response to stress factors such as chemical or mechanical injury, exposure to UVB radiation or infection, skin expresses all crucial elements of hypothalamus-pituitary-adrenal axis neuroendocrine system: corticotropin-releasing hormone (CRH), ACTH and glucocorticosteroids, especially cortisol. The biosynthesis of steroid hormones begins with mobilization of cholesterol from cellular stores to the mitochondrial inner membrane,

where CYP11A1 constitutively converts it into pregnenolone. Increased provision of cholesterol by StAR protein leads to a corresponding rise in the rate of pregnenolone production. The locally produced pregnenolone undergoes further transformation to glucocorticosteroids. Besides the complete set of enzymes necessary for steroidogenesis, the skin also expresses 11βHSD1, which activates cortisol from inactive cortisone, and 11βHSD2 that works in the opposite direction. The expression and activity of the two forms of 11βHSD vary within the localization of the skin, changes with aging and can be modified by the action of pharmaceutical agents. The concept of deficient endogenous glucocorticosteroidogenesis affecting cutaneous immunity as an important factor in pathogenesis of psoriasis has been verified and validated by Hannen et al. (2017). The researchers detected very low concentrations or even absence of StAR protein and reduced expression of CYP11A1 in skin lesions. Expression of 11βHSD 1 and 2 was significantly decreased in skin lesions. It was assessed that psoriatic keratinocytes synthesized *de novo* substantially less cortisol than healthy keratinocytes. Glucocorticoid receptor expression was also diminished. It has been suggested that restoration of local glucocorticoid signaling system might be a new therapeutic approach for psoriasis treatment.

## DUPILUMAB — A BREAKTHROUGH IN THE TREATMENT OF ATOPIC DERMATITIS?

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Atopic dermatitis is among the most common inflammatory skin diseases in children and adults. The disease poses a significant burden on health-care resources and patients' quality of life. Therefore, there is a large unmet need for safe and effective therapeutics for this condition. Over the last few years, new advances in the understanding of pathophysiological mechanisms in atopic dermatitis have led to the identification of specific therapeutic targets. Dupilumab, a fully human monoclonal antibody, is directed against IL-4 receptor alpha subunit. It blocks the signaling pathways of key Th2 cytokines — IL-4 and IL-13. In March 2017, the US FDA approved dupilumab for the treatment of moderate to severe atopic dermatitis in adults not adequately controlled by topical therapy. The approval was based on the results of three randomized trials (SOLO 1 and 2, LIBERTY AD CHRONOS). They showed significant reduction in atopic dermatitis activity assessed by the most frequently used disease-severity instruments (EASI, IGA and SCORAD). Dupilumab was also associated with improvement in pruritus, sleep and quality of life. The medication is administered as a subcutaneous injection, with an initial dose of 600 mg followed by 300 mg every two weeks. The most common reported adverse effects have included ocular symptoms (conjunctivitis, blepharitis, keratitis, xerophthalmia, pruritus), herpes simplex virus infections and injection site reactions. The efficacy of dupilumab confirmed the pivotal role of IL-4 and IL-13 in the pathogenesis of atopic dermatitis. This biologic seems to be a long-awaited breakthrough in the treatment of atopic dermatitis.

## MICRONUTRIENTS — UNDERESTIMATED FACTORS IN DEVELOPMENT AND TREATMENT OF ALOPECIA AREATA?

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Alopecia areata is an autoimmune form of non-scarring alopecia that can affect any hair-bearing area. The frequency of the disease ranges from 0.7% to 3.8% of patients attending dermatology clinics. Although the exact pathogenesis of alopecia areata remains to be clarified, genetic predisposition, autoimmunity and environmental factors have been discussed. Furthermore, it has been hypothesized that deficiency of micronutrients may represent a modifiable risk factor associated with development of the disease. The aim of this review is to present the role of micronutrients in alopecia areata. A systematic review of the literature was performed by searching the PubMed and complemented by a thorough hand search of reference lists. All of the selected articles were published in English, with the first one dating from 1981. Compared to controls, patients with alopecia areata were found to have a decreased serum concentration of vitamin D, zinc and folate. It has also been observed that too low or too high level of vitamin A may favor the development, maintenance, or progression of alopecia areata in mice. The role of vitamin B12, copper, magnesium and selenium in pathogenesis of alopecia areata remains equivocal, because previously reported studies presented insufficient or conflicting data. In conclusion, micronutrients may have influence on pathogenesis of alopecia areata. However, more large-scale prospective studies are needed to confirm the role of micronutrients in pathogenesis of alopecia areata as well as effectiveness of micronutrient supplementation in treatment of the disease.

## ALOPECIA AS A SYMPTOM IN HASHIMOTO'S DISEASE AND OTHER TH-17 LYMPHOCYTE RELATED AUTOIMMUNE DISEASES

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Th-17 cells play a role in adaptive immunity protecting human organism from pathogens. They are also implicated in autoimmune and inflammatory disorders. It has been proven that their overactivation can cause an inappropriate amount of systemic inflammation and leads to numerous inflammatory-related disorders such as Hashimoto's disease, multiple sclerosis, diabetes mellitus type 1 (DM1), psoriasis. In patients with autoimmune Th-17 lymphocyte-related diseases a chronic telogen effluvium is observed more often than in general population. Moreover, a single patient can be often diagnosed with multiple autoimmune diseases also with autoimmune special type of hair loss — alopecia areata (AA). The involvement of Th-17 cells has also been shown in allergen-specific immune responses and is associated with the severity of AD. In our review we will focus on alopecia among patients suffering from Th-17 lymphocyte-related diseases (autoimmune diseases) and show the correlation between hair loss and changes of immunity.

## THE ROLE OF FRACTIONAL $CO_2$ LASER IN THE TREATMENT OF NEOPLASTIC SKIN LESIONS

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Advances in laser technology in recent decades have increased the options for the treatment of dermatologic conditions. Lasers may be an alternative for surgical excision and other forms of therapy. Among many laser types, the carbon dioxide ($CO_2$) laser remains an important system for the dermatologist. Carbon dioxide laser ablation can be used safely with good cosmetic outcome and low recurrence rate. This study has demonstrated a potential role of using of laser therapy in the treatment of benign skin tumors. Based on the reviewed literature, laser treatment has generally been proven to be a safe and effective therapy for some benign skin neoplasm with minimal side effects. The group of indications regarding benign tumors and organoid nevi is very heterogeneous. For these indications, patients often search help for cosmetic reasons. Despite their benign nature, many of these neoplasms cause aesthetic or symptomatic distress and require removal. Ablational laser systems are established treatment devices for benign skin tumors. They obtain good cosmetic results with mostly minimal side effects. As laser technology continues to advance, we are sure to see improvements in current treatments, as well as development of new applications of cutaneous lasers. Review of the literature demonstrates the progress of dermatological understanding of the clinical implications of laser therapy in the treatment of neoplasms of the skin.

## DRESS SYNDROME: PATHOGENESIS, CLINICAL PRESENTATION AND TREATMENT

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The Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS) is a rare, potentially life-threatening drug-induced hypersensitivity reaction. It is frequently caused by allopurinol and antiepileptic drugs. The pathogenesis of DRESS is not fully understood. A key factor is a drug--specific immune response, occurring in genetically predisposed persons. Reactivation of several viruses may also play a role in this condition. DRESS can be characterized with widespread skin lesions, typically with maculopapular rash, which can turn into erythroderma, accompanied by fever. Hematologic abnormalities (eosinophilia, atypical lymphocytosis), lymphadenopathy and internal organ involvement (such as liver, kidney, lungs, heart, central nervous system involvement) can occur. A long latent period after intake of the inciting drug and a prolonged and protracted clinical course is typical. The diagnosis of DRESS is challenging because the pattern of cutaneous eruption and the types of organs involved are various. The main management of DRESS is withdrawal of the culprit drug. Topical and, in severe cases, systemic corticosteroids can be used. Most patients with DRESS recover completely in weeks to months after drug withdrawal.

## SKIN MANIFESTATIONS OF GLUTEN INTOLERANCE

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Dermatitis herpetiformis is a chronic bullous disease of the skin, which is considered as a skin manifestation of gluten intolerance. It is the most common in 20–40 year old people, more often in men than women. It is characterised by polymorphous lesions, localized symmetrically, especially on the elbows, knees and in the lumbar area with intense burning and itching. 80–90% cases of DH in the Caucasian race are connected with the genotypes HLA DR3 and HLA DQw2, whereas in the Mongoloid race — with the genotypes HLA Cw3, HLA A2 and HLA DR9. In people affected by DH we can observe granular IgA deposits in the dermal papillae, both in involved and uninvolved skin. In the blood serum they are detectable specific antibodies gainst transglutaminase autoantigens and also against endomysium, gliadin and reticuline. In diagnosis of DH we may use direct and indirect immunofluorescence, ELISA and dermatoscopy. The treatment of choice consists of dapsone and a strict gluten-free diet. There are also atypical forms of dermatitis herpetiformis, which we describe in this paper. Nowadays more and more another diseases of the skin and mucous membrane are reported as possibly connected with celiac disease or non-celiac gluten intolerance. We can divide these conditions into four groups: autoimmune, allergic, inflammatory and miscellaneous. In this article we describe diseases of the skin and mucous membrane connected with gluten intolerance, differentiating them into the illnesses strongly connected with gluten intolerance or which connection with gluten intolerance is considered controversial.

## THE USE OF HIGH-DOSE INTRAVENOUS IMMUNOGLOBULIN IN DERMATOLOGY

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The specimen of immunoglobulins consists of proteins, salts and carbohydrates, but it's major components are antibodies (mainly IgG). The mechanism of their action is multidirectional and they affect the immune system. Initially intravenous immunoglobulins have been used in immune deficiencies and infectious diseases' treatment. However, recently, the indications for the use of IVIG have been extended. They are applied in many acute dermatological diseases with severe course when skin or internal organs are rapidly involved. The most urgent indication in dermatology for intravenous admission of immunoglobulins is toxic epidermal necrolysis, which is a life-threatening disease. It has emerged, that IVIGs can be also effective in Stevens-Johnson syndrome, acute lupus erythematosus, antiphospholipid syndrome, rapidly progressing pyoderma gangrenosum, scleromyxedema, autoimmune blistering skin diseases, dermatomyositis and folliculitis decalvans. On the basis of the European Guidelines and literature review the main dermatological indications for the use of high dose (2.0 g/kg/cycle or more) of intravenous immunoglobulins will be discussed in our presentation, including both well-established and rare conditions. Intravenous administration of immunoglobulin has been proven to be an effective and safe treatment of many dermatological conditions, particularly those of the severe course. In toxic epidermal necrolysis, IVIGs significantly improves prognosis, as well as in other cases. Additionally, they are well-tolerated and trigger mainly mild adverse effects, which can be managed by symptomatic medicines. IVIG's are contraindicated for patients suffering from congenital IgA deficiency, who possess anti-IgA antibodies.

## SYSTEMIC PHOTOPROTECTION

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Ultraviolet radiation in sunlight contributes to photoaging and photocarcinogenesis. It modifies DNA, cellular antioxidant balance, signal transduction pathways, immunology, and the extracellular matrix. Some oral substances that counteract the effects of ultraviolet radiation were identified. Many of these ingredients are phytochemical derivatives that include polyphenols and non-polyphenols. The sources of polyphenols include: green tea, cocoa, soy, pomegranate, grape, resveratrol, silymarin, genistein and Polypodium leucotomos.
Polyphenols have antioxidative, anti-inflammatory and immunoprotective properties. Main flavonoids of Radix Scutellariae are baicalin and wogonoside. Enzyme-treated Radix Scutellariae is efficient in preventing ultraviolet B-induced photoaging. The non-phenolic phytochemicals include: carotenoids, caffeine and sulphoraphances. Drinking large amounts of coffee reduces the basal cell carcinoma risk. Dietary fish oils that contain omega-3 polyunsaturated fatty acids can minimize ultraviolet-induced inflammation, probably because of reducing prostaglandin E2 production. The oral retinoids are likely to prevent squamous cell carcinomas, basal cell carcinomas and reduce actinic keratoses. It is controversial whether exogenous supplementation of non-enzymic antioxidants, e.g. vitamin E, C or carotenes is an appropriate way of averting photocarcinogenesis. At low doses of ultraviolet radiation, oral supplementation of selenium in combination with antioxidant vitamins prevents production of sunburn cells. Also, supplementation of nicotinamide protects the skin against photo immunosuppression. Antimalarial drugs exhibit photoprotective properties due to an unidentified mechanism. It is speculated it occurs due to inhibition of inflammatory response of keratinocytes, absorption of particular sunlight waves or through induction of c-jun transcription. All of these systemic strategies have a potential to provide some level of photoprotection.

## THE SIGNIFICANCE OF PROLACTIN IN DERMATOLOGY IN THE LIGHT OF THE LATEST REPORTS

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Prolactin is a pituitary hormone best known for its role as a lactation stimulator in the mammary gland and reproduction facilitator in the gonads, however it has a variety of other less-known functions in the human body. As the prolactin secretion and receptors were found in skin and its appendages, the aim of our review is to highlight newly discovered aspects of prolactins, role in the etiopathogenesis of dermatologic diseases. The influence of prolactins' central and peripheral expression in conjunction with the pathogenesis and exacerbations

of the disease has been studied in many skin conditions, for example psoriasis, lupus erythematosus, extramammary Paget's disease, alopecia. The precise mechanism of prolactin function in the etiopathogenesis of skin conditions is still not well-known, however great progress has been made in the recent years. Summarizing we believe further research into the role of prolactin in skin disorders could shed some light on the pathophysiology of certain skin diseases and could possibly be a promising target for new therapeutic strategies.

## INTERLEUKIN-23 INHIBITORS IN DERMATOLOGY

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The rapid development of new immunomodulatory monoclonal antibodies provides opportunity to selectively target pathogenetic mechanisms in inflammatory skin diseases.
Interleukin 23 (IL-23)/T-helper 17 (Th17) immune axis has been identified to play a crucial role in the pathogenesis of psoriasis and other inflammatory dermatoses. IL-23 is a heterodimer composed of a p40 subunit also found in IL-12 and a p19 subunit exclusive to IL-23. Ustekinumab was the first biological IL-23 targeted agent approved in 2009 for the treatment of moderate-to-severe plaque psoriasis in adults. It is a fully human, monoclonal antibody that binds to the p40, thus preventing the interaction between IL-12, IL-23 and their receptors.
Novel molecules — guselkumab, tildrakizumab and risankizumab, directed specifically against p19 subunit of IL-23, are considered to be more selective and substantially effective than other biological agents. IL-23 inhibitors maintained a satisfactory safety profile with the most frequently reported adverse events being upper respiratory tract infections. The significant clinical efficacy of these agents in the treatment of psoriasis has paved the way for their evaluation in other immune-mediated diseases such as psoriatic arthritis, pityriasis rubra pilaris, atopic dermatitis or alopecia areata. However, larger randomized clinical trials and observational studies are needed to confirm effectiveness of IL-23 inhibitors in these indications.

## PROBIOTICS AS A SUPPLEMENT IN ACNE VULGARIS TREATMENT

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Acne vulgaris is a common disease in adolescents; however, the overall rates appear to be on the rise, especially among adults. The psychological sequelae in acne patients include high rates of clinical depression, anxiety and anger. The mental health impairment scores among acne patients are higher than in those with many other chronic, non-psychiatric medical conditions, including epilepsy and diabetes. The pathophysiology of acne involves excess sebum production, follicular hyperkeratinisation and inflammation. These factors may be aggravated by stress. Furthermore, stress can alter the intestinal lining by encouraging bacterial overgrowth and thereby compromising the intestinal barrier. The composition of intestinal microflora may also be disrupted by antibiotics therapies commonly used in acne. Probiotics are live microorganism with beneficial effects on the host when administered in adequate amounts. Probiotics have been widely studied because of their effects on the gastrointestinal tract and digestive functions, but these live microbes have wider applicability as evidenced by the gut-brain-skin axis theory. The potential benefit of probiotics includes the reduction of inflammation in acne. This is probably caused by the down-regulation of gene expression related to the release of inflammatory cytokines and the recruitment of pathogenic CD8 T cells while activating regulatory T cells. Probiotics can also decrease sebum content leading to lower follicular colonization by Propionibacterium acnes and decreased inflammation. Probiotics may also be considered as an adjunct for acne vulgaris treatment by providing a synergistic anti-inflammatory effect with systemic antibiotics while also reducing potential adverse events secondary to chronic antibiotic use.

## ORAL PROPRANOLOL FOR THE TREATMENT OF INFANTILE HEMANGIOMAS

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Infantile hemangiomas are the most common benign tumor of infancy, occurring in approximately 5% to 10% of infants. Despite their benign and self-limited nature, some hemangiomas can cause complications such as obstruction, ulceration or disfigurement. In 2014 the US Food and Drug Administration approved propranolol hydrochloride oral solution for the treatment of proliferating infantile hemangioma requiring systemic therapy. Overview of available methods clearly indicates that oral propranolol, a non-selective beta blocker, is the first-line treatment. Propranolol induces the regression of infantile hemangiomas via vasoconstriction, decreased expression of growth factors and triggering of apoptosis. The standard dose reported in majority of studies is 2–3 mg/kg/day. Therapy should be started at a dose of 1.0 mg/kg/day in two or three divided doses with feeds. The dose is then gradually increased. It is recommended to monitor heart rate and blood pressure before, one and two hours after the initial dose and later after every dose increase. Treatment typically ranges between 6 to 12 months, but may be longer, depending upon the initial treatment response, size and location of the hemangioma. Serious adverse effects (hypotension, bradycardia, hyperkalemia, bronchospasm, hypoglycemia) are infrequent.
The most common reported side effects are reversible and include bronchitis, sleep disorders, diarrhea and cold extremities. Reports of successful treatment of hemangiomas with systemic propranolol led to the investigation of topical beta-adrenergic receptors antagonists in the therapy of infantile hemangiomas. However, data on their safety and efficacy are limited.

## WOUND DEBRIDEMENT METHODES

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Healing chronic wounds is a long-lasting and expensive process. Effective and proper debridement is a key element that promotes healing. Is presented various debridement techniques accepted by European Wound Management Association and described the non-invasive methods applied in patients of Dermatology, Venerology and Allergology Clinic of Medical University of Gdansk. The basic, though not recommended, and ineffective method is dressing the wounds with the "dry on wet"; method. A treatment method that can be used in outpatient settings is purification using a Volkmann spoon. Alternative for bone spoon is monofilaments, that is a specially constructed cloth. The most invasive and costly methods include: hydroknife, an ultrasonic cleansing of the wound and surgical debridement. There are also special dressings available, which basic function is to dissolve and rinse the necrotic component of the wound. Those include cleansing and rinsing dressings, alginates, hydrofibers and collagenase in the form of an ointment. The most effective method is larval therapy. The described methods differ in their effectiveness, ease of use and price. For those reasons they should be selected individually for the specific type of the wound, the applicability and price.

## WOMAN'S DERMATOLOGY

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This study deals with unconventional usage of eponyms in dermatology. The eponym is a term or concept which may be derived not only from a proper name or a person, but also from an animal or an item.
The main study was inspired by references to renowned women dermatologists and the attributes of femininity. The women chosen have not only made a name for themselves in dermatology, but also spread the image of a savant woman.

A perfect example can be the eponym associated with the name of Maria Dąbska. The Dąbska tumour is one of the two skin tumours to be named after this outstanding Polish pathologist. Another woman to be distinguished in this way was Lilane Schnitzler, the first professor of dermatology in France, whose name is linked to the original description of the urticarial rash and monoclonal gammopathy syndrome. Next to be remembered is Madge Macklin, an outstanding social activist and geneticist whose name came to be associated with one of the varieties of ichthyosis hystrix. The next worth of mentioning is Sister Mary Joseph Dempsey who despite the lack of medical education was able to notice the connection between the peri-umbilical tumour and intra-abdominal malignancy.
Among eponyms referring to attributes of femininity we can mention woolly hair, shoulder-pad sign, Moroccan leather, papular-purpuric gloves and socks syndrome and gaiter region.

## WHAT'S NEW IN PRURITUS' TREATMENT? SHORT REPORT FROM THE 9TH WORLD CONFERENCE ON ITCH

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Itch is the most common symptom in dermatology. It is a type of superficial cutaneous sensation, provoking the need to scratch. There are two types of itch, depending on its duration: acute (lasting up to 6 weeks) and chronic (longer than 6 weeks). It can occur with or without skin changes. New research project into antipruritic treatments are being conducted. The clinical trial on CD26 glycoprotein and its dipeptidyl peptidase IV (DPPIV) showed the possible role in the management of itch in case of psoriasis and atopic dermatitis. There are also new conclusions on ciguatoxins (CTXs), which are preponderantly responsible for severe pruritus and allodynia. Most recent results of the research into the influence of the type A botulinum toxin (BoNT/A) on itch relief were also presented. In two-phase two clinical trials serlopitant showed statistically significant decrease in itch severity in patients with nodular prurigo and chronic pruritus. Research on dermocosmetic antipruritic spray, including Skin relief™ technology associated to enoxolone, confirmed the interest to use the product in chronic skin diseases, such as atopic dermatitis, psoriasis and chronic urticaria. Short-term pruritus is an essential defense mechanism for the organism. However, prolonged itch is an undesirable phenomenon and requires symptomatic treatment. Many clinical trials on the new substances for various types of itch are being conducted in study centers all over the world. Reduction of pruritus plays an important role in increasing quality of life in a variety of psychodermatological conditions.