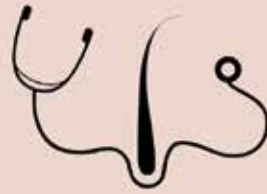




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# VIII Międzynarodowa Konferencja Naukowa Interdyscyplinarne aspekty chorób skóry i błon śluzowych

11 - 12 marca 2022

DO UDZIAŁU ZACHĘCAMY ZARÓWNO STUDENTÓW  
UCZELNI MEDYCZNYCH, JAK I LEKARZY

STUDENCKIE KOŁO NAUKOWE  
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DOFINANSOWANO ZE ŚRODKÓW BUDŻETU PAŃSTWA W RAMACH UMOWY DNK/SP/514582/2021 z MEIN PROGRAM  
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VIII (dycja) Konferencji Naukowej "Interdyscyplinarne aspekty chorób skóry i błon śluzowych"

# Streszczenia

## The influence of the usage of respiratory protection products on the condition of acne-prone skin

Wpływ stosowania środków ochrony dróg oddechowych na stan skóry trądzikowej

Stanisław Anczyk, Maciej Stępień, Michał Raczyński, Maja Woźniakowska

Trustee of the paper: dr. n. med. Bartosz Miziołek

In view of the increase in the frequency of acne exacerbations in the population, it was decided to look for a relationship between the severity of lesions and the general obligation to cover the mouth and nose.

It was to demonstrate a positive correlation between the use of respiratory protection and the exacerbation of acne or its appearance *de novo*, and to find potential factors influencing the severity of lesions.

The study was conducted through an online survey consisting of multiple and single choice closed questions, as well as open questions. For the purposes of the survey, 1274 complete responses were captured.

The study showed a positive correlation between the use of protective equipment and increased severity of acne lesions in the population. It applies especially to maculopapular lesions, and its degree depends on the frequency and type of protection. More frequent wearing of masks results in a greater exacerbation of the lesions, while longer wearing does not have as much influence. It has also been shown that the use of protective measures made from natural materials causes less skin exacerbation than masks made from synthetic fibers. Other factors were also focused on, including facial disinfection before and after mask application, but this was found to have no significant effect on the severity of acne lesions.

The use of masks has been shown to significantly contribute to skin deterioration by exacerbating acne lesions and increasing the formation of these lesions *de novo*.

## Keratin-butyrate scaffolds accelerate skin wound healing in diabetic rats: *in vitro* and *in vivo* studies

Wpływ opatrunku na bazie keratyny z dodatkiem maślanu sodu na proces gojenia się ran u szczurów obciążonych cukrzycą: badania *in vitro* oraz *in vivo*

Łukasz Mazurek, Mateusz Rybka, Mateusz Szudzik, Anna Laskowska, Joanna Czuwara, Robert A. Schwartz, Zbigniew Ruszczak, Marcin Ufnal, Marek Konop

Trustee of the paper: dr n. med. Marek Konop

More effective strategies for the rapid healing of diabetic wounds and novel therapeutic approaches are needed. In this context, keratin biomaterials increased scientists' attention due to excellent biocompatibility and the possible preparation of different forms of a wound dressing.

Evaluation of the effect of keratin-butyrate scaffolds as a new therapeutic option in a diabetic full-thickness skin wound model in rats.

Keratin dressing was prepared from rat fur and soaked with 0.1% sodium butyrate (Na-Bu) solution. The obtained product: FKDP + 0.1%NaBu was examined *in vitro* and *in vivo* in a full-thickness skin wound model in diabetic rats. The wounds were photographed on days 4, 7, 14, 21, and 28, and skin biopsies were taken for molecular and histopathological examinations.

The applied dressing significantly accelerates wound healing on days 4 and 7 post-injury. At the beginning of the experiment, mixed cell type inflammation was less pronounced in the treated wounds, and histiocytic inflammation predominated over neutrophilic. RT-qPCR analysis showed that applied dressing increased mRNA expression of IL-10 and VEGF expression starting from day 14 and decreased mRNA expression of IL-1 $\beta$  on days 4, 7, and 14. We also observed significantly increased mRNA expression of keratin 16 and keratin 17 in keratin-butyrate treated wounds.

Keratin-butyrate dressing shows anti-inflammatory properties and increases the expression of molecules involved in tissue regeneration. This study confirms that keratin-butyrate scaffolds can effectively promote wound healing in diabetic rats.

## The serum level of IL-31 in patients with chronic kidney disease-associated pruritus: what can we expect?

Poziom interleukiny 31 w surowicy pacjentów ze świądem związanym z przewlekłą niewydolnością nerek. Czego możemy się spodziewać?

Karolina Świerczyńska

Chronic kidney disease-associated pruritus (CKD-aP) is one of the most common and burdensome dermatological symptoms affecting patients undergoing dialysis with still not fully discovered etiopathogenesis.

This study was designed to investigate the possible contribution of interleukin-31 (IL-31) to the pathogenesis of itch in patients undergoing maintenance hemodialysis (HD).

We evaluated the serum level of IL-31 in HD patients with pruritus, in HD patients without pruritus and in healthy controls and its correlation to the severity of itch. The study enrolled 175 adult subjects. The participants were divided into three groups. Group A included 64 patients on maintenance HD with CKD-aP. Group B included 62 patients on maintenance HD not reporting CKD-aP and group C included 49 healthy controls. Pruritus severity was assessed using Numerical Rating Scale (NRS) and serum levels of IL-31 was measured.

The results showed that IL-31 serum level was significantly higher in itchy group ( $p < 0.001$ ) in comparison to patients free from pruritus. Moreover, marginal trend toward significance ( $r = 0.242$ ,  $p = 0.058$ ) was observed between IL-31 serum level and itch intensity.

Our study supports earlier findings on extended role of IL-31 in development of CKD-aP.

## YouTube as a source of information for hidradenitis suppurativa treatment

YouTube jako źródło wiedzy na temat leczenia *hidradenitis suppurativa*

Miłosz Lewandowski, Zuzanna Świerczewska, Wioletta Barańska-Rybak

Trustee of the paper:  
prof. dr hab. n. med. Wioletta Barańska-Rybak

Hidradenitis suppurativa (HS) is a chronic, inflammatory skin disease characterized by the significant decrease in the patients' quality of life. Due to the enormous IT development made in recent years, patients are increasingly looking for information about Hidradenitis suppurativa on social media, including YouTube. However, in the literature the quality of the videos focused on other diseases has been often scored as poor.

The aim of the study was to evaluate the usefulness and the quality of HS YouTube videos.

YouTube was searched for the keywords 'hidradenitis suppurativa' and 'acne inversa'. For videos quality assessment validated DISCERN instrument and the Global Quality Score were applied. The popularity of each video was evaluated using the Video Power Index score.

After applying the exclusion criteria, 34 videos were analyzed. We found that video quality was poor regardless of video type. The mean DISCERN score between the raters was  $34.65 \pm 10.7$ , and the mean GQS score was  $2.6 \pm 0.98$ . There was no significant correlation between the DISCERN, GQS and Video Power Index, the number of views, likes, dislikes, comments, and video duration. However, healthcare source videos had notably higher GQS scores - 2.9 mean than non-healthcare source ones - 2.15 mean ( $p = 0.044$ ).

Our study highlights the relatively high interest in HS among YouTube users and the gaps of knowledge regarding hidradenitis suppurativa treatment on this platform. The conducted study can be useful to create superior educational content in social media in the future.

## Vascular malformations – psychological aspect

### Malformacje naczyniowe – aspekt psychologiczny

Klaudia Lipińska, Natalia Bień, Maria Rajczak

Trustee of the paper: Aleksandra Lesiak, Małgorzata Skibińska, Aleksandra Kobusiewicz, Paweł Kowalski

Port-wine stain (PWS) is a congenital vascular malformation that can appear on any part of the body as light pink to purple discolorations with well-defined borders. A spontaneous involution is rarely observed. PWS might have an impact on patients' mental health. Patients may feel stigmatized or even develop mental illnesses. Pulsed dye laser (PDL) is the treatment of choice for PWS.

The aim of the study was to inspect psychological well-being of patients with vascular malformations.

The 50 adult patients were enrolled in the research. They filled out the survey which consisted of psychological tests such as DLQI and HADS, as well as demographic data and information about malformations. Patients' data were statistically analyzed.

50 participants filled out the survey – 42 (84%) females and 8 (16%) males. 24% of patients had positive family history for vascular malformations. 52% of patients stated that malformations had an effect on their quality of life. 48% of patients presented signs of anxiety and 22% signs of depression. However, in 56% of patients' laser treatments had a positive impact on their anxiety and confidence.

Vascular malformations are a valid factor influencing patients' mental health. Effective laser treatment of lesions as well as interprofessional collaboration between physicians and psychologists might contribute to improvement in patients' quality of life and mental state.

## Abnormally expression of MCPIP1/reganase-I in the skin of hidradenitis suppurativa patients

### Nieprawidłowa ekspresja MCPIP1/reganazy I w skórze pacjentów z hidradenitis suppurativa

Piotr Krajewski

The pathogenesis of hidradenitis suppurativa (HS) is not fully understood. Nevertheless, authors underline that inflammation is a key element in the development of skin lesions.

The aim of this study was to evaluate the expression of monocyte chemotactic protein-1-induced protein-1 (MCPIP1), both in mRNA and protein level in the skin of patients suffering from HS.

Skin biopsies of 15 patients with HS (from lesional and non-lesional skin) and 15 healthy controls were obtained. It was subsequently processed for immunohistochemistry, western blot, and real time PCR.

The highest mean MCPIP1 mRNA expression was found in the inflammatory lesional skin of HS patients ( $0.0503 \pm 0.0825$ ). It was significantly higher than MCPIP1 mRNA expression in the biopsies from both healthy controls ( $0.0089 \pm 0.0052$ ,  $p < 0.001$ ) and non-lesional skin of HS patients ( $0.0047 \pm 0.0031$ ,  $p < 0.001$ ). Western blot analysis indicated that expression of MCPIP1 was elevated within both lesional and non-lesional skin compared to the healthy control. Specific MCPIP1 immunostaining was cytoplasmic and present in the epidermis, as well as in hair follicles. MCPIP1 immunoreactivity was found in all studied biopsies in the suprabasal layers of the epidermis. There was no MCPIP1 immunoreactivity in the dermis.

The increased MCPIP1 mRNA and protein expression level in HS lesions may indicate possible role of MCPIP1 in the disease pathogenesis. Nevertheless, future studies are necessary to fully unravel



## Autoimmune bullous skin disorders – retrospective cohort study

Autoimmunologiczne choroby pęcherzowe skóry – analiza retrospektywna

Adrianna Pyrek, Laura Eliszewska, Natalia Rutecka

Trustee of the paper:  
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Autoimmune bullous disorders are a group of chronic diseases. Bullous pemphigoid is the most common autoimmune bullous disease of all, affecting mainly elderly people in the 8<sup>th</sup> decade of life, without gender predilection. Pemphigus manifests usually between 45 and 65 years of age, with a female predilection reported in most epidemiological studies.

Assessing the prevalence of bullous diseases with respect to their types in different age groups, coexistence with neoplasms and other diseases.

Retrospective analysis of medical histories of patients hospitalized in the Department of Dermatology, Sexually Transmitted Diseases, and Clinical Immunology at the University of Warmia and Mazury in Olsztyn with a diagnosis of bullous diseases between 2015 and 2021.

72 patients diagnosed with autoimmune bullous diseases were treated in the Department of Dermatology from 2015 to 2021. The mean age of patients was 76 years for pemphigoid diseases and 58 years for pemphigus. A causative agent such as drugs or consumption of bulbous plants was suspected in 10 (13.9%) patients. Coexisting neoplasms were present in 11 (15.3%) patients. The subjects also had comorbidities, the most common of which was hypertension (23 patients).

The study confirmed most of the epidemiological data: bullous pemphigoid mainly affects the elderly, in the 8<sup>th</sup> decade of life, while pemphigus usually manifests itself before the age of 65. Symptoms can be provoked by external factors such as drugs, pathogens, UV light, diet, stress. They can also coexist with other autoimmune and cardiovascular diseases.

## Analysis of comorbidities in patients diagnosed with chronic urticaria

Analiza chorób współistniejących u pacjentów z rozpoznaniem pokrzywki przewlekłej

Weronika Zysk, Magdalena Trzeciak

Trustee of the paper: dr hab. n. med. Magdalena Trzeciak

Chronic urticaria is a common disease, characterized by the development of wheals, angioedema, or both, which can be associated with several comorbidities.

To describe the frequency and analyze of self-reported comorbidities in patients with chronic urticaria.

A questionnaire-based survey consisting of 20 questions was conducted on a member of Urticaria group on social media platform – Facebook. A total of 102 people took part in this survey.

In the group 95.1% were females and 4.9% males, with a mean age of 34 (9–57) years. The most common diagnosed type of urticaria was spontaneous (52.9%). Angioedema accompanied urticaria in 68.6% of the respondents, mainly those with delayed pressure urticaria (86.4%). 85.3% of respondents reported comorbidities, most often atopic diseases and allergies (49%), chronic inflammation and infections (36.3%), thyroid (36.3%) and psychiatric disorders (25.5%). Moreover, in 34.3% of patients at least one autoimmune disease was noted. As compared to the patients without autoimmune urticaria, much more with autoimmune urticaria had coexisting autoimmune disease (25% vs. 61.5%). 59.8% of respondents experienced urticarial wheals every day. The symptoms most often occurred in patients with autoimmune diseases. The family history of autoimmune diseases was positive in 42.2%, negative in 41.2% and the family history of urticaria and atopy was negative in 92.2% and 59.8%, respectively.

Clinicians should be aware of potential comorbidities to provide comprehensive care to patients with chronic urticaria.

## Acetylsalicylic acid inhibits amelanotic melanoma proliferation via the inhibition of PFKFB3 kinase

Kwas acetylosalicylowy hamuje proliferację amelanotycznego czerniaka poprzez inhibicję kinazy PRKFB3

Natalia Sauer, Katarzyna Karłowicz-Bodalska

Trustee of the paper: mgr Katarzyna Karłowicz-Bodalska

Amelanotic melanoma is an aggressive type of skin cancer that doesn't produce the pigment melanin. Melanoma incidence is increasing and because of lack of skin pigment, early detection of amelanotic melanoma can be challenging. Thus, chemoprevention is a promising strategy for improving patient outcomes. PFKFB3 plays an important role in sustaining the development and progression of cancer and might represent an attractive target for therapeutic strategies.

The aim of the study was to examine the effect of acetylsalicylic acid, as an inhibitor of PFKFB3, on human amelanotic melanoma cells (C32).

C32 cells were exposed to different concentrations of acetylsalicylic acid and the following tests were performed: MTT viability assay, caspase-3 activation assay, molecular dynamic studies.

Our studies revealed that acetylsalicylic acid presents a cytotoxic effect and promotes cell death by necrosis of C32 cells.

Our research demonstrated a here should be pronecrotic and antiproliferative effect of acetylsalicylic acid on human amelanotic melanoma cells. Taken together, these findings indicate ASA binds at the site of specific inhibitors and inhibits PFKFB3 kinase. Our results suggest that acetylsalicylic acid has potential in anticancer therapies for melanomas.

## Effects of curcumin-aided photodynamic therapy on melanoma and skin cells

Wpływ terapii fotodynamicznej wzbogaconej kurkumą na komórki czerniaka i skóry – badania *in vitro*

Wojciech Szlasa, Julita Kulbacka

Trustee of the paper: dr hab. inż. Julita Kulbacka

First line treatment for skin melanoma remains surgery, however its effectiveness relies on the size of the excision margin. In case of large melanoma lesions, the utility of adjuvant local therapy seems a promising attempt to reduce the cosmetic defects.

The aim of the study is to evaluate the potential of curcumin-aided photodynamic therapy on the melanotic and amelanotic melanoma and compare the effects on the other cells of the skin including fibroblasts and keratinocytes.

We tested the viability of A375, C32, HaCaT and HGF cells following the irradiation with curcumin. We also evaluated the migration properties and organization of actin fibers of the cells.

Melanoma cells are highly vulnerable towards curcumin-aided PDT. Even though fibroblasts and keratinocytes are also susceptible, by choosing the optimal parameters, we might avoid the high killing of the cells. The neoplastic cells reduce the migration following the disruption of the cytoskeleton.

Curcumin-aided PDT reduces the viability and migration of the cells via the actin cytoskeleton impairment.

## Skin problems of pregnancy – a survey study

Problemy skórne w ciąży – badanie ankietowe

Katarzyna Turczyńska, Aleksandra Perkowska, Aleksandra Baranowska, Anna Baran, Iwona Flisiak

Trustee of the paper: dr hab. n. med. Anna Baran, prof. dr hab. n. med. Iwona Flisiak

Pregnancy is a period in a woman's life that is associated with numerous changes, many of which are reflected on the skin.

The aim of the study was to evaluate the frequency, type and location of skin lesions in pregnancy, and to correlate them with different trimesters and gravidity. Furthermore, it was also assessment of the impact of skin problems on the quality of life of pregnant.

An anonymous online questionnaire was conducted in 2021 among 295 pregnant. Statistical analysis was performed using  $\chi^2$  test, statistically significant difference was at  $p < 0.05$ .

The group consisted of 198 primagravidas and 97 multigravidas in the age range of 20–40. Physiological lesions occurred in 71.7%, especially stretch



marks (42.5%) on the abdomen and lower limbs. 39.2% of women noticed nail changes, mainly their faster growth (80.7%). Specific dermatoses of pregnancy occurred in 2.7%. Dry skin was presented in 55%, especially around the face (58.3%), but itching in 39.7%, mainly on the abdomen (63.2%). Hirsutism and hair loss in the second and third trimesters, stretch marks in the third trimester, rosacea, psoriasis and atopic dermatitis were observed significantly more often in multigravidas than in primigravidas ( $p < 0.05$ ). Dermatoses caused embarrassment in 53.6%. Stress related to skin problems was presented in 48.5%.

Physiological skin lesions occurred more often than specific dermatoses. Multigravidas promote hirsutism, hair loss, stretch marks depending on the trimesters. Skin lesions affect self-esteem and the stress levels.

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## Small-fibre neuropathy of diabetes mellitus type 2 patients: is there a relation to diabetic itch?

### Neuropatia małych włókien w cukrzycy typu 2: czy ma związek ze świądem w cukrzycy?

lek. Aleksandra Stefaniak

Although small fiber neuropathy (SFN) has been proposed as a potential etiopathogenetic factor of itch in diabetes mellitus (DM), up till now, no study has assessed this topic with validated methods.

This study aimed to assess small fiber neuropathy as a potential cause of itch in patients with DM.

Twelve subjects with itch in DM and eleven without itch were included and intraepidermal nerve fiber density (IENFD) to determine presence of SFN was assessed. Additionally, itch intensity was assessed with the Numerical Rating Scale (NRS) and the 4-Item Itch Questionnaire (4IIQ). Skin dryness was evaluated clinically and by non-invasive assessment of epidermis moisturizing. Neuropathy was also assessed using clinical Katzenwadel neuropathy scale.

All patients regardless of the experienced itch had a decreased IENFD ( $3.2 \pm 1.8$  fibers/mm, itchy group: 2.7 fibers/mm, non-itchy group: 3.7 fibers/mm). Patients with itch reported in the vast majority of the cases prurigo (83.3%). Subjects with dryer skin

tended to lower IENFD ( $R = 0.32$ ,  $p = 0.088$ ), while itchy patients had significantly dryer skin ( $p = 0.02$ ). Additionally, patients in itchy group significantly more frequently experienced tingling or numbness sensations, compared with the non-itchy population ( $p = 0.02$  and  $p = 0.04$ , respectively).

Although there was no difference in our results in IENFD between itchy and non-itchy subjects SFN should be weighed as possible origin of itch in patients with DM.

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## Are patients with alopecia areata at increased risk of cardiovascular events? Results of a single-center case-control study

### Czy u pacjentów z łysieniem plackowatym występuje podwyższone ryzyko zdarzeń sercowo-naczyniowych? Wyniki jednośrodkowego badania kliniczno-kontrolnego

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prof. dr hab. n. med. Małgorzata Olszewska,  
prof. dr hab. n. med. Lidia Rudnicka

Alopecia areata is an inflammatory, autoimmune form of non-scarring hair loss. It may be suggested that the disease is associated with an increased risk of cardiovascular diseases.

The aim of the study was to evaluate predictors of cardiovascular events (endothelial function and arterial stiffness) in patients with alopecia areata in comparison with healthy controls.

Fifty-two patients with alopecia areata (38 women and 14 men) in the age between 30 and 52 were involved in the study. Thirty-four healthy subjects matched for the age, gender, and body mass index was recruited as a control group. Endothelial function identified as reactive hyperemia index and arterial stiffness expressed as augmentation index were assessed with the use of the Endo-PAT 2000 device.

Endothelial dysfunction was observed in 22/52 (42%) patients with alopecia areata and 4/34 (12%) healthy controls ( $p = 0.002$ ). No significant difference was present in arterial stiffness between patients with alopecia areata and the control group.

In conclusion, patients with alopecia areata show abnormalities in early predictors of cardiovascular events. Regular cardiovascular screening and early prevention of cardiovascular events should be provided in every patient with alopecia areata.

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could be explained by the exacerbating of PWS over time, indicating further bi-yearly treatment is needed to counteract deterioration.

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## Usage of 3D imaging in monitoring the laser therapy treatment of port wine stain capillary malformation

Wykorzystanie obrazowania 3D w monitorowaniu leczenia malformacji kapilarnych typu *port wine stain* laseroterapią

Bartłomiej Kwiek, Michał Paprocki, Anna Mataczyńska, Jan Szczękułski

Trustee of the paper: dr hab. n. med. Bartłomiej Kwiek

The previous studies have shown the efficacy of PWS treatment with large spot 532 nm laser, with median maximal improvement achieved during treatment (GCE<sub>max</sub>) ranging from 50% to 70%.

To assess the efficacy of PWS treatment with the use of a large spot 532 nm laser over a prolonged period.

Sixty-four Caucasian patients aged 6 to 59 treated with 2 to 30 laser sessions were included in this study. Patients had 3D photography performed before and after treatment with a 532 nm Nd:YAG laser with large spot and contact cooling. An objective analysis of percentage improvement based on a 3D digital assessment of combined color and area improvement (global clearance effect (GCE)) were performed.

The median maximal improvement achieved during the treatment (GCE<sub>max</sub>) was 59.1 % (GCE<sub>59</sub>). The first two laser procedures had a median maximal improvement of 28.46%, while the first 5,10,15 and 20 laser procedures had respectively 45.48%, 56.57%, 56.97% and 56.96% total maximal improvements. The procedures have been divided into time groups, based on time passed in-between procedures, and the relation between time-group and negative total clearance improvements has been found.

Analysis indicates that large spot 532 nm laser is highly effective in the treatment of PWS. Further analysis proves the first five laser procedures have higher efficacy and improvements start plateauing around the 10<sup>th</sup> visit. The established correlation between time groups and the efficacy of treatment

## Unclear picture or poor cooperation? Case report of a patient with sarcoidosis

Niejasny obraz czy nieudana współpraca? Opis przypadku pacjentki z sarkoidozą

Anna Stepaniuk, Julia Nowowiejska, Anna Baran, Iwona Flisiak

Trustee of the paper: dr hab. n. med. Anna Baran

Sarcoidosis is a systemic condition of unknown pathogenesis which may affect any body organ. The hallmark of the disease is presence of noncaseating granulomas. An acute onset of sarcoidosis could be Löfgren's syndrome consisting of erythema nodosum, fever, joint pain and bilateral hilar lymphadenopathy.

A 76-year-old woman, with a history of HCV infection, was hospitalized at the Department of Dermatology 7 times. First time she was admitted due to erythema nodosum. Later, she was admitted six times more due to purpura on the lower extremities, which was accompanied by joint pain and ankle oedema and initially linked to the vaccination, which was followed by bronchitis and antibioticotherapy. Over the years, patient has been prescribed oral glucocorticoids for recurrent skin lesions by a general practitioner and she concealed this during hospitalization. On the last admission crackles in the lungs were prominent and patient reported dyspnea. During the rheumatological consultation mixed cryoglobulinemia was suspected. Histopathological examination of the purpural lesions suggested leukocytoclastic vasculitis. Due to the strong suspicion of sarcoidosis pulmonary consultation resulted in confirmation of the diagnosis. Patient received dapson and glucocorticoids with slow clinical improvement.

Sarcoidosis can pose a challenge due to its multiple different symptoms and poor cooperation can result in confusing clinical picture as some of the drugs prescribed by other doctors can significantly blur presented symptoms. Patients may take medications on their own, not reporting it to doctors, which delays the proper diagnosis, which in this case took 7 years.

## Cutaneous metastasis of neuroendocrine carcinoma

Przerzuty raka neuroendokrynnego do skóry

Aleksandra Białczyk, Urszula Adamska, Agnieszka Białicka

Trustee of the paper: prof. dr hab. Rafał Czajkowski, dr n. med. Luiza Marek-Józefowicz, lek. Kaja Męcińska-Jundziłł

Disseminated pigmented nodular skin lesions should arouse vigilance among doctors because, together with general symptoms, they may suggest a disseminated neoplastic process. Tumor metastases to the skin are the least frequently described locations and may appear in various locations, sometimes distant from the primary site, usually without pain. Their appearance is typically a symptom of neoplastic disease progression, indicates a poor prognosis, and may also predict cancer relapse after previous effective treatment.

A 72-year-old woman was admitted to the Department of Dermatology for the diagnosis of skin lesions – purplish nodules localized on the hair-covered skin of the head, in the external auditory canal, on the back, and on the groin. An abdominal CT scan revealed a generalized neoplastic process with metastases in the liver, pancreas, bones, subcutaneous tissue, chest wall and right breast. Histopathology of the excised skin lesion confirmed a neuroendocrine tumor. Based on immunohistochemistry results, pancreatic neuroendocrine carcinoma or small cell lung cancer metastases were suspected. However, the patient died before the diagnosis of the primary tumor was completed and appropriate treatment was initiated.

Neuroendocrine carcinomas are atypical and difficult to diagnose, hormone-related neoplasms. Most neuroendocrine neoplasms occur in the gastrointestinal tract or lungs and are rarely reported with distant metastases. In addition, cutaneous metastases are among the least frequently reported locations. The uncharacteristic clinical picture may be diagnostically challenging; therefore, it is essential to conduct a thorough physical examination and medical history and confirm the diagnosis with imaging, histopathological and immunological tests.

## Can collaboration between a dermatologist and podiatrist increase the effectiveness of treatment of nail plate diseases? A case report

Czy współpraca dermatologa z podologiem może zwiększyć skuteczność leczenia chorób płytki paznokciowej? Prezentacja przypadku

Julia Lewandowska, Natalia Machoń,  
Aleksandra Znajewska-Pander,  
Agnieszka Owczarczyk-Saczonek, Waldemar Placek

Nail disorders are a very common reason for dermatological consultations. Diagnostics and treatment are selected on the basis of the clinical picture, dermatoscopy, diagnostic imaging, microbiological and histopathological examinations. About 50% of diseases are infectious (mainly fungal), 15% are inflammatory or metabolic conditions, and 5% are malignant tumors. The aim of this case report is to present a medical case that was unsuccessfully treated due to the initial lack of plastic nail preparation.

A 13-year-old female patient presented to the Dermatology Outpatient Clinic on 30/10/2020 due to a thickened, corrugated, discolored and deformed nail plate with subungual hyperkeratosis and onycholysis within the right toe. The painless lesion had persisted for about 12 years and had been unsuccessfully treated for 8 years at another department with topical antifungals due to *Candida albicans* in mycological examination. At the Outpatient Clinic, a decision was made to plasticize the nail in cooperation with a podiatrist. In order to exclude exostosis, lateral foot X-ray was performed. Then, due to the presence of a healthy nail plate with matrix under the deformed keratinized mass, it was decided to remove it. Plastic nail preparation was performed with Kinesiotaping of the toe and placement of an orthonyx clamp. The nail was healed within a year.

The case of a girl who has been unsuccessfully treated with antifungal drugs draws particular attention to the value of cooperation between a dermatologist and a podiatrist in the treatment process of frequently occurring lesions within the nail plate.

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## Efficacy of intralesional triamcinolone in resistant to oral and topical treatment of chronic lichenoid lesions – a case report

Skuteczność doogniskowego stosowania triamcynolonu w opornych na doustne i miejscowe leczenie przewlekłych zmianach liszajowatych – prezentacja przypadku

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Lichen planus is a chronic, inflammatory, autoimmune disease of the skin, mucous membranes and nails. The clinical picture is usually sufficient for the diagnosis of lichen planus: flat-topped, purple, polygonal, itchy papules, plaques and characteristic Wickham's reticulum.

First-line treatments are topical corticosteroids or calcineurin inhibitors. In severe cases systemic treatment with retinoids or immunosuppressants is used. Conventional treatment is not always successful due to contraindications to its use or non-adherence. Intralesional administration of triamcinolone may be an alternative.

A 33-year-old patient presented with histologically confirmed hypertrophic lichen planus for 2 years. He reported a previous treatment with topical clobetasol propionate in occlusion and oral prednisone. Due to ineffectiveness and contraindications to systemic treatment, the patient received twice intralesional triamcinolone acetonide at 3-week intervals. The lesions completely resolved 14 days after the first injection, while pruritus resolved in 4 days. The second patient presented with 10-years lesions on lower extremities unsuccessfully treated with mometasone, clobetasol in occlusion, topical antifungal preparations and oral prednisone. During a visit to the Dermatology Clinic, a trial of treatment with betamethasone and gentamicin ointment in occlusion, a lubricating ointment, compression therapy and hydroxyzine was recommended. After one month, due to lack of improvement, it was decided to administer intralesional triamcinolone. Healing was observed after 1 month.

Triamcinolone can be used in the treatment of lichen planus when other methods are ineffective or contraindicated. Based on the cases such treatment brings spectacular results.

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## Bodybuilding acne – therapeutic challenge (case studies)

Trądzik posterydowy – wyzwanie terapeutyczne (stadium przypadków)

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Bodybuilding acne is a special form of acne found in people who abuse anabolic androgenic steroids (AAS). High doses of testosterone and AAS cause the growth of the sebaceous glands and increase the population of *Cutibacterium acnes*. As a result, acne lesions exacerbate with the occurrence of a number of accompanying symptoms, including increased seborrhea, androgenetic alopecia, hirsutism, hypertrichosis, atrophic stretch marks and gynecomastia. Bodybuilding acne is estimated to occur in 18–50% of AAS users, especially men in the 18–26 age and is an important clinical marker of abuse.

The paper presents cases of patients admitted to the Clinic of Dermatology, Venereology and Allergology of the Medical University of Gdańsk, whose acne lesions intensified during or after AAS abuse was discontinued. The attention was paid to the different clinical spectrum and the therapeutic options for the treatment of bodybuilding acne were presented.

Taking AAS is a multidisciplinary problem that includes, apart from the dermatological aspect, also i.a. endocrinological and psychiatric. Out of those taking, 30% of users show signs of addiction. The multidirectional negative effects of AAS make the treatment of acne lesions a therapeutic challenge. The role of a dermatologist, apart from the diagnosis and treatment of bodybuilding acne, is also crucial from the perspective of diagnosing AAS abuse.

## Mimicking each other – psoriasis and tinea. A case report

Maskowanie się chorób – łuszczyca i grzybica. Opis przypadku

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Psoriasis is one the most common dermatoses worldwide. It is a chronic, immunologically mediated, inflammatory disease associated with polygenic predisposition and triggered by environmental factors. The most characteristic skin lesions include well-demarcated, raised, erythematous papules with white scaly surface. Psoriasis is often misdiagnosed with other skin conditions, particularly dermatitis and fungal infections. They can also coexist.

We present a case of a 23-year-old patient with the history of recurrent skin lesions with accompanying mild pruritus. The first lesions were diagnosed as allergic dermatitis and successfully treated with topical steroids several times. Patch tests indicated the allergy to formalin. Three years after the first episode, the exacerbation of skin lesions resistant to previous treatment occurred. A conducted direct mycological examination appeared to be positive. Fungal cultures indicated *Trichophyton verrucosum* and *Candida* spp. The patient was effectively treated systemically with terbinafine and topical ciclopirox olamine. Although the clinical improvement was achieved after few weeks, still partial activity with papules within the residual lesions remained. The performed skin biopsy ruled out fungal infection and pointed to psoriasis.

The proper initial diagnosis enables to begin the appropriate treatment earlier and contributes to better outcome. Misdiagnosis and consequently administration of wrong medication may provide temporary remission, especially in case of fungal infection leading to tinea incognito. Correct diagnosis is especially important in coexistence of a few conditions. In very doubtful cases, in relapses or resistance to therapy, skin biopsy is crucial to make a definitive diagnosis and implement proper treatment.



## Morphea en coup de sabre – is it only a skin disease?

Twardzina ograniczona typu *en coup de sabre* – choroba dotycząca wyłącznie skóry?

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Morphea en coup de sabre is a localized scleroderma characterized by fibrosis restricted to frontoparietal area of the scalp. In addition, intracranial abnormalities can be found in neuroimaging. Appropriate treatment is mandatory to prevent further neurological sequelae.

A 2-year-old patient was admitted to the dermatological department due to erythematous linear lesion localised on the forehead and cheek. Prednisone (10 mg/day) and topical steroid therapy were started in January 2019. After 2 months of the treatment, methotrexate (7.5 mg/week) was introduced. The first head MRI scan was performed in March 2019, revealing the areas of hyperintense signal in the caudate nucleus, internal capsule and putamen on the left side, with no fluid present. After discharge in July 2019, the patient did not come back for the follow up until October 2021, and it turned out that she was not taking methotrexate for last 8 months. A deterioration of skin lesion was observed. A subsequent head MRI scan, performed in 2021, revealed a lesion with fluid and extension of areas of hyperintense signal. The dose of prednisone was increased to 30 mg/day and the treatment with methotrexate with a higher dosage (15 mg/week) was resumed.

Neurological changes can occur in patients with morphea en coup de sabre. This case proves the importance of regular monitoring and continuous treatment of the disease to inhibit the progression of brain lesions.

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## Mallory-Weiss syndrome in the course of bullous pemphigoid, probably paraneoplastic: therapeutic implications

Zespół Mallory'ego-Weissa w przebiegu pemfigoidu pęcherzowego zapewne paraneoplastycznego: implikacje terapeutyczne

Agnieszka Mariowska, Magdalena Jałowska,  
Monika Bowszyc-Dmochowska, Marian Dmochowski

Bullous pemphigoid (BP) is the most common autoimmune bullous disease in technologically advanced countries. There are malignancy-associated cases of BP.

BP was diagnosed in a 73-year-old patient with DIF and multiplex ELISA. Patient had the treatment of prostate cancer (2011) and left kidney oncocytoma (left nephrectomy 2017). Doxycycline and glucocorticosteroids systemically and topically showed little improvement. Due to erythematous edema, lower limb venous thrombosis was suspected and the patient was consulted by a vascular surgeon. Massive gastrointestinal bleeding (Mallory-Weiss syndrome) occurred after enoxaparin anticoagulant treatment, requiring hospitalization in a surgical ward and blood transfusion. During hospitalization there, numerous blood-filled blisters appeared on the feet hampering moving around. Then doxycycline was replaced with dapsone (initially 25 mg/day, then 50 mg/day) after anemia in blood count had corrected, with a slight cutaneous improvement. Later, intravenous immunoglobulins (IVIG) were introduced at a dose of 2 g/kg/bw per cycle. During the second cycle of IVIG marked leukopenia was detected. After discontinuation of IVIG, the dermatological condition deteriorated significantly. After normalization of blood count parameters, subsequent cycles of IVIG were continued with just transient moribund effect. Milia developed in the dynamic course of the disease. Currently, biological therapy with rituximab is planned.

In this BP case, senescence, coexisting internal diseases, emotional inability to cope with chronicity of dermatosis, and numerous complications in the course of managing the patient pose a significant therapeutic challenge, also resulting from mental and administrative obstacles, for the treating team.

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## Infectious complications after hyaluronic acid injections – two case series

Powikłania infekcyjne po zastosowaniu kwasu hialuronowego – opis dwóch przypadków

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Dermal fillers injection is among the most popular procedures in aesthetic medicine practice. Although facial filler treatments with hyaluronic acid are reasoned as minimally invasive, they are not without ramifications.

We present 2 cases of patients with infectious complications associated with hyaluronic acid injections. The first patient, a 54-year-old woman, experienced two episodes of itchy, erythematous lesions on the face, tender to the touch, with increased warmth and consistency. Additionally, the patient was suffering from fever. Five days before the first admission she was administered hyaluronic acid in the area of the nasolabial folds by a beautician. The first symptoms appeared 4 h post-procedure. Based on the clinical picture and additional tests, the diagnosis of erysipelas was made. The second episode occurred two months following the filler administration. After antibiotic treatment, a resolution of symptoms was observed.

The second patient, a 42-year-old woman, without diagnosed chronic diseases and no history of allergic reactions, reported three transient swelling of the infraorbital area along with the upper and lower lips. Previously, these places were injected with hyaluronic acid several times. The physical examination revealed no accompanying redness, increased warmth, or tenderness on palpation. Each episode occurred during infection of the throat and tonsils with accompanying fever. The swelling would resolve spontaneously after 3 days each time.

Infections can occur at any time after the procedure. Practitioners must use dermal fillers with precaution and indicate expertise in avoiding, as well as coping with potential complications.

## Viral infection of unclear etiology in a 42-year-old patient with Darier's disease

Zakażenie wirusowe o niejasnej etiologii u 42-letniego pacjenta z chorobą Dariera

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Darier's disease (dyskeratosis follicularis) is a genetically conditioned skin disorder, which may lead to keratosis, especially follicular one. Each new infection can significantly intensify the symptoms.

A 42-year-old patient, with a long history of brownish-gray papules in the limbs and trunk, was admitted to the Dermatology Department in order to diagnose and treat the one week history of skin lesions on his arms, chest, neck, and partially face. The lesions presented initially as intense erythema, then covered with multiple papules and grouped vesicles accompanied by burning sensation and fever. Ultrasonography of the cheek and neck on the left side revealed edema of the subcutaneous tissue without the abscess formation with numerous enlarged cervical lymph nodes. In the blood culture *S. aureus* MSSA was detected. No parasites have been founded in stool, anti-HSV-2 antibodies were negative, however IgG anti-HSV-1 antibodies were positive. Histopathological examination of the skin biopsy revealed individual cells containing eosinophilic cytoplasmic inclusion bodies, which in correlation with the clinical data may suggest Poxviridae infection along with a typical picture for Darier's disease.

Darier's disease is a rare autosomal dominant dermatosis. Especially hard to diagnose correctly because of localisation or widespread cutaneous viral infections. Eczema herpeticum, eczema vaccinatum or other Pox-zoonosis could be the explanation of the severe course in our patient. The most important in diagnosis is the result of the histopathological examination. Due to the localization of lesions in Darier's disease, superinfections are frequent. It is important to remember about UVB radiation as an exacerbating factor.

## Necrobiotic xanthogranuloma with periocular involvement: a therapeutic challenge

Xanthogranuloma necrobioticum okolicy oczodołowej: wyzwanie terapeutyczne

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Necrobiotic xanthogranuloma is a rare, chronic granulomatous disease which manifests by the presence of yellowish papules and nodules, usually located in the periocular area. Due to its rarity, the diagnosis and treatment of this dermatosis may sometimes pose a difficulty.

We present a case of a 66-year-old man with necrobiotic xanthogranuloma in the course of monoclonal gammopathy of undetermined significance coexisting with idiopathic neutropenia along with treatment difficulties of this rare entity.

Asymptomatic yellow-brown and flesh-coloured papules and plaques have been observed for several months prior to the first presentation. Based on the clinical examination and histopathological image necrobiotic xanthogranuloma was diagnosed. Initially, no treatment was given due to asymptomatic course of the lesions. However, over the following few months, increased hardness of the lesions was observed which affected the eyelid function. The patient was treated with intralesional glucocorticoids (GKS) with partial improvement. After 2 years the worsening of the disease was observed again and second treatment course with topical treatment (GKS, 0.1% tacrolimus ointment) and later intralesional GKS was unsuccessful. After discussing possible treatment options with hematologist intravenous immunoglobulins were administered with significant clinical improvement.

The patients with the diagnosis of periocular necrobiotic xanthogranuloma should receive long-term follow up to monitor the influence of the disease on eyelid function. It is important to remember about the possible coexistence with hematological disorders. In some patients multiple treatment methods must be used to achieve a clinical improvement.

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## Application of dermoscopy in the diagnostics of Ekbom's syndrome – a case report

Zastosowanie dermoskopii w diagnostyce zespołu Ekboma – prezentacja przypadku

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Ekbom's syndrome (delusional parasitosis or delusional infestation), manifests in the patient's belief that living organisms or inanimate materials are present on or within their skin. Characteristic of delusional infestation is the matchbox sign or specimen sign. It means that a patient brings "pathogens" (hair, pieces of clothing, pieces of skin), which are believed to be a cause of the symptoms.

A 63-year-old woman who presented to dermatology outpatient clinic complained of skin pruritus and "the feeling of parasites on or within her skin". At the appointment she delivered a "bundle with parasites" which, in her opinion, were the causative agent. Upon physical examination excoriations, small scars and post-inflammatory hyperpigmentation were revealed in the interscapular area of the back and on the front surface of the lower limbs. The "parasites" provided by the patient, assessed with videodermoscopy, proved to be fragments of hair and fibers of fabric. Videodermoscopic examination revealed no evidence of scabies or inflammatory dermatosis. The causes of symptomatic pruritus were excluded in the extended diagnostics. Detailed discussion of the problem together with the patient and her daughter, along with the visualization of "samples" in the videodermoscopic examination, prompted the patient to start psychiatric treatment.

Dermoscopy can be a useful tool that facilitates differential diagnosis of delusional parasitosis. Detailed examination of the "samples" brought by the patient increases the likelihood of them undertaking further treatment.

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## Mycosis fungoides with an infiltration of the eye socket in 70-year old female patient – case report

Ziarniniak grzybiasty z naciekiem oczodołu u 70-letniej pacjentki – opis przypadku

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Mycosis fungoides (MF) is the most common primary T-cell cutaneous lymphoma (CTCL) accounting for up to 50% of all patients with primary cutaneous lymphomas. As the clinical symptoms of the early stage of MF are rarely specific and could be easily confused with other skin disorders, reaching an accurate diagnosis might be challenging. Skin tumors, erythroderma and blood or visceral involvement generally occur in advanced stages along with the immunodeficiency that leads to severe opportunistic infections.

In the undermentioned work we present a case of a 70-year-old woman with a three-year-old history of cutaneous erythematous-infiltrative changes, macrocytic anemia, thrombocytosis and multiple disintegrating lumps, ultimately diagnosed as IIB stage mycosis fungoides with an infiltration of the eye socket. Despite the numerous treatment routes (Acitretinum, Methotrexate, CHOP, BGD), no improvement was observed and the disease progressed, therefore it was decided to apply Brentuximab Vedotin. At this time the patient developed a tumor with a central breakdown, which invaded her eyelids and eye socket, leading to displacement of the eyeball. Regardless of radical radiotherapy of the face infiltration's area, the eyeball was exenterated.

We present a case of a rarely occurring form of MF which involved the ocular structures of the patient and required fast, radical and advanced therapy. Contrary to prior conventional treatment routes that have been used, Brentuximab Vedotin has shown its efficacy and partial remission has been achieved.

## Intentional or accidental? Case report of dermatological factitious disorder of the neck and occipital region

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The self-induced dermatoses represent about 2% of dermatology patient visits. Dermatological factitious disorder includes actions which lead to the damage of the body tissues however there are not certified any suicidal intentions.

A 75-year-old man was admitted to the Dermatology and Venerology Department due to 4-year history of a large shallow ulceration of a bizarre shape on the neck and occipital region. In the differential diagnostics inter alia basal cell carcinoma and pyoderma gangrenosum were considered. Laboratory tests revealed decreased values in morphology, increased CRP and IgA. A bacteriological examination showed *Staphylococcus aureus* MSSA. A histopathological examination revealed ulceration with substantial inflammatory infiltration and epithelium hyperplasia with presumably reactive dysplasia. Systemic and local treatment along with covering with wound dressings resulted with fast clinical improvement.

Dermatological factitious disorder occurs rarely, thus it can be misdiagnosed as more common diseases. It most often coexists with emotionally unstable and immature personality. Accurate interview and histopathology are of superior importance in diagnosis. Psychotherapy, antidepressants or antipsychotics are crucial in treatment.

## Targetoid hemosiderotic hemangioma – one tumor, many clinical faces

*Targetoid hemosiderotic hemangioma – guzek o wielu obliczach klinicznych*

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Targetoid hemosiderotic hemangioma (hobnail hemangioma, TTH) is a rare vascular lesion that most

commonly occurs on the limbs or trunk in young adults. Due to its rarity and evolving clinical presentation diagnosis may sometimes be challenging. In differential diagnosis benign and malignant skin tumors should be considered, including hemangioma, angiokeratoma, dermatofibroma, melanocytic nevus, Kaposi's sarcoma and amelanotic melanoma.

A 26-year-old patient was referred to Dermatology Department with hypopigmented, growing tumor on the anterior aspect of the left thigh due to suspicion of cutaneous melanoma. According to the patient, the lesion had been present for approximately 10 years, but started to grow during the last 3 years and was dynamically changing its appearance from purple tumor to brownish plaque. The patient was generally healthy and personal/family history of cutaneous neoplasia was negative. At the time of examination clinical and dermoscopic presentation was unspecific, but self-made pictures provided by the patient documenting clinical evolution of the tumor allowed for presumptive diagnosis of TTH, which was later confirmed with histopathological examination.

TTH is a rare skin tumor which should be considered in differential diagnosis of non-pigmented and partially pigmented solitary skin lesions. Clinical photographs provided by the patient may facilitate the diagnosis, however histopathological evaluation remains the gold diagnostic standard.

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## Mucosal erosions in a patient with methotrexate overdose

Nadżerki śluzówki u pacjenta, który przedawkował metotreksat

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Methotrexate is widely used in autoimmune diseases treatment, including rheumatoid arthritis and severe psoriasis. It has an undeniable effectiveness, however it also has many side effects with myelosuppression, hepatic or renal dysfunction and cutaneous ulceration

being the most frequently observed. The recommended dose is 10–20 mg *p.o.* per week, but regular monitoring and advising on drug interactions are essential to avoid severe side effects and overdose, which can even lead to patient's death.

A 66 years old male patient was admitted to the hospital due to mucosal erosions in the oropharyngeal cavity, noticed a week before. His medical history included arterial hypertension and rheumatoid arthritis recently treated with methotrexate. The patient was taking 10 mg of the medication daily for 14 days, not weekly as recommended. Thrombocytopenia, kidney dysfunction and high C-reactive protein level were observed in the laboratory tests. Methotrexate was immediately stopped and the treatment with 30 mg of prednisone *p.o.* per day was started. The patient's clinical condition and the results of the laboratory tests gradually improved and after nine days he was discharged from the hospital.

Dermatologists should be aware of the side effects of methotrexate and possible misunderstandings of taking the medications daily not weekly as prescribed, especially by elderly patients.

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## Cutaneous larva migrans syndrome in a 9-year-old boy who returned from tropical country

Zespół larwy skórnej wędrującej u 9-letniego chłopca powracającego z kraju tropikalnego

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Cutaneous larva migrans syndrome is caused by the larvae of the cat or dog hookworms, most commonly *Ancylostoma braziliense*, that is usually acquired in tropical regions. Infection occurs through skin contact with soil contaminated with animal excrement. The clinical presentation is dominated by pruritus and characteristic skin lesion – creeping eruption which is erythematous migrating, serpiginous raised track. Typically, the feet, buttocks, and thighs are the affected sites, but any part of the body may be involved.

A 9-year-old boy referred to the Department of Dermatology due to intensive pruritus and skin lesion on the foot. A week earlier patient returned from vacation in South Africa. Moreover, the patient did not wear shoes while walking on the beach. During examination, a serpiginous linear erythema was visualized on the boy's left foot, slightly raised above the skin surface. A scab was present in the medial part of the lesion. Based on the characteristic clinical



presentation – creeping eruption on the foot – and a history of travel to tropical country, cutaneous larva migrans syndrome was diagnosed. Treatment included albendazole 400 mg for 3 days. The skin lesions resolved within a week.

As travels to tropical destinations happen to be more popular the health education of tourists going to tropical zone countries plays an extremely important role to reduce the incidence of cutaneous larva migrans. Prevention of infection is very important and includes the obligation to wear footwear on coastal beaches and using towels while sitting on the ground.

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## Pregnancy-associated melanoma – a case report

### Czerniak związany z ciążą – prezentacja przypadku

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Pregnancy-associated melanoma is a term defining melanoma diagnosed during pregnancy or within one year after delivery. Cutaneous melanoma is the most common neoplasia reported during pregnancy and the one that most often metastasizes to the fetus and placenta. It is controversial whether women diagnosed with melanoma during pregnancy or within a postpartum period have poorer prognosis.

A 34-year-old woman, in the third week of her postpartum period, presented to dermatology department due to growing, pigmented skin tumor of the abdomen. The lesion had occurred approximately one year before and was noticed by her gynecologist in the first trimester, who advised prompt dermatological assessment. The patient however delayed the appointment until the end of her pregnancy. Based on clinical and dermoscopic evaluation, melanoma was suspected. The tumor was excised and histopathological examination confirmed the diagnosis of superficial spreading melanoma in vertical growth phase (Breslow thickness 6 mm, BRAF(+)). The sentinel lymph node biopsy was performed, revealing macrometastases. No signs of metastatic disease were found in computed tomography of the chest and the head. The same situation was present in ultrasound of the axillary and inguinal lymph nodes, abdominal ultrasound and positron emission tomog-

raphy. Systemic treatment with dabrafenib and trametinib was initiated.

Influence of pregnancy on melanoma development and evolution of melanocytic nevi is still unclear. If melanoma is suspected in a pregnant woman, removal of the lesion should not be delayed until delivery.

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## Case of cutaneous larva migrans in a 64-year old patient

### Zespół skórnej larwy wędrującej u 64-letniego pacjenta

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Cutaneous larva migrans (CLM) is an infectious disease caused by hookworms larvae. It is characterized by the presence of creeping skin lesions due to formation tortuous tubules with inflammatory reaction. CLM is most commonly transmitted by animal faeces depositing eggs in the soil, with larvae entering humans through direct contact with skin.

A 64-year-old man patient was admitted to Dermatology Department in order to diagnose and treat the one-month history of skin lesions over the skin of the left lower limb. Initially a small papule appeared, which was indolent, itchy and fast-growing. The patient was diagnosed for eczema cruris with secondary bacterial infection and treated with oral antibiotics, antifungals, antihistamines and topical steroids and antibiotics with no improvement. On the admission papular lesions with tunnels and serpiginous erythema on the left limb with accompanying intense pruritus were noted. Laboratory studies revealed anemia and hematuria. Based on the clinical picture cutaneous larva migrans was diagnosed. Systemic treatment with mebendazole and topical treatment resulted in fast clinical improvement.

Although cutaneous larva migrans is usually endemic, due to the increasing frequency of foreign travels, the disease prevalence rises. Most of the cases are initially under-diagnosed, which results in a delay in proper treatment. Therefore, pruritic lesions, and especially showing no improvement after treatment with corticosteroids and antihistamines, parasitic etiology should always be considered.

## The diagnostic challenges presented by patient with squamous cell carcinoma

Trudności diagnostyczne u pacjenta z rakiem kolczystokomórkowym skóry

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Cutaneous squamous cell carcinoma is a carcinoma that originates in the cells of the squamous layer of the epidermis. It is the second most common skin cancer. It has the form of nodular papillary or ulcerative lesions with a marked basal infiltration. Histopathological examination is conclusive in its diagnosis. The cure rate in skin cancers up to 2–3 cm is over 90%.

A 62-year-old patient was admitted to the Department of Dermatology due to an enlarging erythematous infiltrative lesion on the top of the scalp. Physical examination showed epidermal thinning, translucent blood vessels and accumulation of the crusts within the lesion. Prior to the clinic visit, the lesion was diagnosed by the surgeons and oncologists. However, histopathological results were inconclusive and the diagnosis was not established. After admission to the Dermatology Department, skin biopsy under dermatoscopic guidance was performed. Histopathological examination showed the presence of moderately differentiated squamous cell carcinoma. Due to the inoperable nature of the lesion, the patient was referred to the radiotherapy.

To sum up, squamous cell carcinoma of the skin is characterized by rapid growth and tendency to metastasize. With the passage of time its course deteriorates, therefore its early detection is so important. To avoid misdiagnosis especially in doubtful cases, skin biopsy guided by dermoscopy would be beneficial.

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## Rare clinical presentation of severe seborrheic dermatitis in an infant

Rzadki obraz kliniczny ciężkiego łojotokowego zapalenia skóry u niemowlęcia

Natalia Bień

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Infantile seborrheic dermatitis often occurs during the first 3 months of life and most frequently presents as erythema and greasy scales located especially on the scalp (commonly called “cradle cap”). We report a rare case of severe seborrheic dermatitis in an infant.

A 5-weeks male infant was admitted to the dermatological department with erythrodermic scaling lesions and exfoliation of the outermost layer of epidermis, which had appeared after birth. Greasy scales were observed on the scalp, eyelids and face accompanied by inflammation of the eyelids. Moreover, erythematous, well demarcated lesions were noticed in the neck folds, behind the ears, in the axillary region and diaper area. In blood tests results, CRP level was elevated (18.43 mg/l). The treatment including 1% tannic acid, 0,5% erythromycin eye cream, clotrimazole cream, hydrocortisone cream and emollients was started in hospital with a good response. After a month of therapy, the patient was re-admitted for the follow up, with further improvement of the skin condition.

Based on clinical presentation infantile seborrheic dermatitis seem to be the most probable diagnosis. Although the cradle cap occurs in infants quite often, the generalized seborrheic lesions observed in our patient are less frequent. Considering differential diagnosis including atopic dermatitis, Langerhans histiocytosis and congenital ichthyosis and close follow-up are crucial for final diagnosis.

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## Melanoma arising in an extensive melanocytic nevus with atypical treatment complications

Czerniak rozwijający się w rozległym znamieniu barwnikowym z nietypowymi powikłaniami leczenia

Mateusz Ziomek

Trustee of the paper: lek. Paweł Sobczuk

Giant congenital nevus (GCN) is defined as abnormal accumulation of melanocytes with a diameter greater than 20 cm. The risk of malignant transformation GCN into melanoma during all life is assessed between 5% and 20%. Moreover, approximately 30% of melanomas are histologically associated with a melanocytic nevi, which cause additional diagnostic difficulties. Treatment of melanoma occurring within GCN can be challenging and requires discussion in multidisciplinary team (MDT).

We herein report a case of 41-year-old woman presented to our hospital because of appearance of small nodules (size 2–6 cm) within unusual, giant congenital melanocytic nevus involving near-total skin of right upper limb and half of the back. The histopathological examination showed cutaneous melanoma, BRAF wild-type. Computed tomography (CT) revealed metastases in the axillary lymph nodes. Due to unresectable disease patient was qualified by MDT to receive combined immunotherapy with nivolumab (1 mg/kg) and ipilimumab (3 mg/kg). After 4 course of the treatment patient developed peripheral edema and painful discoloration of lower limbs. Superficial thrombophlebitis was diagnosed and suspected to be a paraneoplastic syndrome. Controlled CT confirmed disease progression – new metastatic lesions in liver. Patient started second line treatment with chemotherapy.

This case highlights how important is regular dermatological examination patients with GCN which could help in early diagnosis of malignant transformation. We also emphasize the risk of developing atypical adverse events in patients treated with immunotherapy which often require an interdisciplinary approach shown in our case.

## Drug-induced hypersensitivity syndrome in allopurinol treatment

Zespół nadwrażliwości polekowej w leczeniu allopurinolem

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Trustee of the paper: prof. dr hab. n. med. Rafał Czajkowski, dr n. med. Luiza Marek-Józefowicz

Adverse cutaneous drug reactions can mimic many morphological changes in dermatology. Diagnosis of patients suspected of having the drug reaction involves analysis of time between administration of drug and appearance of lesions and exclusion of infections, which clinical picture may be very similar.

An 82-year-old man presented to the Department of Dermatology for diagnosis of acute maculopapular rash clustering on the chest and back with erythematous lesions present on the face. In addition, conjunctivitis, eyelid retraction of both eyes, and oral erosions were found. Three weeks before the patient's skin lesions appeared, allopurinol was started. Laboratory tests performed showed leukocytosis with neutrophilia, eosinophilia, and lymphopenia. Elevated inflammatory parameters were observed although the patient did not have a fever. A diagnosis of DRESS syndrome was made based on RegiSCAR criteria. Allopurinol was discontinued and systemic corticosteroids were started along with antihistamines and hepatoprotective drugs. Significant improvement in local condition and normalization of inflammatory markers were obtained.

DRESS syndrome can have a life-threatening course due to secondary infection or severe hepatitis. Among the drugs that induce DRESS are antiepileptics, sulfonamides or, as in this case, allopurinol. Up to 8 weeks may elapse between exposure to the drug and clinical symptoms, making diagnosis difficult. Treatment consists of discontinuing the drug that caused the disease and to inclusion of pulses of glucocorticosteroids.

## Red light LED therapy as treatment for frontal fibrosing alopecia in a patient with *Demodex folliculorum* infestation

Zastosowanie czerwonego światła LED w terapii łysienia czołowego bliznowaciejącego u pacjentki z zakażeniem *Demodex folliculorum*

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*Demodex folliculorum* is a saprophytic mite that inhabits human hair follicle. Nowadays many studies show connection between *Demodex folliculorum* infestation and different inflammatory skin conditions such as: rosacea, blepharitis, otitis externa, folliculitis and alopecia. The clinical diagnosis and treatment of *Demodex* infestation of the scalp may be challenging.

We present a clinical case of a 57-year-old female with frontal fibrosing alopecia. The patient was initially treated with hydroxychloroquine and topical steroids with clinical improvement. After a year of the therapy the skin lesions worsened and pruritus increased. What is more, papules and pustules appeared on the patient's face. Therefore, the patient was tested for the presence of *Demodex* mites. *Demodex folliculorum* was detected both on the face and the scalp. The patient received topical 1% ivermectin for the face lesions. The therapy of frontal fibrosing alopecia was modified. Topical steroids were discontinued and redlight LED therapy was started. After 7 irradiations pruritus subsided and retest showed no presence of *Demodex* mites on the scalp.

LED light therapy turned out to be effective way of treating patient with FFA and *Demodex folliculorum* infestation. LED light therapy is safe and might bring satisfying results in treatment of skin conditions connected with *Demodex folliculorum*. However further studies are required.

## Oral potentially malignant disorders – five case reports

Zmiany potencjalnie złośliwe w jamie ustnej – opisy pięciu pacjentów

Natalia Kempa, Paulina Adamska, Anna Starzyńska

Oral potentially malignant disorders (OPMDs) are conditions which include dysfunctions of structure, appearance, differentiation and maturation of the epithelium. OPMDs constitute the first stage of malignant transformation. In the presence of various factors, the originally healthy mucosa becomes hyperplasia and then low, moderate and high dysplasia. High grade dysplasia means cancer in situ. The final stage is the development of invasive squamous cell carcinoma. The aim of the study was to describe five cases of OPMDs.

We present a case series of five patients who presented mucosal lesions. Further medical examinations were performed. The presence of leukoplakia was found in four patients. In another one lichen planus was discovered.

Early diagnosis of potentially malignant oral conditions is crucial. In this way, it is possible to prevent malignant transformations, e.g. by eliminating risk factors or implementing treatment. For this reason, regular examinations should be performed by dentists and dental students.

## Trichotillomania – dermatological or psychiatric problem?

Trichotillomania – problem dermatologiczny czy psychiatryczny?

Natalia Sak, Przemysław Hałasiński, Magdalena Jałowska

Trichotillomania is a psychiatric disorder characterized by the inability to control the urge to pull out own hair from various parts of the body. Usually hair pulling is preceded by increasing tension, which is intended to bring short-term relief. In 75% of cases the problem is related to the scalp. The highest number of cases is observed among people between 4 and 17 years old.

A female 10-year-old patient reported to the Dermatology Outpatient Clinic for excessive hair loss

on the top of her head that began 3 weeks ago. The patient reported no chronic medical conditions. The patient had laboratory tests including a blood count, thyroid profile, creatinine, and glucose. No abnormalities were found. In dermatological examination, hair was thinned on the top of the head. The trichoscopy showed numerous black dots, single tulip-shaped hairs, V-shaped hairs, broken hairs and hair powder. Additionally, Wood's lamp examination, direct mycological examination and culture were ordered. All tests were negative. The above scalp picture raises suspicion of trichotillomania. Therefore, the patient was referred for psychological consultation.

In making a proper diagnosis of trichotillomania, other somatic conditions (e.g. dermatologic diseases) and other psychiatric disorders that could also run with scalp hair loss should be excluded. Due to the possibility of deterioration of the general condition of the patient caused by e.g. trichophagia, a quick diagnosis and determination of the etiology of the disorder is required. Only such a behavior will allow to introduce the appropriate treatment scheme.

6 series of scalp injections of trimacynolone actonide at a concentration of 10 mg/ml. Due to the persistence of subjective symptoms, irradiation with 635 nm red light was added to the treatment. Thanks to the combination of two parallel topical therapies, a significant improvement was observed, the scalp was no longer red, itching and hypersensitive. Neither the development of scars nor new places of scarring were noticed.

The presented case demonstrates the beneficial effect of combining triamcinol acetone injections and LED irradiation. Combined therapy gives a chance to stop the disease process and eliminate the symptoms without the need to take oral medications, which are often associated with side effects on other organs.

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## Combined topical therapy of scarring alopecia – a case report

### Łączona terapia miejscowa w łysieniu bliznowaciejącym – opis przypadku

Aleksandra Nowińska, Monika Grudzeń

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Lichen planopilaris is a scarring alopecia leading to progressive and irreversible hair loss. It is the most common cause of scarring alopecia. The main symptoms are erythema, follicular keratosis, severe itching, burning and hypersensitivity of the skin. These symptoms are nondistinctive and may indicate many other disease entities – one of such symptoms is “red scalp syndrome” – generalized inflammation and redness all over the scalp. The most common problem is to make a diagnosis and choose an appropriate therapy, as there is currently no possibility of causal treatment. The aim of treatment is reducing inflammation, pruritus and inhibiting the progression of changes.

We present a case of a 23-year-old female patient with diffuse thinning of hair, intensive pruritus and hypersensitivity of the scalp. Biopsy confirmed the diagnosis of lichen planopilaris. The patient received

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## Case of human subcutaneous dirofilariasis

### Przypadek ludzkiej dirofilariozy podskórnej

Aleksandra Nowicka, Agnieszka Ćwikłowska, Artur Czaplewski

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Dirofilariasis is a zoonotic disease for which humans are occasional hosts. Infection can occur through mosquito bites in endemic areas. In humans, this disease has two clinical forms, and the infection can be often asymptomatic. Outbreaks can occur in any area, but usually they affect the upper part of the body. In Europe, cases of subcutaneous dirofilariasis have been reported most frequently in the Mediterranean countries, but the incidence of the disease extends to central and northern Europe.

A 52-year-old patient was diagnosed in the Department of Dermatology due to recurrent swelling in the area of the face and subcutaneous nodules located on the head. During the medical interview, she reported trips to Spain and Croatia over the past year. Initial local and general treatment at the Clinic reduced the swelling, but the subcutaneous nodules failed to treat. Diagnostics was extended to detect parasites. The histopathological evaluation of the material isolated from the subcutaneous nodule revealed the presence of *Dirofilaria* spp. The whole picture and additional tests indicated the parasitic disease and subcutaneous dirofilariasis. Appropriate



antiparasitic treatment was applied and the patient left the clinic in good condition.

Diagnostic difficulties and incorrect initial diagnosis result from the rarity of dirofilariosis in this climatic zone, which is why it is so important to pay attention to a detailed interview extended with the information about recent travels. Diagnosed and treated subcutaneous dirofilariosis guarantees good prognosis and fast recovery.

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## Overdose of methotrexate as cause of drug-induced multi-organ damage

### Przedawkowanie metotreksatu jako przyczyna toksycznej wielonarządowej reakcji polekowej

Łukasz Kopoczyński, Agnieszka Ćwikłowska

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Erosive lesions can be caused by infections of herpesviruses, autoimmune diseases like pemphigus or as a complication of pharmacotherapy. Symptoms accompanying erosions, such as dysphagia or diarrhea, should prompt an extensive diagnosis.

A 68-year-old female patient reported to the Department of Dermatology for diagnosis of erosive lesions localized in the oral mucosa, labia minora and anal region. These changes appeared 3 months before hospitalization. In addition, there was difficulty swallowing, dry cough, diarrhea. Due to Rheumatoid Arthritis, the patient had been taking methotrexate for many years without folic acid supplementation. Diagnostic studies revealed pancytopenia, elevated CRP level and vitamin B<sub>12</sub> deficiency. Swabs were taken from mucosal erosions for microbiological examination and ANA-Hep 2 antinuclear antibody testing was performed. Methotrexate was discontinued. Topical anti-inflammatories were applied to the skin and mucosal lesions, vitamin B<sub>11</sub> was administered, and 2 units of red cell concentrate were transfused. There was significant improvement in blood count parameters, decrease in CRP level and healing of most of the erosions were obtained. On the basis of the physical examination and additional tests, a diagnosis of toxic multiorgan drug reaction was made.

The incidence and severity of adverse reactions to methotrexate are related to the dose and frequency

of administration of the drug. Morphology, liver enzyme activity, serum bilirubin and albumin levels as well as renal function should be evaluated during treatment with this drug. Patients should be advised to consult a physician immediately if symptoms of poisoning occur.

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## Acne – from a dermatologist to a neurosurgeon – a case report

### Trądzik – od dermatologa do neurochirurga – opis przypadku

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Cushing's disease is caused by a prolonged and excessive secretion of the adrenocorticotrophic hormone by a benign pituitary adenoma. Typically, it is associated with facial acne, hirsutism, violaceous striae, irregular menstruation, obesity, "moon" face and "buffalo hump". Particularly, it can appear as a singular non-pathognomonic symptom like severe acne which can involve even a neurosurgical treatment.

A 27-year-old female was admitted to a clinic in September 2020 due to a flare-up of acne, despite three-month treatment with tetracycline. On admission, the patient presented severe acne lesions and additional facial hair. She had regular but scanty menstrual bleeding and denied weight gain, arterial blood hypertension, muscle weakness, symptoms of a glycaemic disorder. In physical examination, there were no signs of Cushing Syndrome (stretch marks, accumulation of abdominal fat, atrophy of muscles). Laboratory tests revealed the lack of the circadian rhythm of cortisol and no inhibition of cortisol secretion in the dexamethasone suppression test. The Computed Tomography of adrenal glands did not reveal any abnormalities. Due to the suspicion of Cushing's disease CRH tests and pituitary magnetic resonance imaging (MRI) was performed. MRI confirmed the presence of microadenoma in the adenohypophysis. The patient was referred to surgical treatment.

Skin manifestations are very common conditions that can indicate rare specific endocrine disorders. Therefore, chronic acne with high cortisol blood level should be differentiated with metabolic diseases, even if the patient doesn't present any other symptoms.

Cushing's disease can manifest non-specifically and constitute a diagnostic challenge for clinicians.

## Radio-induced angiosarcoma

### Angiosarcoma po radioterapii

Katarzyna Mączka

Angiosarcoma is a rare malignant neoplasm accounting for 1-2% of sarcomas found in adults. It originates from vascular endothelial cells and usually develops in the area of head and neck (2/3 of cases). Angiosarcoma is characterized by varied clinical features and the course of the disease what often results in late diagnosis and, therefore, unfavorable prognosis.

80-year-old woman presented to the Department of Dermatology at Medical University of Warsaw in June 2021 with greyish-brown nodular infiltrating skin lesions that first occurred in April 2020, covering now 90% of the right breast surface. The patient had a history of right breast tumor diagnosed in 2015 which was surgically removed (tumorectomy with axillary lymph nodes dissection). Subsequently, adjuvant radiotherapy and hormonal therapy were administered. The histopathological examination of the skin sample from the right breast (April 2020) presented the image of atypical vascular lesion. Ultrasonography, mammography and computed tomography showed no signs of cancer recurrence. Skin biopsy was performed again in June 2021 revealing atypical blood vessels with hyperchromatic and atypical endothelial cells. Basing on the cancer history as well as clinical and histopathological features, angiosarcoma of right breast was diagnosed. The patient was referred to the oncology department to receive further treatment.

Due to the unspecific clinical and radiological features of angiosarcoma associated with poor prognosis, caution should be advised. It is important to differentiate atypical vascular lesions from angiosarcoma in the areas of body which were previously exposed to radiation.

## Exfoliative cheilitis in 21-year-old female patient

### Złuszczające zapalenie czerwieni wargowej u 21-letniej pacjentki

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Exfoliative cheilitis is a inflammatory condition affecting the vermilion of the lips and characterized by production of a thick keratin scale. The etiology and pathogenesis of this condition are still unknown, although several studies sources relate exfoliative cheilitis with the habit of licking or biting the lips. Affected. Patients can develop functional and aesthetical problems, leading to social isolation. No single specific diagnostic test has been found to detect this disease, therefore the diagnosis is based on the exclusion of other ailments that may result in similar changes in the area of the lips.

A 21-year-old female was referred to the Clinic because of chronic thick hyperkeratotic plaques on both lips. She was presented 4 years history of chronic thick yellowish hyperkeratotic plaques on both lips which became thicker and were accompanied by pain and oozing. She had some difficulties in talking and eating. She complained that her lips kept getting crusts in spite of conventional treatments. In the past she was treated with numerous antiviral drugs, antibiotics and steroids. During her stay at the Clinic complementary tests were indicated which did not reveal any changes. She was treated with antibiotics, immunosuppressants and steroids. After 2 months of therapy with Disulone she noticed a significant improvement.

EC diagnosis and clinical management are challenging, hence the need to make an accurate diagnosis, excluding other conditions with the aid of complementary tests. Given the limited available data, the approach to optimal management of EC remains unclear.

## Extensive hidradenitis suppurativa treated with wide radical excision and skin grafting – a case report

Leczenie zaawansowanego hidradenitis suppurativa radykalnym wycięciem chirurgicznym z przeszczepem skóry – opis przypadku

Natalia Dąbrowska, Katarzyna Osiak,  
Jarosław Wejman, Artur Pasternak

Acne inversa also referred to as purulent apocrine gland inflammation (hidradenitis suppurativa, HS) is a chronic inflammation of the skin, which causes painful and purulent lesions that occur routinely in areas with a large number of apocrine glands, such as axillae, groins and inframammary folds.

This is the case of a 46-year-old woman with treatment of resistant Hurley Stage III HS. The patient underwent a series of surgical operations with wide radical excision of all involved tissue and graft procedures to treat extensive HS lesions in different anatomical areas.

Numerous treatment modalities are known and used but the effects are not stable enough to prevent the recurrences. Surgery is regarded as the most effective treatment or even the only effective treatment for severe HS. In addition to standard pharmacological and surgical treatment, one should remember about optimization of the nutritional parameters, reduction of friction and pressure in the affected area, appropriate wound care, weight loss and smoking cessation.

## Guttate morphea and lichen sclerosus – coexistence or different presentation of the same entity?

*Morphea guttata* i liszaj twardzinowy – współistnienie czy odmiany tej samej choroby?

Piotr Nawrot

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Guttate morphea and lichen sclerosus are two dermatological diseases that may cause diagnostic

difficulties due to similar clinical and pathological characteristics. One of the main challenges of clinical practice is differential diagnosis of these two inflammatory dermatitis and appropriate patient management. However, coexistence of these two conditions have been described in literature. The issue is whether they coexist or may be considered as different presentation of one sclerotic disease especially on the glabrous skin.

We present a 32-yo patient with sclerodermic asymptomatic skin lesions, with dermoscopy corresponding to lichen sclerosus with histopathological examination showing coexistence of guttate morphea and lichen sclerosus on the same patient. Lesions were present on her abdomen trunk and back. They have been present over a year, being treated topically without the effect with noticeable progression. The first biopsy of the papular lesion from the abdomen revealed fibrosis of reticular dermis and edema of papillary dermis with homogenization of collagen fibers. The atrophy of adnexal structures was noticeable with accompanying perivascular and interstitial inflammation of the superficial and deep dermis. The second biopsy from the abdomen revealed lichen sclerosus.

There are reports of the coexisting morphea and lichen sclerosus on the same patient or at the same lesion. Both diseases may have overlapping clinical presentations but lichen sclerosus has particular dermatoscopic appearance. In cases of coexistence and noticeable progression of the skin lesions, the systemic treatment or phototherapy should be considered.

## Multinucleate cell angiohistiocytoma: a case report

Multinucleate cell angiohistiocytoma: opis przypadku

Carolyn Szwed

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Multinucleate cell angiohistiocytoma (MCAH) is a benign, yet particularly rare cutaneous entity with an indolent course. It typically presents as slowly progressive, grouped red to violet papules on the extremities of middle-aged and elderly women. Spontaneous remission is uncommon. MCAH may resemble Kaposi sarcoma, lichen planus, or granuloma annulare; therefore, characteristic clinical and

histopathological findings are essential for a definitive diagnosis.

A 64-year-old previously healthy woman presented with multiple violaceous papules and nodules located on the dorsum of both hands. The lesions were painless and had been present for several years. Physical examination revealed soft, round, non-desquamating lesions ranging in size from 2 to 6 mm. A papule located on the left hand was excised with a presumed diagnosis of cutaneous lymphoma or granuloma annulare. Microscopic examination of the lesion revealed the presence of basophilic multinucleated giant cells and factor XIIIa-positive fibrohistiocytic interstitial cells in the reticular dermis surrounding dilated blood vessels. Ultimately, given the clinical and histopathological findings, a diagnosis of MCAH was made.

MCAH is rarely suspected clinically and, as a result, likely underdiagnosed. This case, a quite typical presentation, highlights the importance of considering MCAH in the context of red to violet lesions resembling granuloma annulare in a middle-aged individual. The presence of basophilic multinucleated giant cells is characteristic and confirms the final diagnosis. In conclusion, multinucleate cell angiohistiocytoma is an extremely rare entity with distinct histopathological findings that can sometimes be very subtle.

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## Evaluation of the effectiveness of androgenetic alopecia treatment in men using platelet-rich plasma: A systematic review of randomized, placebo-controlled trials

Ocena skuteczności leczenia łysienia androgenowego z zastosowaniem osocza bogatopłytkowego – przegląd systematyczny randomizowanych badań z grupą placebo

Julia Maria Borowiecka, Łukasz Pałka

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Platelet-rich plasma becomes more and more popular treatment alternative or additional method in androgen alopecia (AGA). AGA is a multifactorial disease, in which testosterone plays a significant role in influencing hair growth.

The aim was to evaluate the effectiveness of PRP treatment in androgenetic alopecia affecting men.

The research was performed using the following databases: PubMed, Embase, and Cochrane Library. The effects were measured with a TrichoScan and the measure of the effect was the difference between the initial and final hair density.

A significant difference was observed between the areas of the scalp where PRP injections were made and those where saline was administered.

Compared to conventional minoxidil 5% topical platelet-rich plasma therapy PRP is more effective in male-pattern baldness treatment. A beneficial effect of combining PRP therapy with minoxidil 5% was observed, therefore PRP is not only an excellent alternative for patients in whom the minoxidil 5% topical monotherapy did not bring the expected effect or experienced unacceptable side effects, but also can be used as a complementary therapy.

## Dermatoses of pregnancy

### Dermatozy ciężarnych

Kinga Filipek, Natalia Zalewska

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Dermatoses of pregnancy are skin conditions that occur during pregnancy and might cause diagnostic difficulties. However, data about epidemiology of dermatoses of pregnancy is inconsistent while most women report dermatological problems during gestation.

Pruritic urticarial papules and plaques of pregnancy (PUPP) is one of the most common dermatoses of pregnancy and usually appears in the third trimester, more frequent in pregnancy with twins or triplets.

Atopic eruption of pregnancy (AEP) is a group of a few dermatoses known as atopic eczema, prurigo of pregnancy and pruritic folliculitis. It is associated with elevated levels of the IgE. Atopic eczema is usually seen in flexures-atopic sites. Prurigo of pregnancy is the atopic eruption localized over the limbs and the trunk, but it can develop in patients without atopic history. Pruritic folliculitis of pregnancy is the least common pruritic dermatosis of pregnancy, characterised by self-limiting papular and pustular follicular lesions, which disappear postpartum.

Pemphigoid gestationis (herpes gestationis) is a rare autoimmune bullous disease that usually presents during the second and third trimesters but also after delivery. It manifests with inflammatory rash, severe pruritus and can lead to premature labour or affect the neonate in some cases.

Although skin lesions usually do not affect the foetal outcomes, they significantly lower quality of life. Dermatoses during pregnancy can be underdiagnosed or misdiagnosed which indicates the need to increase the knowledge about skin lesions during pregnancy to provide professional care for patients.



## The skin microbiome in cutaneous T-cell lymphomas

Mikrobiom skóry w pierwotnie skórnych chłoniakach T-komórkowych

Magdalena Łyko

Trustee of the paper: dr hab. n. med. Alina Jankowska-Konsur

Cutaneous T-cell lymphomas (CTCL) are a heterogeneous group of neoplasms characterized by skin-homing T-cell expansion in chronically inflamed skin. The most common types of CTCL are mycosis fungoides (MF) and Sézary Syndrome. The disease progression may be the result of microenvironment disturbance caused by chronic stimulation of the T-cells in the skin triggered by bacterial antigens. *Staphylococcus aureus* colonization and staphylococcal toxins were reported as factors that interfere with immune dysregulation in CTCL. Moreover, antibiotic therapy results in decreased CTCL activity.

In this review, we present the current knowledge on the skin microbiome in CTCL. Based on search of PubMed and EMBASE databases related publications were identified. Existing data is not consistent and difficult to analyse as the methodology of studies differs from each other. Most studies were conducted on small groups and significant differences in bacterial taxa were not observed. An increase of *Staphylococcus aureus* and less bacteria diversity in CTCL lesions than in controls were reported. Moreover, more abundant bacterial species (e.g. *Streptomyces* sp., *Bordetella pertussis*, *Enterobacteriaceae*, *Serratia* sp.) were recognized in non-lesional skin. Low viral and fungal abundances were observed on lesional skin and no differences in abundance between CTCL lesions and controls. Furthermore, bacterial shifts appear to correlate with the disease stage as skin microbiomes differed the most between stage IV patients and controls.

These data suggest that the skin microbiome imbalance may affect the course of CTCL, but to understand the role of the skin microbiome in CTCL further studies are needed.

## Novel therapies in the treatment of atopic dermatitis

Nowoczesne terapie w leczeniu atopowego zapalenia skóry

Izabela Orzolek

Trustee of the paper: dr hab. n. med. Ryszard Galus

Atopic dermatitis is a chronic, inflammatory disease characterized by eczematous lesions in typical locations. It is caused by the complex interplay between genetic predisposition, environmental factors and altered skin barrier. A more precise understanding of the pathogenesis of atopic dermatitis revealed novel therapeutic options.

The purpose is to review emerging systemic therapies, including their mechanisms of action and present a comparison of their efficacy.

Dupilumab, which long-term effectiveness and safety have been proven, is the first biologic available for atopic dermatitis. Other monoclonal antibodies such as nemolizumab, tralokinumab, lebrikizumab and fezakinumab demonstrated statistically significant clinical improvements in phase 2 and 3 trials. Further investigations are needed to evaluate their long-term efficacy. JAK inhibitors such as abrocitinib, baricitinib and upadacitinib showed promising effects in improvement of skin lesions and itch reduction. The beneficial immunomodulatory effect of JAK inhibitors dissipates relatively quickly with cessation of the drug because as opposed to monoclonal antibodies, they have shorter half-lives.

Thus, during SARS-CoV-2 infection, it might be safer to use JAK inhibitors in case of the necessity of a rapid immune response.

There is a need to differentiate subtypes of atopic dermatitis, based on clinical symptoms and inflammatory mediators to choose an optimal therapeutic option for each patient.

## Lichen planus in various locations

### Liszaj płaski w wielu lokalizacjach

Martyna Skweres, Barbara Ponitka

Trustee of the paper: lek. Agata Szykut-Badaczewska

Lichen planus (LP) is an inflammatory skin condition of unknown etiology. It affects around 1% of the population, most commonly middle-aged adults. Three major subtypes of the disease, varying in morphology, location and severity, are distinguished based on the site of involvement – the skin, mucosae or appendages.

Cutaneous LP classically affects the flexor surfaces of the extremities as pruritic, purple, polygonal, planar papules and plaques but in other sites, its clinical appearance can differ. Although the mean duration of the disease is estimated at about 1–2 years, longer and chronically recurrent courses are possible.

Mucosal LP may be concomitant with cutaneous LP, but it can also occur alone. The most commonly affected areas are the oral and genital mucosae, while the less typical include the esophagus and conjunctiva. Oral lichen planus may appear as an atrophic, erosive or reticular form with the characteristic feature of Wickham's striae.

Appendageal LP involves nails, typically the fingernails, or the scalp, where it manifests itself as various forms of alopecia.

The diagnosis of lichen planus is often established clinically. The atypical presentations require histopathologic confirmation. Non-invasive imaging-methods, e.g. dermatoscopy or reflectance confocal microscopy can be supportive tools in the process. LP may also present a diagnostic difficulty when it overlaps with other dermatoses, or when it needs to be differentiated with lichenoid reactions caused by drugs or contact allergens.

In this paper, we review the most common and some of the less typical presentations of LP in the adult Caucasian population.

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## Psoriasis in children – epidemiology, course of the disease and therapeutic options

### Łuszczyca u dzieci – epidemiologia, przebieg choroby i możliwości terapeutyczne

Nissan David Roey

Trustee of the paper: dr n. med. Marta Kurzeja

Psoriasis is a common chronic inflammatory skin disorder that begins in childhood in almost one-third of the cases. In some patients, the onset of symptoms appears before the age of 20 with higher prevalence of females and patients with an affected first-degree family member. The clinical picture differs in children population, psoriatic plaques are mostly thinner and smaller than in adults. Also, localization is different, lesions in course of psoriasis in children tend to develop more often on the face and flexural areas. Children may predict high morbidity, particularly with frequent relapses. The diagnosis of psoriasis is primarily based on the clinical features. Most cases of psoriasis in childhood are mild and can be treated with topical agents such as corticosteroids, calcipotriol and anthralin with consideration on the effected site, age and onset of symptoms. UVB is commonly used in moderate to severe cases that are not well responsive to topical therapy alone. In severe form of plaques or with psoriatic arthritis and pustular psoriasis, systemic therapy is used when phototherapy alone, or with combined topical therapy, were not efficient. Retinoids and methotrexate tend to give a desirable effect in systemic therapy while in short-term crises cyclosporine deliver an adequate management. Biological treatment (such as infliximab or etanercept) show promising results with lower risk and are efficient to treat moderate to severe psoriasis.

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## Keratin biomaterials in skin wound healing and tissue regeneration

Rola biomateriałów na bazie keratyny na proces gojenia ran

Mateusz Rybka, Marcin Ufnal

Trustee of the paper: dr n. med. Marek Konop

Impaired wound healing is a major medical problem. Many scientific groups around the world look for new therapies, regeneration methods, which are based on the use of natural-derived biomaterials that can support wound healing.

In this context keratin biomaterials derived from wool, hair, and bristle have been the subjects of active research in the context of skin wound healing and tissue regeneration. Keratin derivatives, which can be either soluble or insoluble, are utilized as wound dressings since keratins are dynamically up-regulated and needed in skin wound healing. Tissue biocompatibility, biodegradability, mechanical durability, and natural abundance are only a few of the keratin biomaterials' properties, making them excellent wound dressing materials to treat acute and chronic wounds. Many animal studies have confirmed the beneficial effects of keratin dressings on wound healing in healthy and diabetic animals. However, only a few studies described the application of a different form of keratin dressing in the treatment of chronic non-healing wounds or wounds observed in a patient with genetic disorders resulting from mutations in the genes encoding keratin 5 and 14, cause the severe skin blistering disease epidermolysis bullosa (EB).

Regardless of the form of the keratin dressing, these biomaterials are tissue biocompatible, possess hemostatic properties, and stimulate epithelization in keratin-treated wounds. Summarizing, experimental and pre-clinical studies described the beneficial effects of keratin-based wound dressing in the treatment of acute or chronic wounds.

## Neoplasms of the eyelid

Zmiany nowotworowe powiek

Katarzyna Mączka

Trustee of the paper: dr n. med. Magdalena Misiak-Gałązka

Eyelids are composed of histopathologically differentiated tissue layers: skin and subcutaneous tissue with adnexa, striated muscle, tarsus and the palpebral conjunctiva. That creates a possibility for varied types of lesions to occur on a relatively small area of periocular region as tumors can originate independently from each of those layers.

Benign tumors account for 80–85% of eyelid changes with squamous papilloma being the most common one. Seborrheic keratosis, characteristic for elderly people, and epidermal inclusion cysts are frequently found in general population. Periocular region is highly exposed to the sun and ultraviolet radiation what makes it especially susceptible to the development of malignant lesions. Although those tumors are the minority of eyelid neoplasms, they represent 5–10% of all cutaneous malignancies. Skin changes such as basal cell carcinoma, squamous cell carcinoma as well as cutaneous melanoma require taking prompt action. Some rare types of cancer, including microcystic adnexal carcinoma and Merkel cell carcinoma, show tendency to appear on the eyelids more often than in other parts of the body. The upper eyelid is the most typical site of sebaceous carcinoma. Premalignant conditions, which include actinic keratosis, comprise the other group of periocular tumors.

Neoplasms of the eyelid are the common findings in daily medical practice. They are often marginalized or confounded with inflammatory changes while early recognition and management could reduce the risk of malignant transformation and progression. That points to the need for enhancing general knowledge and awareness to address the problem properly and avoid potentially serious consequences.

## Plague: medieval infection in the XXI century

### Dżuma: średniowieczna choroba w XXI wieku

Joanna Gębarowska, Julia Kuszewska, Małgorzata Piejak

Trustee of the paper: lek. Carlo Bienkowski

Plague is an acute bacterial zoonosis caused by *Yersinia pestis*, which was responsible for over 200 million deaths throughout history. Recently, it has been listed as one of the reemerging infectious diseases globally. The pathogen is usually transmitted by fleas that had fed on infected rodents. The most common form of plague – the bubonic plague, manifests with skin lesions at the site of flea bite – from minor, usually inapparent, to eschars, pustules, necrotic lesions or purpura. Other symptoms include lymphadenopathy, fever, malaise, and headache. The second – the pulmonary form is air-borne, may progress to sepsis and if left untreated may lead to death. Administration of proper antibiotic therapy (aminoglycosides), reduces mortality. Africa, Asia, South America, and the West Coast of the USA are plague's endemic areas, where outbreaks may still occur. In 2020, new cases of plague were reported in Urat Middle Banner (Inner Mongolia Autonomous Region, China) and at South Lake Tahoe, (California, USA). Both of these events resulted in immediate implementation of protective and preventive proceedings against the further outbreaks' spread. To sum up, rodents remain the plague's reservoir in endemic areas, therefore local outbreaks are possible in the future. Early antibiotic therapy administration reduces mortality, thus recognition and immediate treatment is crucial in the plague's management.

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## New topical therapies for psoriasis

### Nowe terapie miejscowe w łuszczycy

Aleksandra Biskup

Trustee of the paper: dr n. med. Magdalena Misiak-Gałężka

Psoriasis is a chronic immune-mediated skin disease that causes red, itchy scaly patches, most commonly on extensor surfaces, lower back and scalp. Topical treatment aims to remove plaques inhibit keratinocyte proliferation and reduce inflammation.

Greater understanding of the pathogenesis of psoriasis, has allowed the introduction of new molecules that affect intracellular signaling pathways such as AhR, JAK-STAT and PDE-4: tapinarof, ruxolitinib, roflumilast, respectively.

An aryl hydrocarbon receptor modulator – tapinarof, has demonstrated good results in short and long treatment courses. This medicament emerged to be relatively well tolerated and the mean time to relapse after discontinuation of treatment was approximately 130 days. Roflumilast, a phosphodiesterase type 4 inhibitor, has shown notable lesion and pruritus improvement with no reported side effects, mainly being considered as an option for intertriginous areas. Both tapinarof and roflumilast have completed a phase III study. The clinical investigation of ruxolitinib – the Janus kinase-signal transducer and activator of transcription pathway, has shown a significantly thinner epidermis, decreased parakeratosis, restoration of granular layer and a decreased inflammatory infiltrate. Preclinical investigations on prospective molecules, namely Interleukin-2 inhibitors, amygdalin analogues and microRNAs, have reported a reduction of macro and microscopic features of psoriasis, but further clinical trials are required.

New topical medicaments may prove to be breakthroughs in the treatment of mild-to-moderate psoriasis. Their use would delay or eliminate the necessity of systemic therapy, which causes more side effects than topical treatment. Future prospective studies should evaluate their long-term tolerability and safety in comparison to currently available treatments.

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## Biological treatment of pemphigus – a review

### Leczenie biologiczne pęcherzycy – praca przeglądowa

Alicja Bury, Aleksandra Maciejczyk

Trustee of the paper: lek. Aleksandra Wielgoś

Pemphigus is a group of autoimmune blistering diseases affecting skin and mucosa, caused by the presence of IgG antibodies against desmoglein. First line therapy are steroids and immunomodulatory drugs, however due to common complications of long-term high-dose steroid therapy and cases of unsatisfactory disease control, new drugs are sought. Biologic drugs pose such an alternative. Currently in Poland rituximab is the only biologic drug available

for pemphigus treatment, ofatumumab being used only in clinical trials.

Rituximab, a chimeric anti-CD20 monoclonal antibody, recommended as the first line treatment of moderate to severe pemphigus, allows achieving remission in 90% of patients. Factors increasing the probability of remission are older age, high doses (lymphoma regimen) and early introduction of the drug, while the unfavorable factors are severe primary skin or mucosa involvement measured with Pemphigus Disease Area Index (PDAI), no decline in anti-desmoglein antibody titer after the first dose and BMI score was observed. Despite overall high effectiveness and safety of rituximab some patients develop infusion reactions or stop responding to treatment, which might be caused by human anti-chimeric antibodies (HACA). These patients might benefit from ofatumumab – a human anti-CD20 antibody.

Significant improvement has been reported in literature after the first dose of ofatumumab and total recovery after three doses. Good tolerance of ofatumumab is explained by its human protein structure. Unfortunately, the results of randomized trials about its safety are still lacking. Other anti-CD20 antibodies are also under research. Biologic drugs will probably become a standard pemphigus treatment in the future.

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## Can histological examination be helpful in diagnosing trichotillomania?

### Czy badanie histologiczne może być pomocne w diagnostyce trichotillomanii?

Martyna Cholewik

Trustee of the paper: lek. Agnieszka Kaczorowska

Trichotillomania (TTM) is a mental health disorder, caused by recurrent pulling out of one's hair, resulting in hair loss. Clinically it presents as patchy alopecia and may be misdiagnosed with alopecia areata (AA). These two conditions can coexist. Trichoscopy is widely used in diagnosing hair and scalp disorders. Trichoscopic findings of TTM include broken hairs, black dots, trichoptilosis, V-sign, hook hairs, flame hairs, coiled hairs, tulip hairs, hair powder; and those of AA encompass yellow dots, vellus hairs, black dots, broken hairs and exclamation mark hairs. As some of these features are overlapping, trichoscopic patterns can be misleading.

It is especially difficult to differentiate these conditions, when exclamation mark hairs – a characteristic of AA, are present in TTM. In such cases, a punch biopsy, processed horizontally can be used to verify the diagnosis. Preferably it should be taken within the first 8 weeks of onset. Histologic features of trichotillomania include increased catagen and telogen count, trichomalacia, pigment casts, follicular plugging, decreased number of follicles and sebaceous glands, melanoderma, increased number of fibrous tracts and vellus hairs, superficial dermal inflammation, hemorrhages and hair granulomas. Sometimes fractured hair shafts can be seen with fibrin and erythrocytes, resembling a hamburger. The presence of peribulbar lymphocytic infiltrate and atrophic anagen hairs is characteristic of AA and excludes trichotillomania.

In conclusion, histologic examination can be helpful in establishing diagnosis of trichotillomania, especially when clinical and trichoscopic picture is unclear. It is also useful when patients deny hair pulling or are unwilling to accept diagnosis.

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## Sirolimus treatment in venous malformations

### Zastosowanie sirolimusu w leczeniu malformacji żylnych

Natalia Pacocha

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Venous malformations are a group of congenital anomalies associated with impaired development and structure of venous vessels. The mTor kinase, of which sirolimus is a direct inhibitor, plays an important role in cellular processes such as cell proliferation and angiogenesis. Numerous studies show that sirolimus can be useful in the treatment of venous malformations in which cellular processes are disturbed.

The main indications for the use of sirolimus are usually bleeding, infection, pain, dysfunction, and cosmetic concerns. The median age of patients with venous malformations was 12 years and they received the drug mainly orally in a dose 1.6 mg/m<sup>2</sup>/day in 2 doses. Median follow-up was 24 months, and during this time, a reduction in the size of the lesions was noticed in almost 90% of patients. Sirolimus was also well-tolerated and the major side effects such as oral mucositis, dyslipidemia and leukopenia were rare.



The use of sirolimus has great potential to become the first therapeutic line in the treatment of venous malformations and to replace classic surgical and laser methods of treating lesions with it. More research is needed to determine the appropriate age of treatment initiation as well as duration to reduce the risk of relapse associated with discontinuation of treatment, in order to provide patients with better and more comprehensive care.

## How to make a diagnosis of Sneddon syndrome?

### Jak rozpoznać zespół Sneddona?

Carolyn Szwed

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Sneddon syndrome (SS) is a rare, non-inflammatory medium-vessel vasculopathy which characteristically manifests as livedo racemose or livedo reticularis and recurrent cerebrovascular accidents. It usually affects young women. Due to its slowly progressive course, it is often underdiagnosed. Sporadic forms of the syndrome are often associated with other autoimmune diseases such as antiphospholipid syndrome and systemic lupus erythematosus. Given its diffuse nature, SS may ultimately lead to cardiovascular, renal, and ophthalmological complications. Although the exact etiology of Sneddon syndrome is unknown, familial cases, inherited in an autosomal dominant manner, are believed to be connected to a mutation in the CECR1 gene, which encodes the enzyme adenosine deaminase 2. Extensive testing including blood tests for other autoimmune diseases and coagulopathies, neuroimaging, and histopathological examination of the skin should be performed in order to solidify the final diagnosis. Characteristic histopathological findings on skin biopsy include at least one artery in the deep dermis with a thickened vessel wall combined with recanalization or neovascularization. Diagnosis of this uncommon neurocutaneous disorder can pose a significant challenge given the lack of a single diagnostic test; diagnosis is mainly based on clinical findings.

## Mesenchymal and hematopoietic stem cells as a novel drug for the treatment of skin diseases

### Mezenchymalne i hematopoetyczne komórki macierzyste jako nowatorski lek w leczeniu chorób skóry

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Stem cells possess an ability of constant cell division and subsequent differentiation playing a crucial role in tissue development and renewal, such as wound healing. Moreover, due to regenerative potential of stem cells, e.g. secretion of pro-mitogenic factors (i.e. TGF- $\beta$ ) and immunomodulatory cytokines (i.e. IL-10) they seem to present promising therapeutic strategy for skin disorders.

Main aim of this study was a systematic literature review of clinical trials focused on mesenchymal stem cells (MSC) and hematopoietic stem cells (HSC) in the treatment of skin diseases and assessment of their clinical efficacy.

First ClinicalTrials.gov database was searched using key-words: skin diseases, stem cells, hematopoietic stem cells, HSC, mesenchymal stem cells, MSC. Then the study was enriched with PubMed.gov database results performed for key-words: Clinical Trials, skin disease, mesenchymal stem cells, hematopoietic stem cells.

In this systematic review, 145 studies were chosen from 358 findings of ClinicalTrials.gov (search done on 29.11.2021). PubMed.gov database analysis enriched mentioned study with additional 20 articles.

Results of large-scale randomized placebo-controlled studies are needed to assess unambiguous conclusions, however based on the existing results of early (phase I or II) studies, MSC and HSC might be an effective tool for the treatment of various skin diseases.

## There's a black storm coming... – an up-to-date Fournier's gangrene review

Kiedy nadchodzi czarna burza... – aktualny przegląd literatury dotyczącej zgorzeli Fourniera

Karolina Garbas

Trustee of the paper: dr n. med. Piotr Zapala

Fournier's gangrene (FG) is a fulminant necrotizing skin and soft-tissue infection of the genital and perianal regions. It is caused by both aerobic (*Escherichia coli*, *Staphylococcus aureus*, *Streptococci*) and obligate anaerobic (*Bacteroides fragilis*) bacteria, predominantly derived from the typical anorectal or urogenital microbiome. Despite its low incidence rate of 1.6 cases per 100 000 males per year, its mortality rate has not decreased over the past 25 years and is still estimated at 20%.

Although the condition may affect patients regardless of age and gender, the main predisposing factors include external wounds (especially hemorrhoids, anorectal abscesses), urethral strictures, diabetes mellitus, obesity, immunocompromised states (such as HIV infection, alcoholism) and drugs (sodium-glucose cotransporter-2 (SGLT2) inhibitors, steroids).

FG's onset manifests as acute pain in the scrotum with progressive general malaise and fever. Physical findings may include ulceration and intense erythema of the genital region, followed by purulent exudate, gas accumulation in the tissues and necrosis. Unless treated promptly, sepsis develops, which can eventually lead to life-threatening multi-organ failure.

The diagnosis is made based on scrupulous physical examination and clinical assessment. Nonetheless, imaging and laboratory studies may prove useful for localizing the potential source of infection and patient's risk stratification. Initial management of the disease involves urgent wide removal of necrotic tissues, treatment of hemodynamic disturbances in septic shock and intravenous administration of broad-spectrum antibiotics.

Nevertheless, this aggressive, yet imperfect, approach leaves patients with disfiguring open wounds that eventually require numerous reconstructive surgeries.

## Potential risk of skin cancers after exposure to UV light lamps

Potencjalne ryzyko nowotworów skóry po ekspozycji na promieniowanie w lampach UV

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In recent years, there has been an increased use of UV lamps in the cosmetics industry. The UVA radiation in the lamps is used to dry and strengthen nails during cosmetology procedures. UVA radiation is a mutagen that penetrates into the nail bed, causing many of its characteristic DNA mutations. However, its carcinogenic potential is still controversial.

In this paper, we review the latest scientific articles on UV lamps and their effects on the skin of the hands and nail plate with possible carcinogenic effects. The literature was reviewed, using the PubMed and Google Scholar publicly available scientific base. The works from the years 2014–2021 with the use of the keywords "UV lamp", "skin cancer", "UVA radiation". 17 600 articles were identified, 45 of which were qualified for a given systematic review. Many studies show that up to 13,000 sessions are needed to increase the risk of skin cancer. The results of the available studies show a low risk of developing skin cancer after exposure to UVA radiation. So far, no cases of skin cancer diagnosed on the back of the hand after increased exposure to UVA radiation have been reported.

Tu sum up considering the popularity of UV lamps in cosmetic industry a caution should be taken to reduce potential carcinogenic effect.

## Can artificial intelligence be useful in early identification of skin cancers?

Czy sztuczna inteligencja może być przydatna we wczesnej identyfikacji nowotworów skóry?

Aleksandra Korn, Justyna Jędrzejczyk

Trustee of the paper: lek. Justyna Milewska

Skin cancer with its growing incidence is a significant healthcare burden across the world. Early detection of malignancy is of critical importance to provide effective treatment and improve overall survival. The traditional assessment includes visual inspection and dermoscopy followed by biopsy and histopathologic evaluation. However, these methods have limitations: there are costly, require professional clinicians, and take time. Hence, to aid in the recognition and classification of skin cancer, artificial intelligence tools are being used, using computer algorithms and deep neural networks. Due to its endless processing power and storage capacity, it has the potential to exceed humans. Bearing in mind that initial examination of skin cancers relies on visual perception, computer vision algorithms may be capable of recognizing them based on their morphology. A convolutional neural network (CNN) is one of the machine learning systems that is used for pattern recognition in medical image analysis. Latest studies demonstrated superior or equivalent performance of CNN-based classifiers compared with physicians. However, almost all studies were performed in highly experimental, artificial settings based on single images of the suspicious lesions and lacking clinical context. This may not translate into good clinical performance, and reliable clinical trials for modern CNNs are needed to establish its applicability in daily dermatologic practice. Recent research focuses on human-computer collaboration, making it more probable that AI tools will be used under human guidance, rather than alone.

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## PRAME as an additional tool in the diagnosis of melanocytic lesions

PRAME jako dodatkowe narzędzie w diagnostyce zmian melanocytowych

Anna Maria Janik

Trustee of the paper: dr n. med. Magdalena Misiak-Gałązka

Preferentially Expressed Antigen in Melanoma (PRAME) is a cancer-testis antigen isolated by autologous T cells in melanoma patients. Normal healthy tissues are not known to express PRAME, with the exception of endometrial, gonadal, and adrenal tissues. However, PRAME is detected at higher levels in several malignancies, including melanoma.

The aim of this study was to review the literature to assess the role of PRAME in the diagnosis of melanocytic lesions. A total of 38 articles were reviewed. Extensive multivariate analysis showed that diffuse labeling for PRAME in melanocytic lesions is strongly associated with melanoma and varies by subtype. Although benign lesions such as cutaneous melanocytic nevi, lentigo senile, or sun-damaged skin lesions contain some cells immunoreactive for PRAME, these cells are sparse compared with the dense PRAME-positive cells in melanoma in situ. In addition, PRAME expression is significantly associated with the tumor stage. It helps identify subtle invasion in melanomas that are predominantly in situ. Therefore, it could be useful for assessing marginal spacing in melanoma as well as monitoring the progression of the disease. Interestingly, higher expression of PRAME is also detected in nodal and visceral deposits of melanoma metastases. Based on its expression profile, PRAME is considered a potential target for immunotherapy.

In conclusion, histopathological examination is mandatory to confirm the diagnosis of melanoma. Nevertheless, PRAME immunostaining could be an additional tool to distinguish melanomas from other melanocytic lesions in certain clinical situations. The results should not be interpreted without a clinical picture of the patient.

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## The role of dermoscopy in the assessment of selected cutaneous sarcomas

Zastosowanie dermoskopii w diagnostyce wybranych mięsaków skóry

Anna Maria Janik

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Dermoscopy is a non-invasive method that illustrates abnormal vascular structures. It is used to optimize the diagnosis of a variety of skin lesions and increases the sensitivity for skin cancer detection. Moreover, it helps in differentiating malignant from benign skin conditions.

The aim of the study was to review the literature for the role of dermoscopy in the assessment of selected cutaneous sarcomas such as: pleomorphic dermal sarcoma, angiosarcoma, Kaposi sarcoma, dermatofibrosarcoma protuberans. In total 39 articles were analyzed. The dermatoscopic appearance of pleomorphic dermal sarcomas predominantly shows red and white structureless areas, in addition to thick diameter linear and irregular vessels. While the majority of angiosarcomas are characterized by a homogenous pattern with combinations of different color and white lines at the nodular parts. In turn, Kaposi sarcoma presents a rainbow-like appearance: polychromatic color changes that correlate with the presence of hyaline globules ( $p = 0.001$ ). Moreover, white lines, white clods, dot clods, collarette signs, serpentine vessels, dotted, curved coiled vessels, and scaly surfaces can also be observed. The dermoscopic spectrum of dermatofibrosarcoma protuberans identifies 6 features: delicate pigmented network, arborizing vessels, structureless light brown areas, shiny white streaks, pink background coloration, and structureless hypo- or depigmented areas. Interestingly, they are often associated with a multi-component pattern.

In conclusion, dermoscopic features of cutaneous sarcomas are non-specific, being shared also by other skin cancers. However, dermoscopy assists in deciding if the lesion should be excised or biopsied for histopathological examination.

## The role of the vitamin D receptor in cutaneous melanoma

Rola receptora witaminy D w czerniaku skóry

Monika Stradczuk

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Melanoma is a skin cancer derived from melanocytes. Its aggressiveness and treatment resistance create the need for new therapeutic approaches. The  $1,25(\text{OH})_2\text{D}_3$  known as "Vitamin D" is mainly associated with its role in calcium homeostasis; however, numerous studies proved its efficacy in cancer inhibition. Vitamin D stimulates cells differentiation and apoptosis; inhibits proliferation, angiogenesis, and inflammation. Behind its effect on different cell types stands the activation of Vitamin D Receptors (VDR). After homodimerization or heterodimerization with Retinoid X Receptors (RXR), VDR move to the nucleus and directly influence transcription. Research confirms the impact of the  $1,25(\text{OH})_2\text{D}_3$  pathway on melanoma. Cancer suppression might occur in a cell-autonomous or non-cell-autonomous mechanism. The absence of VDR or RXR in mice results in melanocytic growths after carcinogen treatment. There are also significant changes in VDR and RXR $\alpha$  expression and subcellular distribution in benign nevus and melanoma, with a substantial reduction of nuclear VDR in melanomas. VDR gene polymorphisms, which increase and lower the risk of melanoma incidence, might be distinguished. Furthermore, tumor VDR expression is correlated with better prognosis and greater immune response. The role of Vitamin D serum level was examined, with increased melanoma thickness and worse overall survival in patients with lower  $1,25(\text{OH})_2\text{D}_3$ . Its immunomodulatory effect could also be used to improve immunotherapy results. The Vitamin D pathway has a significant impact on melanoma suppression. Further research in this field, together with an innovative therapy that restores VDR/RXR expression, might improve treatment outcomes and patient survival.

## Juvenile localized scleroderma in children and adolescents

Twardzina ograniczona u dzieci i młodzieży

Aleksandra Partyka

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Juvenile localized scleroderma (morphea) is a disorder characterized by excessive collagen deposition leading to thickening of the dermis and subcutaneous tissues. The etiology of morphea is unknown. It seems certain that autoimmunity plays an important role in the pathogenesis of juvenile localized scleroderma. The environmental factors, infection and trauma have all been associated with juvenile morphea. Morphea is divided into five subtypes: circumscribed, linear, generalized, pansclerotic and mixed. The most frequent subtype in children and adolescents is linear scleroderma. Linear scleroderma is characterized by one or more linear streaks of cutaneous induration that typically involve the extremities and the trunk. It can also involve dermis, subcutaneous tissue, muscle and underlying bone. Almost 20% of patients with juvenile localized scleroderma present extracutaneous manifestations that are more frequent in linear scleroderma and they mostly affect the musculoskeletal system. The differential diagnosis includes hypertrophic scars, lichen sclerosus or vitiligo. The diagnosis is based in most cases on the clinical picture. Non-invasive skin imaging techniques such as reflectance confocal microscopy, high frequency ultrasound, laser doppler flowmetry as well as skin biopsy may also be helpful. Management decisions should be based on the subtype of disease, the site of lesions and on the degree of activity. In mild cases, topical corticosteroids, tacrolimus, calcipotriol and imiquimod can be used. Phototherapy with medium-dose UVA1 has been reported to be effective treatment. In patients with active JLS, particularly in progressive linear scleroderma and generalized or pansclerotic morphea, corticosteroids in association with methotrexate (MTX) are recommended.

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## Alopecia neoplastica – pathomechanism, clinical picture and trichoscopy

Łysienie związane z nowotworem – patomechanizm, obraz kliniczny i trichoskopia

Merella Sankari

Trustee of the paper: dr n. med. Marta Kurzeja

Alopecia neoplastica is characterized by scalp hair loss that is secondary to dermal infiltration of tumor cells originating from a metastatic malignancy. It is typically presented as a nodule, plaque, and/or patch. AN usually spreads from a primary cancer such as in breast, lung, or genitourinary tract. Diagnosis of AN may be challenging, especially when the primary malignancy is not yet diagnosed. Mechanism of AN is still uncertain and seems to have a multifactorial origin. The scalp is a highly vascular area which makes it predisposed to metastasis. Furthermore, direct tumor invasion to the hair follicles may result in follicular destruction leading to alopecia. The release of fibroblast growth factor, IL-4 and IL-6, and inflammatory mediators from neoplastic cells may cause growth of fibrous and connective tissue which leads to disappearance of hair follicles and scarring. Tumor invasion of the hair sheaths may play a role in the development of alopecia due to the evident hair regrowth after effective cancer treatment. On trichoscopy, thick absorbing vessels, milky like areas, and lack of follicular ostia can be visible. The clinical picture depends on the developmental stage of the metastatic lesion. There is still no standard treatment for AN. In some cases, its management is predominantly directed to the primary malignancy. However, sometimes it should be biopsied if it is treatment resistant or shows atypical erythema. In conclusion, atypical features of alopecia such as refractory to treatment or alopecia in patients with underlying malignancies should raise suspicion of alopecia neoplastica.

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## Mucosal pemphigoid – diagnostics and new therapeutic methods

### Pemfigoid błon śluzowych – diagnostyka i nowe opcje terapeutyczne

Merella Sankari

Trustee of the paper: dr n. med. Marta Kurzeja

Mucous membrane pemphigoid (MMP) is a heterogeneous group of chronic, autoimmune subepithelial blistering diseases that predominately affect the mucous membranes and occasionally the skin. Oral and conjunctival mucosa are the most frequently involved sites in patients with MMP. The skin involvement is seen in approximately 25% to 30% of patients. MMP commonly results in scarring of affected areas. Mucous membrane pemphigoid is associated with tissue bound and less commonly circulating autoantibodies against bullous pemphigoid antigen 180 (BPAG2, BP 180), laminin 332 (laminin 5), and integrin  $\beta 2$  subunit. In direct immunofluorescence, 50% to 90% of patients with MMP may have fine linear deposits of IgG, less commonly IgA, IgM, and C3 along the basement membrane zone. DIF of the skin is positive in only 20% to 50% of patients. Antibodies against basement membrane zone may be found only in 20% to 30% of patients using indirect immunofluorescence. Immunochemical techniques including ELISA, immunoblotting, and immunoprecipitation may be used to detect autoantibodies mentioned earlier. Early diagnosis and treatment are essential to reduce the risk of life-threatening complications in MMP. In mild to moderate activity of oral MMP, potent topical corticosteroids may be sufficient to control disease activity. When topical treatment is insufficient, dapsone with prednisone is the treatment of choice. If the treatment is unsatisfactory, azathioprine or mycophenolate mofetil could be added to prednisone. Some current clinical trials showed improvement in oral lesions after the use of etanercept, rituximab, intravenous immunoglobulins, and adrenocorticotrophic hormone analogues.

## Trichoscopy in systemic sclerosis

### Trichoskopia w twardzinie układowej

Przemysław Klasicki

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Trichoscopy has become an indispensable method of assessing the morphology of hair, skin and the scalp due to its noninvasive nature. Trichoscopic examination consists of a comprehensive assessment of hair shafts, hair follicles, cutaneous blood vessels as well as the perifollicular epidermis and allows us to diagnose and differentiate between diseases of the scalp and hair. It is a potential tool in diagnosing systemic connective tissue disorders such as: systemic lupus erythematosus, dermatomyositis and systemic sclerosis. The latter is characterized by fibrosis of the skin, internal organs and joints. Inflammation of the capillaries is always present thus a positive capillaroscopy test is one of the criteria used in the diagnosis of systemic sclerosis. Although trichoscopic abnormalities suggestive of systemic sclerosis have yet to be well defined recent studies have elucidated several features that can be indicative of this disease; the most commonly associated features include spider, arborizing and pinpoint vessels respectively. Additionally, telangiectatic networks as well as the "salt and pepper" sign have gone so far as to be described as pathognomonic to systemic sclerosis. As our knowledge on how to best utilize trichoscopy evolves, this technique may become a useful tool in diagnosing and monitoring patients with systemic sclerosis. This review aims to summarize our current understanding of the use of trichoscopy in systemic sclerosis as well as highlight the differences between the other systemic connective tissue disorders.

## Toxic epidermal necrolysis in children

### Toksyczna nekroliza naskórka u dzieci

Elwira Bukowiecka

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Skin reactions are among the most frequent types of adverse reactions to medications in children, accounting for 36% of any adverse drug reaction. TEN is a rare severe, life-threatening disease, which is

characterized by widespread erythema, necrosis, and bullous detachment of the epidermis and mucous membranes in over 30% of TEN spectrum disorders occur in 7.5 per 100,000 hospitalized children. TEN is associated with high morbidity and mortality, the reported mortality rates at 6 weeks are comprised between 7.5% and 23%. TEN is usually provoked by the administration of a drug, the most frequent anticonvulsants, antibiotics and non-steroidal anti-inflammatory drugs. However, the disorder has other potential etiologies, including infection, autoimmune diseases, malignancy, and vaccinations. TEN are characterized by blistering of the skin and mucous membranes. Prodromal symptoms include fever, general malaise, non-productive cough, stinging eyes, and a sore mouth.

Macules with purpuric, non-blanching centers evolve quickly, into blisters that slough off, leaving large areas of denuded skin and mucosa. Although the diagnosis of TEN is mainly based on clinical signs and symptoms. Skin biopsy showing a typical full epidermal thickness necrosis associated with a scarce dermal inflammatory infiltrate is not always required for diagnosis. For treatment of TEN, corticosteroids are most frequently used, followed by IVIG both as monotherapy and in combination with corticosteroids. None of these mono- or combination therapies appears to affect time to healing or length of hospital stay. Patients who received IVIG and prednisone had better outcomes than those who received supportive only.

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## Nicotinamide for non-melanoma skin cancer chemoprevention – literature review

### Nikotynamid jako chemoprewencja przed nieczerniakowymi nowotworami skóry – przegląd literatury

Natalia Kraciuk, Justyna Milewska

Trustee of the paper: dr n. med. Magdalena Misiak-Gałazka, lek. Justyna Milewska

Nicotinamide (NAM) is an amide form of vitamin B<sub>3</sub> (niacin) responsible for generating NAD<sup>+</sup>, co-enzyme essential for energy production. NAM maintains the right balance in cellular metabolism, enhances DNA repair and reduces UV-induced suppression.

This study is to present the recent findings in use of NAM as an agent for non-melanoma skin cancer (NMSC) chemoprevention. Basal cell carcinoma (BCC) and squamous cell carcinoma (SCC) are the most common NMSC. Exposition to UV radiation remains the main risk factor. Efficacy and safety of NAM in high-risk patients was evaluated in The Oral Nicotinamide to Reduce Actinic Cancer (ONTRAC) study, thus revealing the incidence of NMSC was lower by 23% in the nicotinamide group than in the placebo group. NAM was safe and well tolerated. However, reduction in skin cancer incidence was not maintained in the 6-months follow-up period after discontinuation of treatment. Further studies showed the efficacy of NAM also in transplanted patients, however Chen et al. demonstrated 35% relative difference in the rate of NMSCs ( $p = 0.36$ ) as statistically nonsignificant.

Thus, oral nicotinamide appears to be effective component in the prevention of NMSC only when taken chronically and requires further studies.

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## Prurigo nodularis: new treatment possibilities

### Świerzbiączka guzkowa: nowe możliwości leczenia

Aleksandra Sikora

Trustee of the paper: lek. Małgorzata Maj

Prurigo nodularis (PN) is a chronic pruritic skin disease characterized by multiple nodular skin lesions, causing constant itching, scratching and significantly reducing the quality of life. Nodules are commonly distributed on the extensor surfaces of the arms, legs and trunk. Although the pathogenesis remains unknown, there are reports on the impact of immune and neural dysregulation. Recent evidence suggests an association with various proinflammatory pathways such as the Toll-like-3 receptor, interleukin-4 (IL-4), interleukin-13 (IL-13), interleukin-31 (IL-31) and neuropeptides. Consequently, the skin of PN patients shows a change in nerve density and inflammation. Despite the wide range of available treatment methods, it turns out to be challenging and requires a multifaceted approach using topical and systemic therapies. They often fail or have high toxicity profiles, and therefore new treatment possibilities are being tested. Recent literature reports that dupil-

umab has shown to be effective in reducing pruritus in chronic and refractory PN with no significant side effects. Dupilumab is an IL-4 receptor inhibitor, blocks IL-4 and IL-13 and decreases the level of Th2 biomarkers. Nemolizumab, which is an anti-IL-31 receptor antibody, also reduce itching and the severity of skin lesions. Unfortunately, it is associated with gastrointestinal and musculoskeletal adverse events. Several more targeted therapies are currently in development, such as: Mu and Kappa receptor modulator; neurokinin 1 receptor inhibitor; anti-OSM beta receptor. It appears that targeted therapies may become a viable alternative, capable of obtaining a favorable clinical response. Nonetheless, more studies are needed to determine their effectiveness and safety.

cheilitis is correlated with UV radiation exposure and appears most frequently in outdoor occupations. The UV lips protection is especially significant for Fitzpatrick's skin phototypes I and II and crucial for AC prevention. The purpose of this review was to summarize the etiology, clinical spectrum, risk factors and answer the question of the most efficient treatment of the actinic cheilitis – surgical or non-surgical.

A review was conducted in Pubmed, Embase and Cochrane library and references of included articles from inception to 31 January 2022.

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## Why should we remember about application of the UV-protector cream on the lips? Actinic cheilitis – pathogenesis, the risk of neoplastic transformation and therapeutic opportunities

Dlaczego aplikacja kremu z filtrem UV na czerwień wargową powinna stać się naszą rutyną? *Actinic cheilitis* – patogeneza, ryzyko transformacji nowotworowej i możliwości terapeutyczne

Emilia Babula

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Actinic cheilitis (AC) is a premalignant condition, similar to actinic keratosis, caused by chronic and excessive sunlight exposure. The initial period of the disease is characterized by dryness, scaliness, redness and chapping. Consequently, it can manifest with cracking and erosions, which can turn into swollen red or white patches on the lips. Dermoscopy and histopathology plays an enormous role in the differential diagnosis. AC known also as a 'sailor's lip' or 'solar cheilitis' is a premalignant lesion that especially affects the lower lip and can potentially evolve into squamous cell carcinoma (SCC). The risk of metastasis in SCC developed from actinic cheilitis is 11% compared to 1% for SCC on other body sites. Therefore, it is so essential to make an accurate diagnosis and start appropriate treatment. The occurrence of solar

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## Cutaneous manifestations of inflammatory bowel diseases – challenge for dermatologists and gastroenterologists

Skórne manifestacje nieswoistych zapaleń jelit – wyzwanie dla dermatologów i gastroenterologów

Maciej Lazarek, Klaudia Leśniewska, Monika Rudewicz

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Kornelia Kędziora-Kornatowska

Patients with IBD (inflammatory bowel diseases – mostly Crohn disease and ulcerative colitis) may develop quite frequently extraintestinal symptoms. Some of them are associated with mucocutaneous pathologies and can complicate the management of the underlying disease and decrease the quality of patients' life as well. Numerous dermatological symptoms of IBD have been described such as reactive mucocutaneous manifestations like Sweet's syndrome or pyoderma gangrenosum; pathologies secondary to treatment for example eczematous and psoriasis-like reactions, also conditions associated with nutritional malabsorption like angular cheilitis, phrynoderma, pellagra cannot be forgotten while talking about dermatological symptoms of IBD. There has also been noted that several agents used in biological treatment of IBD may cause mucocutaneous side effects. Treatment of symptoms should be directed both at the cutaneous condition and at the systemic disease, that is why strict cooperation between dermatologist and gastroenterologist is crucial in the management of patients with IBD. Moreover, it is also very important to conduct a dermatological examination of candidates for biological therapies, who may develop skin reactions significantly affecting the patient's condition.

## Measles outbreaks in Poland – is there a threat for pregnant women?

### Epidemie odry w Polsce – czy stanowią zagrożenie dla ciężarnych kobiet?

Carlo Bieńkowski

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Measles is a highly contagious viral disease that occurs worldwide. The infection is characterized by fever, malaise, cough, coryza, and conjunctivitis, followed by exanthem. Following exposure, approximately 90% of susceptible individuals will develop measles. Although measles is usually considered a benign viral disease of childhood, the disease during pregnancy may be severe mainly due to pneumonia. Measles is associated with a risk of miscarriage and prematurity, but congenital anomalies have not been described. If rash occurs near term, the consequences of congenital measles could be severe. The incidence of measles has significantly decreased since the first vaccine against measles was introduced in Poland in 1975. However, in 2018 there was a five times increase in measles incidence in Poland with 335 confirmed cases. Prevention of measles in pregnant women is based on improving immunization coverage, currently insufficient to eradicate virus circulation. The vaccine is contraindicated in pregnant women. Therefore, if the unimmunized (unvaccinated or had not been ill) pregnant women had contact with someone with measles, intravenous immunoglobulin administration is required. Despite obligatory vaccinations against measles in Poland outbreaks may still occur. Therefore, knowledge and education of pregnant women is crucial for measles prevention.

## Comèl-Netherton syndrome

### Zespół Comèla-Nethertona

Zuzanna Dryżałowska

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Comèl-Netherton syndrome is a rare disease that is characterized by a triad consisting of congenital ichthyosis, trichorrhexis invaginata and atopic dermatitis. The incidence is estimated at 1/200,000 births,

but it is thought that it might be higher (~1/50,000). The syndrome is caused by autosomal recessive mutation of serine protease inhibitor gene, Kazal-type 5 (SPINK5), encoding lympho-epithelial Kazal-type 5 related inhibitor (LEKTI).

The clinical manifestations are diffuse xerosis, lichenification, erythema, urticaria, angioedema and erythroderma. The collodion membrane may appear in severe cases. Under the trichoscopy the hair abnormalities are revealed – matchstick, golf tee and bamboo hairs. Other manifestations include diarrhea, intellectual disability and asthma. Netherton syndrome is diagnosed based on the symptoms and confirmed by genetic testing of SPINK5 gene. Other types of testing, such as trichoscopy and a skin biopsy can also be helpful for diagnosis. The basis of NS treatment is skin care, which aims at moisturizing and preventing infections through the use of disinfectants. In exacerbations, topical glucocorticosteroids and calcineurin inhibitors are used. The beneficial effects of local immunomodulators (pimecrolimus and tacrolimus) have also been described. Other therapies include narrowband UVB phototherapy, which may be efficacious but is recommended for short term due to the risk of skin cancer. Biological drugs and gene therapies targeting the pathomechanism of this syndrome are currently under investigation. Dupilumab, omalizumab and ustekinumab are biologic drugs that directly target the pathomechanism. Gene therapies, including the transfer of SPINK5 into keratinocytes that lack LEKTI are future perspective for curing Netherton syndrome.

## Acrodermatitis enteropathica – when this rare disease should be considered?

### Acrodermatitis enteropathica – kiedy pomyśleć o tej jednostce chorobowej?

Agata Konieczka, Anna Skoczek-Wojciechowska

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Acrodermatitis enteropathica is a rare condition with either acquired background or genetic predominance. Acquired variant is usually caused by inadequate intake from dietary sources or intestinal malabsorption. The latter one is an autosomal recessive disease causing zinc deficiency. It is caused by the mutation in SLC39A4 which codes for ZIP4- zinc



transporter protein, disabling zinc uptake and transport and as a consequence leading to its deficiency. The clinical feature consists of classical triad: skin lesions, alopecia and diarrhea. Lesions are typically localized in acral, periorificial or anogenital body parts.

A literature search of the PubMed/MEDLINE databases was performed for published articles on acrodermatitis enteropathica published in English between 2000 and 2022.

Acrodermatitis enteropathica usually has onset during weaning period in breastfed infants or earlier in formula-fed ones. Skin manifestations are erosive, psoriasis-like plaques, symmetrically localized. Apart from classical triad, acrodermatitis enteropathica can manifest in growth retardation, lethargy, blepharitis, conjunctivitis, paronychia and hypogonadism in men. The main differential diagnosis includes psoriasis, atopic dermatitis, pellagra and Netherton syndrome. Diagnosis can be confirmed by low zinc serum level and appropriate response to zinc supplementation treatment.

In conclusion, every pediatrician or dermatologist should be aware of acrodermatitis enteropathica, its differential diagnosis and therapeutic options.

complications of atherosclerosis such as myocardial infarction and stroke.

Available treatment consists primarily of symptom management through medications and physical therapy, which does not improve the life expectancy but positively influences the quality of life. Due to complex pathogenesis and rarity of the disorder effective treatment has not been developed yet. Research is being conducted aiming at development of new therapeutic strategies at different levels of target specificity, such as modification of gene expression and decreasing of progerin production.

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## Psoriasis in children – epidemiology, course of the disease and therapeutic options

Łuszczycyca u dzieci – epidemiologia, przebieg i możliwości terapeutyczne

Katarzyna Klaja

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Psoriasis is a common chronic inflammatory skin disease. It affects up to 2% of children in Europe. The pathogenesis of psoriasis is associated with genetic and environmental factors. Psoriasis in childhood can be triggered by an irritation of skin, streptococcal infection, drugs or emotional stress. The onset of the disease may occur at any age, although it is more common in adolescence. Children present with the same clinical subtypes of psoriasis seen in adults, but the involvement of the face, flexural areas and diaper region is more frequent. In childhood typical psoriasis papules and plaques are often thinner and smaller than in adults and they are usually distributed symmetrically. The diagnosis of psoriasis is commonly based on clinical picture. It could be confirmed by biopsy in children with atypical presentations. Differential diagnosis includes: atopic dermatitis, lichen planus, pityriasis rubra pilaris, candida diaper dermatitis, rashes in the course of viral infections. Topical treatment is considered first-line therapy in mild cases. The most commonly used topical drugs are keratolytics, topical steroids, calcineurin inhibitors and vitamin D analogs. In patients with moderate to severe psoriasis systemic treatment must be considered. Narrow band ultraviolet B-light phototherapy may be used in children population as well as methotrexate, cyclosporine or retinoids. Biologic therapy

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## Progeria – patomechanism, clinical course, therapeutic options

Progeria – patomechanizm, przebieg, możliwości terapeutyczne

Gabriela Piotrowska, Martyna Skweres

Trustee of the paper: lek. Aleksandra Wielgoś

Hutchinson-Gilford progeria syndrome is a rare genetic disorder classified in the group of laminopathies, caused by mutations in the LMNA gene, primarily encoding lamin A and lamin C proteins. Accumulation of the mutant product of the gene, called progerin, disrupts structure and functioning of the cell nucleus. First clinical manifestations appear typically at the age of 2 and include features resembling premature aging, such as growth retardation, subcutaneous tissue loss, alopecia and thin skin with abnormal pigmentation. Other characteristics of the disorder include disproportionately large skull in relation to face and body, bone deformities, dystrophic nails, poor muscle development and cardiovascular pathologies. Average lifespan is approximately 14 years, and the most common cause of death are



such as etanercept, adalimumab and ustekinumab is fundamental in the management of refractory psoriasis. Paediatric psoriasis has been associated with numerous comorbidities such as: obesity, hypertension, hyperlipidemia, diabetes. That is why, early diagnosis and management are essential.

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## Cytokine targeted therapeutics for alopecia areata

### Terapie w łysieniu plackowatym ukierunkowane na cytokiny

Maciej Stępień

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Alopecia areata is a form of non-scarring hair loss characterized by relapsing and difficult to treat course. Etiology of the disease is still incompletely understood. However, multiple immune pathways and an abnormal cytokine profile in patients with alopecia areata have been described. There are numerous therapeutic options for patients with alopecia areata including topical, intralesional or systemic corticosteroids, contact immunotherapy, phototherapy, and non-corticosteroid immunosuppressive agents such as cyclosporine, methotrexate or azathioprine. However, these therapeutic modalities are of limited efficacy and can be associated with adverse effects. Moreover, it has been shown that Janus kinase inhibitors may cause metabolic abnormalities. Thus their use in patients with alopecia areata may be limited. Other cytokine targeted therapeutics have been shown to be effective in alopecia areata such as apremilast (inhibitor of phosphodiesterase 4), ustekinumab (a human immunoglobulin (Ig) G1 kappa monoclonal antibody directed against interleukin 12 and 23), abatacept (a soluble fusion protein, which links the extracellular domain of human cytotoxic T-lymphocyte-associated antigen 4 to the modified Fc portion of human immunoglobulin G1), and dupilumab (is a monoclonal antibody blocking interleukin 4 and interleukin 13). It has been described that TNF inhibitors (such as infliximab, adalimumab and etanercept) are ineffective in alopecia areata. Moreover, the disease exacerbation has been reported after TNF therapy. Alefacept (an immunosuppressive dimeric fusion protein that consists of the extracellular CD2-binding portion of the human leukocyte function antigen-3 linked to the Fc portion of human IgG1) and efalizumab.

## Biologic drugs in the treatment of atopic dermatitis

### Leki biologiczne w leczeniu atopowego zapalenia skóry

Anna Rapiejko

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Atopic dermatitis (AD) is a chronic inflammatory disease with periods of exacerbation and remission. It is one of the most common dermatoses, occurring both in children and adults. It is caused by complex interactions between genetic and environmental factors, epidermal barrier defects, and immune system disturbances. Blocking the action of cytokines relevant to the pathomechanism of AD is the basis of biological treatment using monoclonal antibodies, recommended in moderate to severe forms of the disease. Dupilumab, the first biologic drug registered for use in AD, is a monoclonal antibody against the  $\alpha$  subunit of the receptor for IL-4 (IL-4R $\alpha$ ). The year 2021 brought registration for the treatment of AD in adults of Tralokinumab, an IgG4 monoclonal antibody that binds specifically to IL-13. The effect of these drugs is to block IL-4 and IL-13-mediated signal transduction, thereby inhibiting the Th2-dependent inflammatory process. Other monoclonal antibodies; lebrikizumab, nemolizumab, fezakinumab, and etokimab also showed statistically significant improvement in AD patients in phase 2 and 3 clinical trials. Results of clinical trials with drugs that are inhibitors of JAK Janus kinases also show improvement in skin condition and reduction of pruritus in patients with AD. The drug representing this group, registered for the treatment of AD in Europe, is baricitinib. Research into Bruton's tyrosine kinase inhibitors may also contribute to the development of new treatments for AD. In an effort to optimize and personalize therapy for moderate to severe AD, biologic drugs offer an alternative to conventional systemic treatment.

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## Minoxidil – mechanism of action and factors influencing effectiveness in dermatology

Minoksydyl – mechanizm działania i czynniki wpływające na skuteczność w dermatologii

Wiktorja Auguścik, Karol Bartecki

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Minoxidil has been used in medicine for more than 50 years, originally as an antihypertensive drug, but excessive hair growth was one of the more commonly observed side effects. This phenomenon contributed to many clinical trials and the use of this drug in patients with androgenetic alopecia, initially in the form of a topical solution and foam, and for several years in the oral form. Minoxidil in the active form of minoxidil sulfate has vasodilator properties in the hair follicle, increasing blood flow through the vascular bed, providing more oxygen and nutrients. Drug availability varies individually due to differences in the efficiency of the sulfotransferase activating enzyme. The specific mechanism by which it shortens the telogen phase but lengthens and maintains the anagenic phase remains not fully understood, but it results in increase of the amount of new hair as well as in elongation and thickening already present hairs. Such properties of both oral and topical minoxidil made them possible to use in the treatment of androgenetic alopecia as well as other forms of hair loss. It is also used in hair transplantation and transition processes. The side effects of topical therapy are temporary increased hair loss, hypertrichosis, irritation contact dermatitis. In oral treatment, due to the lower dose than in antihypertensive treatment, side effects are rare, the most common being hirsutism in undesirable areas. In this article, we present the current medical knowledge about effects of minoxidil and its use in dermatology.

## Seborrhoeic dermatitis – the comparison of the efficacy of the treatment methods

Łojotokowe zapalenie skóry – porównanie skuteczności metod terapeutycznych

Aleksandra Antoniak

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Seborrhoeic dermatitis (SD) is a common, chronic and recurrent disease which affects areas of the skin with high concentrations of sebaceous glands. Single or widespread skin changes like exfoliation or erythema accompanied by moderate itching are characteristic of SB. The pathogenesis of the disease is complex and still not completely understood.

Many endogenous (hormonal imbalance, genetic predisposition) and exogenous factors (like obesity, alcohol abuse, HIV infection) can have an impact on the occurrence and the severity of SD. The increased skin colonization by yeast *Malassezia furfur* has been associated with the development of inflammation and exacerbation of SD. The treatment of SB is based on the alleviation of the symptoms and the prevention of the recurrence. It depends on the age of the patient, localisation and severity of the skin changes. Anti-inflammatory, antifungal and keratolytic agents but also coal tar and tea tree oil are used for treatment of this medical condition. Antifungal agents, often administered orally, reduce *Malassezia furfur* colonization leading to prolonged remission period.

In this review we summarize the current medical knowledge on the efficacy of the treatment of seborrhoeic dermatitis.

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## Influence of cigarette smoking on the course of systemic sclerosis

Wpływ palenia papierosów na przebieg twardziny układowej

Alicja Kot

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Systemic sclerosis is a chronic systemic disease characterized by progressive fibrosis of the skin and internal organs. Smoking has a proven nega-

tive effect on health. According to WHO, nearly half of nicotine addicts die of smoking-related causes. A literature review was performed by searching PubMed, EBSCO and Scopus. The terms "systemic sclerosis" and "Ssc" were used combined with the words "smoking", "cigarette", "smoke", "tobacco". Smoking is a risk factor for some autoimmune diseases, but no such correlation with systemic sclerosis has been confirmed. The influence of nicotine on the course of systemic sclerosis is the subject of many studies. It has been investigated that smokers are 3–4× more likely to develop digital vascular complications (they more often required debridement, digital amputation or hospital admission for intravenous vasodilators). The increased risk of microvasculopathy was confirmed by Doppler ultrasonography, where more pathological digital arteries were found in smokers. However, no significant differences in nailfold capillaroscopy or skin thickness were found. Additionally, smokers are at risk of faster progression of lung disease (reduced Tiffeneau index by 6% and DLco by 5% compared to non-smokers). One study showed a 1.53 times higher mortality rate in past/present smokers. Furthermore, it was investigated that anti-topoisomerase I antibody-positive patients were more likely to be never-smokers. In conclusion, cigarette smoking is not associated with increased prevalence of systemic sclerosis. However, it has a negative impact on the course and mortality of the disease. Smoking is also associated with the antibody profile.

Recent researches pointing to the role of microbiota in the disease development. The microbiota a community of commensal and pathogenic microorganisms that live on and within bodies which has been revealed as a key modulator of systemic immunity. Considering autoimmune mechanism of the disease, the gut and skin microbiota arouse scientists.

The aim of our study is to present changes in the microbiota in patients with alopecia areata, which may constitute an important reference point in the implementation of effective therapies. We performed a systematic review of literature available on the PubMed and Google Scholar platform. Our analysis of the relationship between the microbiota and alopecia areata is based on seven interesting studies appeared since 2017.

Genetic tests of bacterial biomarkers enable identify changes in patients microbiome compared to the healthy people. The AA scalp microbiota was significant for decreased Clostridia and Malasseziomycetes, and the gut microbiota was significant for decreased Bacteroidia and increased Bacilli.

The obtained results indicate important role of microbiota in the pathogenesis of AA and require further research because modification of the intestinal and skin microbiota may prove to be an effective therapeutic option.

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## Microbiota – door to novel therapeutic solutions in alopecia areata?

### Mikrobiota – drzwiami do nowych opcji terapeutycznych w łysieniu plackowatym?

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Trustee of the paper: prof. dr hab. n. med. Dorota Krasowska, dr n. med. Agnieszka Gerkowicz

Alopecia areata (AA) is an autoimmune disease characterized by transient, non-scarring hair loss and preservation of the hair follicle. AA affects 2% of population both man and woman. The pathogenesis of alopecia areata is complex and not fully understood, which makes it difficult to treat.

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## When and in which cases should crisaborole be applied?

### Kiedy i u kogo warto zastosować krysaborol?

Justyna Jędrzejczyk, Aleksandra Korn

Trustee of the paper: dr n. med. Leszek Blicharz

Crisaborole is a selective, low-molecular weight topical phosphodiesterase-4 (PDE-4) inhibitor. It functions through increasing intracellular levels of cyclic adenosine monophosphate (cAMP) with resultant activation of protein kinase A and cyclic nucleotide-gated ion channels involved in the regulation of cytokine synthesis and activation of immunocompetent cells. Crisaborole was shown to reduce the dermal expression of interferon- $\gamma$ , tumor necrosis factor- $\alpha$ , interleukin (IL)-2, IL-4, IL-5, IL-13, and IL-17. The efficacy and safety of 2% crisaborol ointment was demonstrated in several randomized clinical trials of atopic dermatitis (AD). It is officially

registered in children over 2 years and adults with mild to moderate AD. Crisaborole should be considered in patients experiencing steroid dependency, severe adverse events of other topical medications, or with lesions located in sensitive areas (i.e. the face, anogenital and flexural regions). Potential off-label use of crisaborole involves psoriasis, lichen simplex chronicus, and vitiligo. Studies indicate that crisaborole may have an even broader therapeutic spectrum and be useful in the treatment of morphea, discoid lupus erythematosus, rosacea, alopecia areata, acne and vulvar lichen planus. Nevertheless, further research is required to establish its long-term efficacy and safety in these entities.

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## An update on the methods used in assessing the skin microcirculation during systemic sclerosis

### Metody oceny mikrokrążenia w skórze u pacjentów z twardziną układową

Anna Bohdziewicz, Katarzyna Karina Pawlik, Jefte Prado, Magdalena Maciejewska

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Damage to the microcirculation is considered to be a fundamental part of systemic sclerosis (SSc) and may be responsible for the various vascular features characteristic of this disease. This review discusses techniques used in the microvascular assessment of systemic sclerosis, focusing both on their use in the early identification of this disease as well as predicting its course.

Nailfold capillaroscopy has been included in the American College of Rheumatology (ACR)/European League Against Rheumatism (EULAR) classification criteria of systemic sclerosis and is routinely used in clinical practice. It is a non-invasive and reproducible technique. It creates a "fast track algorithm" based on the knowledge of clinical experts which allows even inexperienced capillaroscopists to distinguish a "scleroderma pattern" from a "non-scleroderma pattern" seen on capillaroscopic images, that may occur in healthy individuals. Other promising techniques that generally aim to reliably quantify the skin's microcirculatory flow in systemic sclerosis are: Laser Doppler Flowmetry (LDF), Laser Speckle Contrast Analysis (LASCA), Laser Doppler Imaging (LDI), Optical Coherence Tomography Angiography

(OCT-A), Fluorescence Optical Imaging (FOI), Optical Near-Infrared Spectroscopy (NIRS) and <sup>99m</sup>Tc-Perchnetate Hand Perfusion Scintigraphy.

The combination of multiple of these methods may prove useful in enhancing the criteria utilized in the classification of systemic sclerosis and therefore warrants further investigation.

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## Marjolin ulcer – prevention and diagnosis of aggressive skin cancer caused by extensive scar lesions

### Owrzodzenie Marjolina – profilaktyka i diagnostyka agresywnego raka skóry na podłożu rozległych zmian bliznowatych

Jakub Zblewski

Marjolin ulcer is an exceptionally malignant neoplastic transformation, most often resulting from burn lesions. It usually develops many years after the wound has healed, although in the literature we can also find descriptions of acute cases. The most common histological type of Marjolin ulcer is squamous cell carcinoma (SCC). The coexistence of basal cell carcinoma (BCC) and melanoma is also labeled. The lesions are usually located on the limbs, scalp, or neck and they are characterized by a particularly expansive growth, with deep infiltration and extensive loss of healthy tissue. Metastases often arise because of a too-late diagnosis. More and more studies describe an increase in the rate of neoplasm caused by constant irritation of previously healed lesions, ultraviolet radiation, or ineffectively treated infections. This review aims to present the latest reports on possible prevention and determine risk factors. Healing all unstable scars, transplanting the skin for deep burns as quickly as possible, proper hygiene, and regular observation seem to bring exceptionally good results. Particular attention should be pointed to the role of early diagnosis of scars endangered of malignant transformation. Physicians should perform a biopsy of all suspected carcinogenic lesions in patients with extensive skin wound healing history. An important role is also assigned to the evaluation of the sentinel node. Treatment must be radical – with a large loss of healthy tissues and often associated with the need for a skin and muscle flap transplant. The prognosis is poor and the disease is still often fatal.

## Safety and danger considerations of novel treatments for atopic dermatitis in context of primary cutaneous lymphomas

Rozważania o bezpieczeństwie i zagrożeniach dotyczące nowych terapii w atopowym zapaleniu skóry w kontekście chłoniaków pierwotnie skórnych

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prof. dr hab. n. med. Magdalena Trzeciak

The impact of new and emerging therapies on the microenvironment of primary cutaneous lymphomas (PCLs) has been recently raised in the literature. Concomitantly, novel treatments are already used or registered (dupilumab, upadacitinib) and others seem to be added to the armamentarium against atopic dermatitis. Our aim was to review the literature on interleukins 4, 13, 22, and 31, and JAK/STAT pathways in PCLs to elucidate the safety of using biologics (dupilumab, tralokinumab, fezakinumab, nemolizumab) and small molecule inhibitors (upadacitinib, baricitinib, abrocitinib, ruxolitinib, tofacitinib) in the treatment of atopic dermatitis. The current state of knowledge on this topic based on the search of the PubMed database and related references has been summarized. Our analysis suggests that some of the mentioned agents (dupilumab, ruxolitinib) and others may have a direct impact on the progression of cutaneous lymphomas. This issue requires further study and meticulous monitoring of patients receiving these drugs to ensure their safety, especially considering the FDA warning on tofacitinib. In conclusion, in the case of the rapid progression of atopic dermatitis/eczema, especially in patients older than 40 years old, there is a necessity to perform a biopsy followed by a very careful pathological examination.

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## The importance of IL-23 inhibitors in the treatment of psoriasis in patients during the COVID-19 pandemic

Znaczenie inhibitorów IL-23 w leczeniu pacjentów z łuszczycą podczas pandemii COVID-19

Marcelina Kądziała

Trustee of the paper: prof. dr hab. n. med. Aleksandra Lesiak

Immunosuppressive therapy in psoriasis may be continued during COVID-19 pandemic, but it is contraindicated in patients with an active COVID-19 infection. Initiating a treatment in that case is contraindicated. However, more attention is being paid to the role of biological drugs, particularly IL-23 inhibitors. The IL-23 inhibitors approved for psoriasis treatment are as follows: guselkumab, tildrakizumab and risankizumab.

Clinical studies showed that being on IL-23 antagonists is associated with higher risk of upper respiratory tract infection, but not viral infections or interstitial lung diseases. Other studies did not find a statistically significant higher risk of respiratory tract infection in patients taking IL-23. IL-23 inhibitors are supposed to be the safest among biological drugs during the pandemic.

IL-23 is composed of two subunits: p19 and p40, which binds to the IL-23 receptor on CD4 T cells. It activates pro-inflammatory kinases: Janus kinase 2 and tyrosine kinase 2 and leads to Th17 differentiation. Activated cells secrete IL-17A, IL-17F, IL-22, IL-26 and TNF- $\alpha$ . IL-23 inhibitors have an inhibitory effect on the p19 subunit and reduce levels of cytokines. Thus, it may possibly result in a lower cytokine storm during COVID-19 infection. But it has been reported that only a few patients with a mild manifestation of COVID-19 have been treated with IL-23 inhibitors.

According to current knowledge, IL-23 inhibitors may be continued or initiated during the COVID-19 era. However, COVID-19 is new and the exact mechanism of immunobiology is still unknown, hence patients need to be monitored carefully.

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## Therapeutic possibilities of Merkel cell carcinoma

### Rak z komórek Merkla – możliwości terapeutyczne

Jacek Głuski, Klaudia Wojtach

Trustee of the paper: lek. Magdalena Radziszewska

Merkel cell carcinoma is a highly malignant neoplasm of increasing incidence, originating in APUD cells in the basal layer of the skin. Risk factors for developing MCC include old age, immunosuppression, exposure to UV radiation and polyomavirus infection. Studies have shown the advantage of viral etiopathogenesis in 80% of cancer cases but the mechanisms leading to carcinogenesis still remains unidentified. The high mortality rate of the MCC, exceeding three times that of melanoma, is due to a dermatological misjudgment. Surgery and chemotherapy have been the standard of care for MCC for the last decades, while nowadays thanks to new research investigating the pathogenesis of tumor formation and development, new methods of treatment have emerged. For the recent years we have been using immunotherapy with anti-PD-(L)1 monoclonal antibodies: avelumab, pembrolizumab, nivolumab, which nowadays are used as first-line and second-line treatments. New possibilities are also introduced by research on LSD1 inhibitors or recombinant miRNA molecules. Prophylaxis against this cancer in the form of vaccination against polyomavirus is also considered.

## Non-invasive diagnostic methods in melanoma

### Nieinwazyjne metody w diagnostyce czerniaka

Mateusz Ziomek, Anna Ziobro

Trustee of the paper: dr n. med. Marta Kurzeja

Malignant melanoma is a potentially life-threatening neoplasm of melanocytes with a high tendency to metastasize. Patients with metastatic melanoma generally have a poor prognosis, but those with melanoma in early stages can be treated surgically and have a high survival rate. The aim of the study was

to compare different non-invasive skin diagnostic methods which could be used in differential diagnosis of malignant skin neoplasms. The systematic review of the literature was conducted using PubMed online database. The search terms included "melanoma", "non-invasive" and "diagnosis".

Many innovative techniques, based among others on optical methods, have been developed so far. The majority of them (including dermoscopy, optical coherence tomography, reflectance confocal microscopy and multiphoton excited fluorescence imaging) is based on optical methods. Furthermore, artificial intelligence-based techniques are used to analyze optical data from dermoscopic images. Other methods such as high frequency ultrasound, and electrical impedance spectroscopy may serve as additional diagnostic tools. Modern imaging techniques also allow the observation of melanocytic skin lesions for a long time which help to detect the potential moment of malignant transformation. Prognosis and the survival rate in the course of malignant melanoma mostly depends on the time of the diagnosis. The above-mentioned methods allow *in vivo* tissue imaging which helps evaluate the skin with nearly histological resolution, which is very helpful in doubtful cases. However histopathological examination still remains a gold standard verifying suspicious lesions.

## Clascoterone – the mechanism of action and application in dermatology?

### Klaskoteron – mechanizm działania i zastosowanie w dermatologii

Malwina Draim, Sebastian Kupisiak

Trustee of the paper: lek. Katarzyna Pisarz

Clascoterone is a novel topical androgen receptor inhibitor which has been recently approved by U. S. Food and Drug Administration for treatment of acne vulgaris in both male and female patients 12 years of age or older. Clascoterone competes with androgens (especially dihydrotestosterone) for binding with androgen receptors in the sebaceous glands and hair follicles and inhibits the androgen receptor signaling cascades. In this mechanism, clascoterone interferes with the pathogenesis of acne such as sebaceous gland proliferation, excess sebum production, and inflammatory pathways. As clascoterone penetrates

the skin and is rapidly metabolized to cortexolone, systemic exposure to active androgen inhibition is limited. Systemic adverse effects, including reduced libido and feminization in male participants were absent in the long-term safety study and the most frequently reported local skin reactions were erythema, scaling, dryness and pruritus. Clascoterone seems to be a promising topical drug with a novel mechanism of action and is also being investigated for androgenetic alopecia and hidradenitis suppurativa.

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## Skin diseases associated with Alzheimer's disease

### Choroby skóry związane z chorobą Alzheimerera

Oliwia Kozyra

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Alzheimer's disease (AD) is a progressive neurodegenerative disease characterized by the presence of neurofibrillary tangles and amyloid plaques in brain. It is the most common cause of dementia and accounts for up to 70% of all dementia cases. The numerous problems that patients must deal with may include not only cognitive and behavioral disorders but also other medical issues, including dermatological disorders. Some studies have noted the correlation through different mechanisms between Alzheimer's disease and certain skin conditions, such as bullous pemphigoid (BP), psoriasis, hidradenitis suppurativa, cutaneous amyloidosis, nonmelanoma skin cancer (NMSC). The dermatological aspects associated with AD also include iatrogenic changes, as side effects of local treatment and hygiene negligence that results from behavioral disturbances in AD.

Studies demonstrated reduced risk of Alzheimer's disease in NMSC patients on the complex correlation of shared genes and biological pathway of both. Cross-reactive immune response between skin and brain autoantigens BP180 and BP230 is being considered as a possible potential cause of the occurrence of BP in patients with Alzheimer's disease and vice versa. Both genetic factors, including the presence of the APOE gene and the participation of pro-inflammatory cytokines, mainly TNF- $\alpha$ , play an important role in the pathogenesis of psoriasis and Alzheimer's disease, however, the exact mechanism of the connection between these diseases is unclear. The corre-

lation between hidradenitis suppurativa, cutaneous amyloidosis and AD is not well understood. Further studies are needed to precisely elucidate mechanisms of the association between Alzheimer's disease and skin diseases.

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## Protothecosis and chlorellosis – uncommon algal skin infections

### Prototekozy i chlorellozy – rzadkie glonowe infekcje skórne

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Protothecosis is a disease caused by pathogenic opportunist *Prototheca* algae. These organisms were discovered in 1880 and classified as yeasts. Debates that continued for two decades allowed to classify them as chrolophyll-less algae by Chodat in 1913. Protothecosis is rarely diagnosed, has a varied clinical picture and is burdened with high mortality. In more than 50% cases, symptoms include periauricular disorders and systemic infections, especially in people with immune deficiency. 226 diagnosed cases of protothecosis were reported by August 2020 and most frequently the source of the disease was exogenous contact with contaminated water or soil after mechanical injury. Skin infection develops very slowly with various symptoms. The most common presentation of the disease are scabs, blisters and ulcerative, purulent patches. Pathological changes occur both on skin surface and in subcutaneous tissues. In some areas of the body histopathological examination may show full-thickness necrosis. Medications used in the treatment for protothecosis include amphotericin B, imidazole, neomycin and, locally, potassium permanganate, chlorhexidine or picric acid. It has to be added, though, that the therapies have not always been effective. Protothecosis pose a danger to humans and animals due to its resistance to antibiotic treatment, disinfectants and fever that occurs during the illness. So far, two cases of infection with *Chlorellaceae* algae have been reported, the last one in 2014 in Australia. It seems that in both cases negative pressure therapy had a positive effect. Research on algae will allow to prevent and treat infections with uncommon environmental organisms, such as *Chlorella*.

## Chemotherapy-induced alopecia (CIA) – risk factors, trichoscopy and therapeutic possibilities

Łysienie indukowane chemioterapią – czynniki ryzyka, trichoskopia i możliwości terapeutyczne

Alicja Tabian, Lidia Mądrzak

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Chemotherapy-induced alopecia (CIA) is one of the most disturbing side effects of cancer treatment. Up to 8% of patients refuse chemotherapy, because of the fear of hair loss. The frequency of CIA is estimated at about 65% in case of classic chemotherapeutic agents and less than 15% in case of molecularly targeted therapies. High doses, intravenous drug administration, and polytherapy have been associated with a faster and more severe course of CIA. Hair loss is caused by a sudden inhibition of mitotic activity in the hair follicle and usually begins within the first 3 weeks of chemotherapy administration (anagen effluvium). The scalp is most frequently affected. CIA usually starts in the crown and sides of the head above the ears. Near complete hair loss occurs after 2–3 months. Hair regrowth is usually observed in 1–3 months after the treatment. In about 60% of patients, these hairs may have a different color, thickness, waviness and texture. Permanent alopecia can occur in about 20% of patients and the greatest risk is associated with docetaxel or paclitaxel. Trichoscopic features of CIA include black dots, broken hairs, exclamation mark hairs, flame hairs, Pohl-Pinkus constrictions, circle hairs, pigtail hairs, vellus-like hairs. The most effective method of preventing hair loss is scalp cooling system, which causes vasoconstriction and reduces the inflow of chemotherapeutic agents into the hair follicles. It is effective in about 50–80% of patients. Other therapies such as bimatoprost, minoxidil and spironolactone require further studies to assess their effectiveness and oncological safety.

## Gut microbial metabolites – impact on dermatological conditions

Wpływ metabolitów mikrobioty jelitowej na choroby dermatologiczne

Albert Stec, Magdalena Maciejewska

Trustee of the paper: lek. Magdalena Maciejewska

The role of intestinal microbiota brings novel insight into pathogenesis of various diseases. In many dermatological conditions (e.g. psoriasis, atopic dermatitis, systemic lupus erythematosus) so-called dysbiosis has been found. This state is characterized by abnormal microbial composition which differs from healthy controls. One of the ways in which microbiota affects homeostasis is through microbiota-derived molecules called metabolites. There are four general groups of metabolites – short chained fatty acids (SCFA), tryptophan metabolites, amine derivatives including trimethylamine N-oxide (TMAO) and modified bile acids. Every group has its own uptake and specific receptors through which metabolites can exert their systemic function. The main goal of this review is to provide up to date knowledge about impact of gut microbiota metabolites on health from the perspective of dermatological conditions. Special attention is paid to show the effect of microbial metabolites on immune system including changes in immune cells profile and cytokine disbalance which are characteristic for certain dermatological conditions, especially psoriasis and atopic dermatitis. It has been found that concentrations of short chained fatty acids observed in psoriasis, atopic dermatitis and systemic lupus erythematosus differs from healthy controls. TMAO could be observed in excessive amount in psoriasis and hidradenitis suppurativa, whereas tryptophan metabolites could attenuate inflammation in patients with atopic dermatitis, arthritis and psoriasis.

## Effectiveness of Janus kinase inhibitors in vitiligo

### Skuteczność inhibitorów JAK w bielactwie

Karolina Kazimierska

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Vitiligo is an autoimmune disease of the skin characterized by progressive loss of functional melanocytes, leading to cutaneous depigmentation and formation of white macules and patches on the skin. Vitiligo has a remarkable impact on the quality of life and can be emotionally devastating. Recent studies have shown that activation of CD8+ T lymphocytes through the JAK-STAT intracellular signaling pathway is crucial in the pathogenesis of this dermatosis. Interferon-gamma, produced by CD8+ T lymphocytes population, induces melanogenesis inhibition and melanocyte apoptosis. At present, there is no effective and long-term treatment for repigmentation of vitiligo lesions; therefore, a search for a new targeted therapy is needed. Recent reports have demonstrated the benefits of JAK1/3 inhibitors in the treatment of vitiligo skin lesions, such as tofacitinib and ruxolitinib, but evidence for their efficacy is heterogeneous. These drugs may provide an alternative for patients with vitiligo refractory to current therapies, particularly in non-segmental vitiligo located on the face. Recent case reports also highlight the combination of JAK inhibitors and NB-UVB. Current research aims to achieve the most effective treatment while minimizing the risk of side effects by using topical JAK inhibitors. The purpose of this study is to critically review the efficacy of JAK inhibitors in the repigmentation of vitiligo skin lesions.

## Comparison of drugs' effectiveness in treating nail psoriasis

### Łuszczyca paznokci – porównanie skuteczności leków

Gabriela Piotrowska, Barbara Ponitka

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Nail psoriasis is a chronic inflammatory disease affecting 80–90% of patients with skin psoriasis and more than 80% of patients with psoriatic arthritis.

Clinical manifestations differ depending on the involved nail structure. When psoriasis is present in the nail matrix, the most common symptoms are pitting, leuconychia, red spots in lunula and nail plate crumbling. In the case of nail bed involvement, onycholysis, subungual hyperkeratosis, splinter hemorrhages and oil-drop patches can be observed. Treatment methods of nail psoriasis are determined by its severity and localization within the nail apparatus. Therapeutic options include topical, intralesional, and systemic treatments. Topical therapy is suggested in mild lesions. Glucocorticosteroids and vitamin D analogs (administered separately or in combination) are used as a first line treatment. Other options include calcineurin inhibitors and tazarotene. The effectiveness of such methods is limited due to common relapses and a long time needed for clinically relevant results to occur. More severe symptoms require systemic treatment: either traditional (acitretin, cyclosporine, methotrexate) or biologic (TNF- $\alpha$  inhibitors, ustekinumab, secukinumab, ixekizumab). Such an approach may lead to a higher risk of systemic side effects in the long term. As far as intralesional drugs (glucocorticosteroids) are concerned, they are administered by injection and prove to be highly effective in the case of the involved matrix, yet less effective when it comes to the nail bed. Their use is limited by potential side effects such as short-term paresthesia and focal pain.

## Stress related to the COVID-19 pandemic as a factor exacerbating psoriasis

### Stres związany z pandemią COVID-19 jako czynnik zaostrzający łuszczycę

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Psoriasis is a chronic inflammatory skin disease that causes physical, emotional and social disabilities that have a significant impact on patients; quality of life. Numerous studies have emphasized a correlation between stressful events as a trigger of the onset and exacerbation of psoriasis, while exacerbations by themselves often lead to psychological discomfort. The COVID-19 pandemic and related restrictions



have caused uncertainty and difficulties in the daily lives of patients with psoriasis- from difficult access to drugs, limited dermatological consultation to even complete discontinuation of biological therapies or psoralen plus ultraviolet A (PUVA) radiation.

Moreover, it is known that psoriasis patients are more susceptible to infections due to immune dysregulation and the use of immunosuppressive drugs, which may have intensified the fear of COVID-19 infection. Before COVID-19, observational data indicated a greater risk of hospitalization related to respiratory tract infections among patients with psoriasis than in the general population. Fear of a higher risk of COVID-19 infection even forced some patients to discontinue therapy without consulting a physician.

The results of the studies suggest the need for further research. A review of the literature on this topic will allow us to design an original study in the future, whether the COVID-19 pandemic had an impact on increasing the level of perceived stress and whether it is related to the exacerbation of psoriasis lesions.

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## Gingival and hard palate melanomas – a rare tumors of the mucous membranes

### Czerniak dziąseł i podniebienia twardego – przegląd przypadków rzadkiego nowotworu błon śluzowych

Bartosz Kozakiewicz

Mucosal melanoma – a rare malignant neoplasm originating from melanocytes in mucosa of the gastrointestinal tract and the genitourinary system. It is the third most common location of melanoma, besides skin and eye. Mucosal melanoma accounts for only 1.4% of all cases. It usually appears between the 4<sup>th</sup> and the 6<sup>th</sup> decade of life.

Descriptions of the occurrence of primary melanoma of the gums and the hard palate are certainly worth attention. They should be differentiated from nodular changes resulting from chronic irritation by dentures. The lesion may be singular or multiple. Metastatic cancers are also possible. An additional complication is a relatively common problem with surgical margin removal of the melanoma. The immediate presence of important anatomical structures is difficult to perform a radical resection. Exposure to UV radiation, smoking, and chewing tobacco may

increase the disease's risk. An association with human papillomavirus and herpes virus infection has not been demonstrated.

The physicians should pay special attention to any lesions with a dark blue color, asymmetrical edges, and elevations. They have to exclude the presence of any primary changes. The ABCDE checklist for skin melanomas may be helpful in the examination.

The work aims to review the latest case reports of melanoma in the gums and hard palate available in the literature. Attention was paid to the possibility of early diagnosis and modern methods of treatment.

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## Treatment of pyoderma gangrenosum

### Leczenie piodermii zgorzelinowej

Izabela Staniszewska

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Pyoderma gangrenosum (PG) is a rapidly progressive neutrophilic dermatosis characterized by the occurrence of inflammatory papules, pustules, vesicles or painful ulcerations. It might be associated with autoimmune diseases, most often inflammatory bowel diseases, rheumatoid arthritis and hematological diseases. There is no unified treatment regimen for PG due to the lack of a sufficient number of accurate, unified studies in large patient populations. Treatment is chronic and requires individual adjustment of therapy according to the patient's clinical condition and concomitant diseases. In early stages of PG, topical treatment with glucocorticoids (GCS) or calcineurin inhibitors is preferable. The primary suggested systemic treatment is GCS and cyclosporin. Azathioprine, mycophenolate mofetil, and methotrexate are usually added in case of absence of effects of GCS as monotherapy.

Other systemic drugs of the second line of treatment are: human tumor necrosis factor  $\alpha$  antagonists (TNF- $\alpha$ ), dapsone and some antibiotics (doxycycline, minocycline). Intravenous immunoglobulins (IVIG) and alkylating agents (cyclophosphamide and chlorambucil) are considered in cases which are resistant to standard therapy. Proper wound care is essential throughout the entire treatment period. Surgical intervention in the treatment of PG is controversial. Due to the strong pain associated with skin lesions, analgesic treatment is crucial. It elevates the quality of life of patients with PG.



## New treatments for psoriasis?

### Nowe metody w leczeniu łuszczycy?

Ewelina Flegiel

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As is known, psoriasis is a chronic, inflammatory disease that manifests itself in characteristic skin lesions. It affects about 2 to 3% of the Polish population, most often in the 40–60 age group. It is an autoimmune and genetic disease (including HLA-Cw6 gene polymorphism). The primary bloom is a red-brown lump, clearly demarcated from the surrounding area, and a keratinized scale appears on its surface.

Patients with a small affected area of the body can only be treated locally, but those with a more severe course require combination therapy. Despite the large number of effective drugs, many patients no longer respond properly to proposed treatment over time. Therefore, new alternative routes are being sought to help better control this disease.

Scientists look to the protein TWEAK, which is a weak inducer of apoptosis similar to tumor necrosis factor (TNF). The research shows that TWEAK induces apoptosis of keratinocytes through the involvement of its receptor 14 induced by the fibroblast growth factor (Fn14). The first attempts with TWEAK inhibitors in murine models and human cells give high hopes as their effects are very similar in their effects to inhibition of TNF or IL-17 activity. There are no clinical trials in humans yet, however, TWEAK inhibitors may prove to be an effective therapy in both psoriasis and other skin diseases (including atopic dermatitis), because this protein is involved in various skin inflammations.

mycosis fungoides is the most common diagnosis. The similarity of skin lesions to other dermatoses such as atopic dermatitis allergic dermatitis extends the time of proper diagnosis.

Nowadays dermoscopy plays a crucial role in initial diagnosis for many skin diseases and there are also few papers regarding dermoscopic features in mycosis fungoides. However the most characteristic changes are observed in scalp skin, mostly because of folliculotropism, that's why scalp should be the preferred skin area for dermoscopic examination (trichoscopy).

The aim of this study was to summarize the current knowledge on the possibility of trichoscopy use in early diagnosis of cutaneous lymphomas. A systematic review of the literature was conducted using the PubMed online database. Search term was "trichoscopy", "cutaneous lymphoma", "T-cell lymphoma", "mycosis fungoides", "Sezary syndrome". 6 papers were included into the study.

The trichoscopic pattern of cutaneous T-cell lymphoma in scalp localization consists of: pili torti, broken-dystrophic hairs, single hairs, circle hairs, 8-shaped hairs, yellow and black dots, dotted and dilated vessels, spermatozoa-like pattern vessels, glomerular or linear vessels arranges perifollicularly, large reddish areas, thick white interfollicular bands, follicular spicules-like scaling.

In conclusion, trichoscopy may be an useful tool for early identification of cutaneous lymphomas. The limitation of the development of trichoscopic diagnostic criteria for cutaneous lymphomas is small number of studies and further investigations are needed.

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## Trichoscopy as a method of early identification of cutaneous lymphomas

### Trichoskopia jako metoda wczesnej identyfikacji chłoniaków skóry

Anna Ziobro, Mateusz Ziomek

Trustee of the paper: dr hab. n. med. Adriana Rakowska

The skin is the second most common site of extranodal lymphomas. Primary cutaneous lymphomas are the most frequent of T-cell origin, of which the

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## Cutaneous manifestations of Kawasaki disease

### Manifestacje skórne w chorobie Kawasaki

Radosław Wojnowski

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Kawasaki disease, known also as a mucocutaneous lymph node syndrome affects approximately 10–20 children per 100 000. It presents with high body temperature, difficult to manage with antipyretics and continuing for at least 5 days. Among diagnostic criteria those of crucial role are dermatological symptoms such as measles-like urticaria, lesions on

lips and mucosal membranes, desquamation of the fingers. Early diagnosis and starting appropriate treatment give ability to lower the risk of coronary damage which poses a most severe and most serious complication.

An analysis was made of 77 children hospitalized and treated because of Kawasaki disease in the years 1991–2020 in Department of Pediatric Cardiology of University Clinical Center in Gdańsk. The time of onset and spectrum of symptoms observed in the analyzed group were assessed.

Popularization of knowledge about Kawasaki disease may lead to proper diagnosis at an early stage of illness, which might contribute to reduction of the most dangerous complications.

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## Efficacy of dietary supplements in telogen effluvium – a systematic review

### Skuteczność suplementów diety w łysieniu telogenowym – przegląd systematyczny

Natalia Wierzejska, Katarzyna Ulaszewska

Trustee of the paper: dr. n. med. Marta Sar-Pomian

There are conflicting data on the significance of dietary supplementation in telogen effluvium. A systematic literature review using MeSH terms (“telogen effluvium” OR “telogen hair loss”) AND (“dietary supplements” OR “supplements”) was performed in three medical databases: PubMed, ScienceDirect, Medline. A total of 40 articles have been included into the review.

Biotin supplementation was effective in 12 of 580 (2.1%) patients with telogen effluvium and biotin deficiency. In a total of 55 patients with telogen effluvium and vitamin B<sub>12</sub> deficiency decreased, or absent hair shedding was observed after vitamin B<sub>12</sub> supplementation. Zinc supplementation was effective in 5 patients with zinc deficiency-associated telogen effluvium. Not statistically significant improvement of telogen effluvium was observed in 13 of 27 (48%) after oral supplementation with plant extracts (*Boswellia Serrata*, *Curcuma Longa* and *Vitis Vinifera*). One non-controlled study showed significant improvement in hair density under trichoscopy after the use of two different sets of vitamins and minerals after 90 and 180 days.

Studies on the efficacy of dietary supplements in telogen hair loss are of poor quality. There is no strong evidence for dietary supplementation in patients with telogen effluvium without mineral or vitamin deficiencies to date. Randomized controlled trials are needed to elucidate the role of dietary supplementation in telogen effluvium.

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## Xeroderma pigmentosum – pathogenesis, clinical presentation and alleviation of symptoms

### *Xeroderma pigmentosum* – patogeneza, obraz kliniczny choroby i łagodzenie jej objawów

Iga Serafin, Kacper Rogóż, Agnieszka Przygórzewska, Paweł Woźnicki

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Xeroderma pigmentosum (dry pigmented skin, XP) is a rare autosomal recessive disease that makes it difficult to repair cells' DNA defects caused by UV radiation. This mutation can cause a change in the structure of 8 proteins. The most crucial proteins are XPA-XPG, which are involved in the repair of DNA by nucleotide excision (NER). Characteristic symptoms in patients with XP are skin changes in the form of freckles, lentiginous pigmentation, blistering and burning after short exposure to the sun, photophobia, eye diseases, as well as neurological problems, occurring in approximately 25–30% of patients. A common complication of dry pigmented skin is skin cancer (especially squamous cell carcinoma, basal cell carcinoma, and malignant melanoma), so it is important to regularly check skin lesions in patients with XP. The first case was described by the dermatologist Moritz Kaposi in 1874, and the disease is now reported in 1 per million people in the United States, 2.3 per million in Western Europe, and 45 per million in Japan. Currently, there is no dedicated treatment for patients with Xeroderma pigmentosum, however, early diagnosis of the disease contributes to a rapid introduction of some measures protecting from the UV radiation and can alleviate the occurring symptoms in a significant way.

## Primary hyperhidrosis – causes and therapeutic management

### Nadpotliwość pierwotna – przyczyny i postępowanie terapeutyczne

Aleksandra Słowikowska

Trustee of the paper: dr n. med. Olga Warszawik-Hendzel

Hyperhidrosis is a condition resulting in sweating beyond what is physiologically necessary. It is caused by autonomic nervous system dysfunction depends on overactivity of eccrine glands. Hyperhidrosis affects about 16% of Polish population. Hyperhidrosis is classified as primary focal hyperhidrosis and secondary generalized hyperhidrosis. Secondary hyperhidrosis needs to be excluded before diagnosis primary hyperhidrosis.

In this review we focus on causes of hyperhidrosis and its management. Literature search using PubMed was performed.

In the vast majority primary hyperhidrosis is idiopathic with family history in some cases. Increase in temperature, emotional factors and physical activity are exacerbating factors. Primary hyperhidrosis is usually localized, limited to the axillae, palms, soles and craniofacial area. Secondary hyperhidrosis is generated by various underlying diseases or medications. Several treatment methods, including topical therapy (antiperspirants, anticholinergics) and systemic therapy (anticholinergics,  $\alpha$ -adrenergic agonists, calcium channel blockers) are available for the treatment of hyperhidrosis. Due to adverse effects of the above, intradermal botulinum toxin injections, surgical and laser sweat glands resection are becoming more popular. Microwave thermolysis is also used for the treatment of hyperhidrosis.

Individualized approach of management is necessary for optimal outcome of treatment.

to prolong the remission of relapsing inflammatory dermatoses. The mechanism of action is primarily based on the reduction of subclinical inflammatory infiltrate in the skin. Proactive approach was initially introduced in atopic dermatitis (AD), and is being investigated in other dermatological conditions.

Atopic dermatitis (AD) is a chronic, inflammatory skin disorder characterized by Th2 skewing in the acute disease phase. Nonlesional skin of AD patients is affected by subclinical inflammation which may be aggravated by a wide range of exacerbating factors and trigger disease relapse. This process may be prevented by proactive treatment with topical calcineurin inhibitors (TCIs) and/or topical corticosteroids (TCs) which was demonstrated to be safe and effective for up to 1 year in randomized clinical trials.

The proactive approach is currently under investigation in other dermatoses. Maintenance treatment with topical combination of betamethasone dipropionate and calcipotriene was shown to prolong the remission of psoriasis. Several studies showed that intermittent application of topical tacrolimus may be effective in preventing the relapses of seborrheic dermatitis. Literature data also suggest that maintenance treatment with TCIs and TCs reduces recurrence rates in patients with anogenital lichen sclerosus, while a modified proactive approach in the form of sequential treatment with sinacathechins, imiquimod and podophyllotoxin was demonstrated to prevent the recurrence of anogenital warts.

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## Xerosis as a toxicity of novel anti-cancer therapies – pathophysiology and management

### Suchość skóry jako powikłanie nowoczesnych terapii przeciwnowotworowych – patofizjologia i leczenie

Paweł Głuszak, Katarzyna Winkel, Marta Dzieciatkowska, Michał Grzejda, Aleksandra Ignasiak, Julia Kurzyca

Trustee of the paper: Igor Piotrowski

In the systemic treatment of modern oncology, novel anti-cancer therapies, such as EGFR inhibitors or immunotherapy, are becoming increasingly important. Toxicity profile of these therapies are different from that of standard chemotherapy and has become an emerging challenge for clinicians and pa-

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## Proactive therapy in dermatology

### Terapia proaktywna w dermatologii

Justyna Pięta, Agnieszka Pawlik

Trustee of the paper: dr n. med. Leszek Blicharz

Proactive treatment is based on a long-term intermittent application of topical anti-inflammatory therapy to the skin areas previously affected by lesions

tients. Among the most common adverse events are skin toxicities, including xerosis, that might be debilitating and have a negative effect on patients' quality of life. Untreated or treated ineffectively can necessitate dose modification or treatment withdrawal.

Xerosis is a symptom stemming from a skin barrier dysfunction caused by a variety of different mechanisms, which differ depending on the therapy. Patients indicate xerosis as an unexpected symptom that significantly decreases their quality of life. Even so, it is a complication often neglected in clinical practice. Prevention and treatment of xerosis includes avoiding irritating factors (soaps, perfumed products, high temperature), bathing in lukewarm water and applying emollients. Early treatment prevents inflammation and bacterial infections, which may lead to antibiotic and steroid therapy.

Due to the commonly available methods of prophylaxis and treatment, and a large negative impact on patients' lives, it is important for clinicians to know about the prevalence of this complication among cancer patients.

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## Cardiovascular disorders in alopecia areata

### Zaburzenia sercowo-naczyniowe współistniejące z łysieniem plackowatym

Natalia Pacocha

Trustee of the paper: dr n. med. Anna Waśkiel-Burnat

Alopecia areata is a chronic, autoimmune disease characterized by non-scarring hair loss. Alopecia areata has been considered as an organ-specific disorder limited to the hair follicles. However, recent studies have indicated that the disease is associated with a systemic inflammation, with an increased risk of metabolic and cardiovascular comorbidities. Indeed, in patients with alopecia areata, an increased level of numerous cardiovascular markers such as E193 selectin, matrix metalloproteinases, lectin-type oxidized LDL 194 receptor 1, myeloperoxidase, fatty acid binding protein, P195 selectin, oncostatin M, proteinase-3, peptidoglycan recognition protein 1, and caspase 3 in comparison with healthy controls was described. In addition, an increased level of cardiac troponin I in patients with alopecia areata compared to healthy subjects was detected. A positive correlation between the concentration of chemokine ligand 7

and the severity of alopecia areata was also found. A higher risk of coronary artery disease or atrial fibrillation in patients with alopecia areata was described. However, majority of previously published analyses showed no significant risk or even a reduced risk of myocardial infarction in patients with alopecia areata compared to the control group. Data on the incidence of stroke are also inconsistent. In conclusion, on the basis of the limited data available alopecia areata may be associated with an increased risk of development cardiovascular diseases. Further studies are necessary to evaluate atherosclerosis and cardiovascular risk in patients with alopecia areata.

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## Skin lesions of fingers and toes in COVID-19 patients

### Zmiany w obrębie palców rąk i stóp u pacjentów z COVID-19

Alicja Nowik, Julia Mazurek

Trustee of the paper: lek. Małgorzata Maj

Due to COVID-19 pandemic numerous cases of skin manifestations have been noticed, including pseudo-chilblains, vesicular and maculopapular eruptions, urticarial lesions, necrosis, and livedo. One of the most common phenomena are chilblain-like lesions of the extremities, also called COVID toes. It occurred mainly in young asymptomatic patients or those with only mild systemic symptoms. There are considerable cutaneous and systemic mechanisms suggesting a connection between COVID-19 and pseudo-chilblains. It is believed that an excessive immune response linked to the overproduction of type I interferons may lead to skin manifestations. Moreover, SARS-CoV-2 infects cells and enters blood vessels using ACE-2, which is extensively expressed in the skin, causing cutaneous symptoms.

The objective of this study is to compile and assess the clinical, histopathological, immunohistochemical aspects, pathomechanism and differential diagnosis of pernio-like lesions described in the literature.

This paper is based on analysing existing publications regarding chilblain-like skin lesions.

Since RT-PCR (reverse transcription polymerase chain reaction) and serological tests were negative in majority of pseudo-chilblains cases, there is no confirmed proof that these skin lesions are caused by COVID-19. However, histological similarities and



the presence of viral spike protein found in several biopsies indicate pathogenetic role for SARS-CoV-2 in chilblains. Therefore, we can assume that pathways activated during SARS-CoV-2 infection result in developing skin manifestations.

sion and prevent new lesions, is based on the use of antiplatelet drugs e.g. aspirin or clopidogrel. In severe cases heparin may be considered. Eculizumab (anti-C5 antibody) and treprostinil (prostacyclin derivative) can also give good therapeutic response.

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## Degos disease – pathomechanism, diagnosis and therapeutic options

### Choroba Degosa – patomechanizm, diagnostyka i możliwości terapeutyczne

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Degos disease (DD) also known as malignant atrophic papulosis is a systemic chronic inflammatory vascular disease of unknown etiology and pathophysiology with characteristic skin involvement. It is suspected that endothelial cell dysfunction, coagulopathy and lymphocytic inflammation of the blood vessel wall may play a role in the pathogenesis of Degos disease. This is a rare entity and so far 200 cases of the disease are described. The aim of the presentation is to make you more familiar with Degos disease manifestations and findings.

DD most commonly involves the skin, gastrointestinal tract, central nervous syndrome, and other organs such as, e.g., myocardium, pericardium, lungs and pleura. Cases are sporadic, although autosomal dominant inheritance does occur. Increased expression of MxA (type I interferon-inducible protein) and complement component C5b-9 has been demonstrated in some cells, especially endothelium. There are two subtypes of the disease, i) a mild cutaneous and ii) severe systemic form. Skin lesions are small pink papules with porcelain atrophic centrum and erythematous border. The diagnosis is based on pathognomonic skin lesions confirmed by histopathological examination, which detects wedged necrosis, arterial occlusion, infarcts, mononuclear inflammatory cell infiltrates, and mucin deposits. The differential diagnosis includes primary antiphospholipid syndrome, antiphospholipid syndrome secondary to systemic lupus or other connective tissue diseases. The prognosis is good for the cutaneous form of DD, whereas the severe form of DD can result in fatal complications – bowel perforation, severe bleeding, or cerebral thrombosis. For this reason, annual follow-up is recommended. Treatment, which may cause regres-

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## Differential diagnosis of vitiligo

### Diagnostyka różnicowa bielactwa nabytego

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Vitiligo is a pigmentary disorder characterized by the presence of numerous discolored patches without atrophy or inflammation, surrounded by hyperpigmentation, most often on the face, backs of the hands, armpits and nipples. The disease affects 1% of the world population. In 30%, it is a familial autoimmune disorder, which is supported by a variety of autoantibodies and associated diseases such as Hashimoto's thyroiditis, type 1 diabetes, Graves' disease, Addison's disease, pernicious anemia, systemic lupus erythematosus, scleroderma, psoriasis, rheumatoid arthritis or alopecia areata.

The aim of this paper is to present skin diseases that mimic vitiligo and to discuss the relationship between vitiligo and other diseases.

The theoretical basis of this study is the available literature written by specialists in dermatology and venereology from leading dermatological centers in the world.

The differential diagnosis of vitiligo is a diagnostic challenge that must take into account systemic autoimmune diseases as well as other diseases that present with hypomelanosis, such as Sutton nevus, piebaldism, nevus depigmentosus, scleroderma, idiopathic guttate hypomelanosis, syphilitic vitiligo, pityriasis alba, pityriasis versicolor, hypomelanosis of Ito, oculocutaneous albinism, mycosis fungoides with hypopigmentation, Waardenburg syndrome, Chediak-Higashi syndrome, ash-leaf spots in tuberous sclerosis, lichen sclerosus, chemically induced vitiligo, and others.

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## Mucocutaneous manifestations of pediatric inflammatory multisystem syndrome (PIMS)

### Manifestacje skórno-śluzówkowe PIMS

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The consequence of SARS-CoV-2 infection in children is pediatric inflammatory multisystem syndrome (PIMS). Although mucocutaneous symptoms are not very common among children with COVID-19, they are one of the main clinical symptoms in children with PIMS and, depending on the course, are present in 50-70% of patients.

The most common mucocutaneous manifestations in children with PIMS include conjunctivitis (27-93%), changes in the oral mucosa (25-87%), eruptions (47-81%), erythema and swelling of the hands or feet (27-68%). Skin lesions are usually more common in younger children and their incidence decreases with age. 87% of children aged 0-5 years had mucocutaneous changes, while in the age group of 13-20 years this percentage was 61.5%.

We can see a connection between the severity of PIMS and skin lesions. Patients with PIMS with rash were less frequently admitted to the pediatric intensive care unit, had lower levels of C-reactive protein and troponin compared to patients with PIMS without rash. In addition, localized skin lesions appear to be associated with more severe inflammation. In the case of suspicion of PIMS due to the characteristic clinical picture, including changes on the mucous membranes and skin, the differential diagnosis is important, because skin lesions are not specific and are similar to those observed, e.g. in Kawasaki disease.

In conclusion, mucocutaneous manifestations may present as early symptoms in patients with PIMS and be an important clue during the COVID-19 pandemic in the diagnosis of this syndrome in children with fever.

## Upadacitinib and dupilumab – comparison of efficacy and safety profile in the treatment of atopic dermatitis

### Upadacytynib i dupilumab – porównanie skuteczności i bezpieczeństwa w leczeniu atopowego zapalenia skóry

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Atopic dermatitis (AD) is one of the most common allergic skin diseases. In the pathomechanism a key role is played by the differentiation of CD4 lymphocytes towards the Th2 lineage. Additionally, the pathways of pro-inflammatory cytokines are activated: IL-4, IL-5, IL-13.

The prevalence of AD is 20% in paediatrics and 7% in adults. As many as 25% of the cases is moderate or severe. Chronic and recurrent nature of skin lesions, persistent itching and dry skin limit the patients' daily functioning.

The treatment includes phototherapy, glucocorticosteroids and calcineurin inhibitors. However, it is not always effective and limited by numerous side effects. Therefore, new drugs have been introduced with a high effectiveness and a good safety profile.

Based on a literature review, we will compare the safety and efficacy of upadacitinib and dupilumab in the treatment of atopic dermatitis.

In the comparative study with the ending point of the achievement of EASI75 (75% improvement of eczema area and severity index) at week 16: 71% of those treated with upadacitinib and 61.1% with dupilumab achieved EASI75.

In the safety profile, more common among those treated with upadacitinib were: infections, acne, herpes zoster and laboratory deviations. Adverse effects of dupilumab included conjunctivitis and injection site reactions. Serious side effects of upadacitinib accounted for 4.9% and of dupilumab for 2.4%.

Therefore, upadacitinib seems to be more effective in the treatment of moderate-severe AD.