

ACADEMIC MEDICAL JOURNAL
Vol.6 (2026):(Suppl 3) Acad Med J

**ABSTRACTS FROM THE
VIII CONGRESS OF DERMATOVENEREOLOGISTS
OF MACEDONIA
WITH INTERNATIONAL PARTICIPATION**

17-20 September 2026
Ohrid, North Macedonia



MACEDONIAN DERMATOVENEREOLOGIC SOCIETY

Dear Colleagues,

We are pleased to present the abstracts from the VIII Congress of Dermatovenereologists of Macedonia with International Participation, held in Ohrid, North Macedonia, from 17 to 20 September 2026. The abstracts are arranged according to the scientific program and include the School of Vascular Ultrasound of the Peripheral Veins in Clinical Practice, the main scientific sessions, the Forum for Young Dermatovenereologists, and e-poster presentations.

Editorial formatting has been standardized for consistency. Scientific content, author names, affiliations, and keywords are reproduced from the submitted abstracts; information not supplied in the source abstract has not been added by inference.

ORGANIZING COMMITTEE

President

Andrej Petrov

Organizing Secretaries

Ivana Dohcheva Karajovanov
Natasa Teovska Mitrevska
Vesna Pljakoska

Scientific Board

Aleksandar Anchevski
Ivana Dohcheva Karajovanov
Vesna Brishkoska Boshkovski
Hristina Breshkovska
Irena Dimitrovska
Suzana Nikolovska
Silvija Duma
Agron Starova
Juliya Mitrova Telenta
Mirela Vasileva
Andzelka Ilieva
Vesna Trajkova

Members

Arben Emurlai
Julijana Maksimovic
Radmila Onceva
Anita Najdova
Maja Dimova
Viktor Simeonov
Ivana Tuseva



SCHOOL OF VASCULAR ULTRASOUND OF THE PERIPHERAL VEINS IN CLINICAL PRACTICE- ABSTRACTS

ANATOMY OF THE PERIPHERAL VEINS OF THE LOWER EXTREMITIES

Pero Penjushkov¹

¹ "Medika Penjushkovi Interna" Vatasha-Kavadarci

Introduction: Color Doppler ultrasound contributes to thorough visualization of the anatomy of the human peripheral venous system.

Discussion: For examination of peripheral veins of the lower extremities, the patient is placed in a specific position: supine, lateral, prone, sitting, or standing. At the beginning, optimization of the ultrasound machine is performed, along with accurate interpretation of Doppler spectra and flow in relation to the baseline. This includes adjusting the PRF (pulse repetition frequency), analyzing color Doppler data regarding blood flow direction, and compressing the veins with the probe. Flow augmentation is performed by manual compression and the Valsalva maneuver. Normal veins have a thin, smooth wall, allowing visualization of the valves, a hypoechoic lumen, and are easily compressible with the probe, unlike the adjacent artery. Their flow is centripetal, directed toward the heart. The inferior vena cava and pelvic veins are examined using a 3-5 MHz convex probe. The CFV (common femoral vein), SFV (superficial femoral vein), PFV (profunda femoris vein), and proximal GSV (great saphenous vein) are examined with a 5-10 MHz linear probe; in obese or edematous legs, a 3-5 MHz convex probe is used. The popliteal veins are investigated using a 5-10 MHz linear probe. The veins of the leg are divided into superficial and deep systems, connected by communicating (perforating) veins, and present anatomical variations.

Conclusion: A sound knowledge of peripheral venous anatomy allows accurate functional evaluation and diagnosis of venous disorders during color Doppler ultrasound examination.

Keywords: peripheral venous anatomy, color Doppler ultrasound

IMPORTANCE OF ULTRASOUND ANATOMY IN SAPHENOUS VENOUS SYSTEM'S DIAGNOSTIC APPROACH

Aleksandar Manolev¹

¹ PHO Polyclinic Center MANOLEVI, Department of Internal Medicine, Skopje, Republic of Macedonia

Ultrasound detailed examination of saphenous veins with their tributaries, fascial architecture and adipose tissue are cornerstone in ultrasound diagnostic approach. The saphenous veins are shown to occupy a distinct fascial compartment, bounded by the muscle fascia and the embryologically distinct membranous layer (saphenous fascia), together forming the ultrasound identifiable "saphenous eye." This compartment varies with tissue composition, appearing minimal in lean legs and enlarged in lipoedematous legs. An understanding of the course of the great saphenous vein - from its origin at the dorsal foot vein loop, through the medial malleolus and tibia, to its termination at the saphenofemoral junction via the saphenous hiatus - is particularly important when great saphenous vein duplication occurs, as the duplicated veins are confined to vessels coursing within the fascial compartment. Two principal named tributaries are identified: the anterior and posterior arch veins in the lower leg, with their thigh-level counterparts, the anterior and posterior accessory saphenous veins. These vessels maintain fairly consistent anatomical positions despite minor branching variation. The course of both, anterior and posterior arch vein should be examined as most pathological perforating veins in the calf are located along them. Small saphenous vein course should be examined from its origin to the termination in popliteal vein. Discussion must lead to pointing of these terms in order to provide ultrasound accuracy.

Keywords: ultrasound of superficial veins, vascular ultrasound of veins, ultrasound anatomy of veins, ultrasound of saphenous veins

DEEP AND SUPERFICIAL VENOUS THROMBOSIS: AN ULTRASOUND-GUIDED DIAGNOSTIC APPROACH

Ivana Dohcheva Karajovanov^{1,2}

¹ Department of Dermatovenereology, Faculty of Medicine, Ss. Cyril and Methodius
University in Skopje, Republic of North Macedonia

² University Clinic for Dermatology, Skopje, Republic of North Macedonia

Venous duplex ultrasound is the first-line imaging modality for the diagnosis of suspected lower-extremity venous thrombosis, providing real-time assessment of venous anatomy, compressibility, and hemodynamics. Its diagnostic accuracy depends not only on image acquisition, but also on a systematic examination strategy, correct interpretation of sonographic findings, and recognition of anatomical and technical pitfalls. This lecture presents a structured ultrasound-guided approach to deep and superficial venous thrombosis, with emphasis on examination technique, diagnostic criteria, anatomical extent, and clinically relevant patterns of thrombus propagation. Compression ultrasonography forms the diagnostic cornerstone, with failure of complete venous compressibility representing the principal sonographic criterion for acute deep vein thrombosis. B-mode imaging, color Doppler, and spectral Doppler provide complementary information regarding thrombus morphology, venous patency, flow characteristics, and proximal obstruction. The examination strategy is discussed in the context of proximal and whole-leg ultrasound protocols, including systematic assessment of the common femoral, femoral, popliteal, and calf venous segments. Particular attention is given to anatomical nomenclature, technically challenging segments, and findings that may result in false-positive or false-negative interpretation. Superficial venous thrombosis is addressed as part of the venous thromboembolic spectrum, with emphasis on thrombus location and extent, involvement of the great and small saphenous veins, proximity to the saphenofemoral and saphenopopliteal junctions, and systematic exclusion of concomitant deep vein thrombosis. By integrating venous anatomy, standardized scanning technique, and evidence-based image interpretation, duplex ultrasound provides a reproducible diagnostic framework for defining thrombus distribution, recognizing clinically significant extension, and supporting timely management decisions.

Keywords: ultrasonography, Doppler, duplex, venous thrombosis, deep vein thrombosis, thrombophlebitis, lower extremity, diagnosis

CLINICAL AND ULTRASOUND EVALUATION OF CHRONIC VENOUS DISEASE

Hristina Breshkovska^{1,2}

¹ Department of Dermatovenereology, Faculty of Medicine, Ss. Cyril and Methodius University in Skopje, Republic of N. Macedonia

² University Clinic for Dermatology, Skopje, Republic of N. Macedonia

Chronic venous disease encompasses a spectrum of morphological and functional abnormalities of the venous system of the lower extremities, with clinical manifestations ranging from telangiectasias and varicose veins to edema, trophic skin changes, and venous ulcers. Clinical assessment, complemented by duplex ultrasonography, enables the identification of venous reflux and obstruction and the determination of their anatomical extent. A systematic approach to the clinical and ultrasound evaluation of chronic venous disease is based on appropriate examination technique, accurate identification of venous anatomy, and hemodynamic mapping. Clinical assessment includes the evaluation of characteristic symptoms and signs and their classification according to the CEAP system. Duplex ultrasonography enables an integrated assessment of the superficial, deep, and perforating venous systems, providing information on venous anatomy, patency, and hemodynamics. Appropriate provocative maneuvers allow pathological venous reflux to be identified and quantified and its anatomical extent to be assessed. Systematic ultrasound mapping enables determination of the source, pathway, and extent of reflux, as well as assessment of the saphenous junctions, saphenous trunks, deep venous system, and clinically relevant perforating veins. Integration of clinical assessment with a standardized duplex ultrasound technique provides a basis for accurate diagnosis, individualized treatment planning, and follow-up of treatment outcomes.

Keywords: chronic venous disease, duplex ultrasonography, venous reflux, venous insufficiency, CEAP

COMPLEX MEDICAL DERMATOLOGY - PART 1

ARTEFICIAL INTELLIGENCE IN DERMATOLOGY: ACHIEVEMENTS, OPPORTUNITIES, CHALLENGES, AND THE ROAD AHEAD

*Dejan Dinevski*¹

¹ Faculty of Medicine, University of Maribor, Taborska 8, 2000 Maribor, SLOVENIA

Introduction: Artificial intelligence (AI) has become increasingly important in contemporary medicine, with dermatology representing one of the specialties most suitable for its application. The visual, pattern-based, longitudinal, and digital nature of dermatological practice provides a strong foundation for AI-supported diagnostics, monitoring, educational, and research tools.

Materials and Methods: The development of AI, from rule-based expert systems and machine learning to deep learning, generative AI, and multimodal foundation models, is reviewed. Clinical photography, dermoscopy, total-body imaging, histopathology, molecular diagnostics, patient-reported information, and electronic health records may be integrated within multimodal AI systems.

Results: Recent advances include AI-assisted skin cancer recognition, dermoscopic image analysis, lesion segmentation, longitudinal monitoring, teledermatology triage, clinical documentation, medical education, and research support. Integration of imaging, clinical history, comorbidities, genetic risk, histopathology, environmental exposure, treatment response, and patient preferences may support risk stratification, individualized monitoring, therapy selection, and prediction of treatment response. Important challenges include algorithmic bias, limited generalizability across skin types and clinical settings, privacy, accountability, regulatory compliance, and medico-legal responsibility. Generative AI may produce inaccurate information or fabricated references. Explainable AI, meaningful uncertainty estimates, and clearly defined limits of applicability are essential.

Conclusion: The future will be shaped by increasingly multimodal, interactive, and agentic AI systems. Safe, validated, ethical, and explainable AI should amplify dermatological expertise while preserving clinical judgment, empathy, and responsibility.

Keywords: artificial intelligence, dermoscopy, clinical photography, total-body imaging, electronic health records

PITFALLS IN THE DIAGNOSIS OF THE DEEP AND SUPERFICIAL VEIN THROMBOSIS

Aleksandar Manolev¹, Ivana Dohcheva Karajovanov²

¹ PHO Polyclinic Center MANOLEVI, Department of Internal Medicine, Skopje, R. Macedonia,

² University Clinic for Dermatology, Skopje, Republic of North Macedonia

Introduction: Vascular ultrasound is the first-line imaging technique for diagnosis of deep and superficial vein thrombosis. There can be many pitfalls that even an experienced examiner can face with.

Materials and methods: The pitfalls can be associated with: the technique of the compressive ultrasound performance; anatomical anomalies of the venous system; pathological changes that can overlap with deep and superficial vein thrombosis; compression effect of tumor masses and carcinoma-associated thrombosis; conditions that lead to increased D-dimers without presence of thrombosis. Pitfalls associated with the technique of ultrasound assessment may occur in obese patients, patients with lymphedema and other conditions. These pitfalls often appear when the compressive ultrasound is performed partially on the middle and distal part of the vein course, avoiding complete vascular ultrasound evaluation. Pitfalls associated with the anatomical anomalies of the venous system include the most common anatomical variations are the duplicates of the femoral and popliteal vein, and less often the duplicates of the tibial and peroneal veins.

Conclusion: Pitfalls associated with other pathological changes that can be misinterpreted as deep and superficial vein thrombosis: the most common is a Baker's cyst mistaken for the popliteal vein; and less commonly, an aneurism of the popliteal artery. Pitfalls associated with conditions that lead to increased D-dimers without presence of deep or superficial vein thrombosis: cellulitis, phlegmona, erysipelas; surgery; Becker's cyst rupture and others.

Keywords: pitfalls in deep vein thrombosis, superficial vein thrombosis, ultrasound pitfalls

SILENT BARRIERS IN HEALING CHRONIC WOUNDS

Julija Mitrova Telenta^{1,2}, Ivana Dohcheva Karajovanov^{1,2}, Silvija Duma^{1,2}, Hristina Breshkovska^{1,2}, Elena Mircheska Arsovska^{1,2}, Maja Dimova^{1,2}, Viktor Simeonovski^{1,2}, Rebeka Vukovska^{1,2}, Biljana Ahtarova³

¹ Department of Dermatovenereology, Faculty of Medicine, Ss. Cyril and Methodius University in Skopje, Republic of North Macedonia

² University Clinic for Dermatology, Skopje, Republic of North Macedonia

³ Primaderma - Private dermatovenereology practice, Strumica, Republic of North Macedonia

Introduction: Biofilm formation is a key hidden barrier to chronic wound healing, contributing to persistent infection and poor treatment outcomes. Identifying wound microbiota and their biofilm-forming ability is essential for improving management.

Materials and methods: The study included 100 patients with chronic leg wounds, examined and treated at the University Clinic for Dermatology and the Institute of Microbiology, Faculty of Medicine in Skopje. Clinical data were collected through comprehensive dermatological examinations, microbiological wound swabs, and microbiological analyses using the tissue culture plate (TCP) method for biofilm detection. Antibiotic susceptibility of the isolates was determined using agar diffusion techniques and automated methods.

Results: The Results obtained revealed the presence of microorganisms in 67% of patients' wounds, with the most frequently isolated species being *Staphylococcus aureus* (35.82%), *Pseudomonas aeruginosa* (19.4%), *Enterobacter spp.* (19.4%), and *Escherichia coli* (17.91%). Biofilm formation potential was demonstrated in 71.9% of the isolates from chronic wounds. Wound healing was significantly more frequent in patients without microbial isolates ($p < 0.0001$). Wound healing was also significantly associated with infection by *Staphylococcus aureus* ($p = 0.0004$) and was notably influenced by the degree of biofilm production in the isolates ($p = 0.0006$). Resistance to penicillins, cephalosporins, and carbapenems was high (80%-100%). No significant difference in antimicrobial susceptibility was observed between isolates with and without biofilm-forming potential.

Conclusion: Biofilm formation contributes significantly to chronic wound persistence and treatment failure. Integrating microbiological identification, biofilm assessment, and susceptibility testing may improve targeted therapy and clinical outcomes.

Keywords: chronic wounds, microbiology, biofilm, antimicrobial susceptibility

FAT GRAFTING AS A REGENERATIVE TOLL- CLINICAL CASES AND OUTCOMES

*Margarita Peneva¹, Andrijana Gjorgjeska¹ Elizabeta Zhogovska¹,
Hristina Breshkovska², Tamara Gjorgjevska¹, Donjeta Berisha¹*

¹ University Clinic for Plastic and Reconstructive Surgery, Ss. Cyril and Methodius University in Skopje, North Macedonia

² University Clinic for Dermatology, Ss. Cyril and Methodius University in Skopje, North Macedonia

Introduction: Regenerative surgery aims to repair, replace and regenerate tissues or organs with the goal of restoring function loss due to congenital defects, disease, trauma or aging. Adipose tissue is commonly used as a regenerative inductor. Recently, both surgeons and scientists have expanded the use of adipose tissue and its' stem cells components for broader clinical application.

Aim: The aim of this report was to present our results in the treatment of different surgical entities with the process of lipoinduction.

Methods: When applied to the recipient bed, transferred adipose tissue secretes chemical mediators and exosomes. These factors alter the metabolic behavior of the recipient tissue and stimulate its regeneration. In our practice, lipoinduction has been applied in a variety of indications including scars (burn scars, posttraumatic scars), chronic wounds (trophic, venous ulcers), nerve palsy and muscle regeneration.

Results: Our results in these diverse clinical applications, particularly in the treatment of chronic wounds and various types of scars, have shown promising outcomes together with improved tissue quality and healing.

Conclusion: Properly harvested and manipulated adipose tissue demonstrates excellent regenerative potential and clinical results. Further follow-up and studies are necessary.

Keywords: lipoinduction, fat grafting, regenerative surgery, chronic wounds, scars

BETWEEN THE MIND AND THE SKIN: HOW TO RECOGNIZE A PSYCHOGENIC COMPONENT IN A DERMATOLOGICAL PATIENT

Vasileva Mirela¹

¹ Faculty of Medical Sciences, Goce Delchev University, Shtip Clinical Hospital in Shtip, North Macedonia

Introduction: Psychodermatology encompasses the interaction between the psyche and the skin through neuro-immune-endocrine mechanisms. A significant proportion of dermatological patients have a psychogenic component that remains undiagnosed.

Objective: To present a practical approach to recognizing a psychogenic component in dermatological patients.

Methods: Review of contemporary literature and clinical experience with analysis of psychophysiological dermatoses and primary psychodermatological disorders.

Results: Key indicators of a psychogenic component are: inconsistency between symptoms and clinical findings, atypical distribution of lesions, therapeutic resistance, presence of psychosocial triggers and characteristic patient behavior.

Conclusion: Screening tools (HADS, PHQ-9, GAD-7) and an appropriate communication approach improve diagnostics. Recognition of the psychogenic component allows for an integrated therapeutic approach and better clinical outcomes.

Keywords: psychodermatology, skin, psychosocial trigger

VITAMIN D RECEPTOR POLYMORPHISM IN PATIENTS WITH PSORIASIS VULGARIS AND THE EFFECT OF PHOTOTHERAPY ON SERUM CONCENTRATIONS OF VITAMIN D, TNF- α , IL-17, AND IL-23

Mircheska Arsovska E.^{1,2}, Nikolovska S.^{1,2}, Breshovska H.^{1,2}, Duma S.^{1,2}, Dohcheva Karajovanov I.^{1,2}, Vukovska R.^{1,2}, Simeonovski V.^{1,2}, Dimova M.^{1,2}, Telenta J.^{1,2}, Najdova A.^{1,2}

¹ Department of Dermatovenereology, Faculty of Medicine, Ss. Cyril and Methodius University in Skopje, Republic of North Macedonia

² University Clinic for Dermatology, Skopje, Republic of North Macedonia

Introduction: Psoriasis is a chronic, immune-mediated inflammatory skin disease characterized by a strong genetic predisposition and complex autoimmune pathogenesis. It is one of the most common dermatological disorders and may significantly affect patients' quality of life. Narrowband ultraviolet B (NB-UVB) phototherapy is an effective first-line therapeutic option for patients with generalized plaque psoriasis and is considered cost-effective, safe, and well tolerated.

Materials and Methods: The immunomodulatory role of vitamin D and the potential influence of vitamin D receptor (VDR) gene polymorphisms in psoriasis are considered. Serum concentrations of major pro-inflammatory cytokines, including tumor necrosis factor-alpha, interleukin-17, and interleukin-23, may be determined using the enzyme-linked immunosorbent assay (ELISA) technique. Analysis of VDR gene polymorphisms may be combined with assessment of vitamin D and inflammatory cytokine levels.

Results: Low serum vitamin D concentrations, together with VDR gene polymorphisms, have been associated with increased susceptibility to several immune-mediated diseases, including psoriasis. VDR gene polymorphisms may also influence disease severity and individual therapeutic response. Assessment of inflammatory cytokines may provide a rapid, simple, and reliable approach for evaluating disease activity, monitoring therapeutic efficacy, and assessing the biological effects of treatment.

Conclusion: Analysis of VDR gene polymorphisms, combined with assessment of vitamin D and inflammatory cytokine levels, may contribute to identifying individuals at increased risk of psoriasis and provide additional value in predicting disease course and treatment response.

Keywords: psoriasis, receptors, polymorphism, ultraviolet therapy, interleukin-17, interleukin-23

CHARACTERISTICS OF BASAL CELL CARCINOMA EVALUATED BY HIGH-FREQUENCY ULTRASOUND AND THEIR CORRELATION WITH HISTOLOGICAL SUBTYPE

Maja Dimova¹, Viktor Simeonovski¹, Julija Mitrova Telenta¹, Ivana Dohcheva Karajovanov¹, Elena Mircheska Arsovska¹, Silvija Duma¹, Hristina Breshkovska¹, Anita Najdova¹, Rebeka Vukovska¹

¹ University Clinic for Dermatology, Faculty of Medicine, Ss. Cyril and Methodius University in Skopje, Macedonia

Introduction: Basal cell carcinoma (BCC) is the most common cutaneous malignancy and includes multiple histological subtypes with distinct growth patterns and recurrence risks. Although histopathology remains the diagnostic gold standard, high-frequency ultrasound (HFUS) is increasingly investigated as a complementary non-invasive tool for preoperative tumor assessment.

Materials and Methods: We reviewed the potential role of HFUS in the preoperative evaluation of BCC, focusing on sonographic characteristics and their relationship with histopathological architecture. Relevant parameters included tumor shape, margins, depth, echogenicity, internal hyperechoic foci, and vascularization.

Results: BCC typically appears on HFUS as a hypoechoic lesion located within the dermis. Variations in sonographic morphology may reflect differences in histological subtype and growth pattern. Irregular morphology, poorly defined margins, greater tumor depth, and specific vascular patterns may suggest a more infiltrative or higher-risk tumor, whereas well-defined and regular lesions are more frequently associated with less aggressive subtypes. The presence and distribution of hyperechoic foci may provide additional diagnostic information. Assessment of tumor dimensions and depth may also support preoperative planning.

Conclusion: HFUS may provide valuable complementary information for the characterization of BCC before treatment. Understanding the relationship between sonographic morphology and histopathological architecture could improve identification of potentially aggressive growth patterns and assist in treatment planning. Further studies are needed to establish standardized ultrasound criteria for BCC subtype classification and risk stratification.

Keywords: basal cell carcinoma, high-frequency ultrasound, HFUS, histopathology, histological subtype, risk stratification

ALLERGIC AND IMMUNOLOGIC DISEASES

MANAGING URTICARIAL VASCULITIS: A CLINICAL DECISION-MAKING ALGORITHM BASED ON EXPERT CONSENSUS

Vesna Trajkova^{1,2}, Natasha Teovska Mitrevska^{3,4}, Ivana Tusheva¹, Irena Dimitrovska¹, Ana Ristevska Dimitrovska¹, Hristina Breshkovska⁵

¹ City General Hospital “8th September”, Skopje, North Macedonia, Department of Dermatology

² Higher Medical School, University St. Kliment Ohridski Bitola, North Macedonia

³ Re-Medika Hospital, Skopje, North Macedonia, Dermatology Department

⁴ International Balkan University, Skopje North Macedonia

⁵ Department of Dermatovenereology, Faculty of Medicine, Skopje, North Macedonia

Introduction: Urticarial vasculitis (UV) is a rare small-vessel leukocytoclastic vasculitis characterized by urticarial lesions lasting more than 24 hours and, in some cases, systemic involvement. Its clinical overlap with chronic spontaneous urticaria (CSU) may complicate diagnosis and management. This paper summarizes key clinical, laboratory, histopathological, and therapeutic considerations for UV.

Materials and Methods: A consensus-based clinical approach was developed through integration of published evidence regarding clinical presentation, classification, differential diagnosis, diagnostic evaluation, disease activity, and treatment. Particular emphasis was placed on distinguishing UV from CSU and identifying features suggestive of systemic disease.

Results: UV is classified into normocomplementemic and hypocomplementemic forms, with the latter more frequently associated with systemic manifestations. Clinical features suggestive of UV include wheals persisting for more than 24 hours, burning or pain, residual hyperpigmentation or purpura, and systemic symptoms such as arthralgia, fever, renal, pulmonary, gastrointestinal, or ocular involvement. Complement levels, inflammatory markers, autoimmune testing, urinalysis, and skin biopsy are important diagnostic tools. Histopathological evidence of leukocytoclastic vasculitis remains central to diagnosis. Treatment should be individualized according to disease severity, systemic involvement, and underlying triggers or associated conditions.

Conclusion: Accurate recognition of UV requires careful differentiation from CSU and assessment for systemic involvement. A structured clinical and laboratory evaluation, supported by histopathological confirmation when appropriate, facilitates timely diagnosis and individualized management. Further prospective studies are needed to establish standardized diagnostic criteria and evidence-based treatment strategies.

Keywords: urticarial vasculitis, chronic urticaria, leukocytoclastic vasculitis

UPDATE ON INDUCIBLE CUS OR NOVEL VIEW (UPDATES) ON RECURRENT ANGIOEDEMAS

Daria Fomina^{1,2,3}

¹ Moscow Research and Clinical Center of Allergy and Immunology, City Clinical Hospital 52, Moscow, Healthcare Department, Moscow, Russia

² Department of Clinical Immunology and Allergology, I.M. Sechenov First Moscow, State Medical University (Sechenov University), Moscow, Russia

³ Department of Pulmonology, Astana Medical University, Astana, Kazakhstan

Angioedema is a heterogeneous condition with diverse clinical phenotypes and underlying mechanisms, making accurate diagnosis and classification challenging. The new classification proposed in 2022 introduced a more individualized approach based on different endotypes and mechanisms of angioedema; however, it remains imperfect, as new clinical and genetic findings have emerged since its publication. In particular, several new mutations associated with hereditary angioedema with normal C1-inhibitor levels (HAE-nC1-INH) have been identified, demonstrating that the spectrum of genetically determined angioedema continues to expand. Advances in genetic testing, including targeted sequencing and whole-exome/genome sequencing, have enabled the identification of mutations in genes such as F12, PLG, ANGPT1, KNG1, MYOF and HS3ST6, while in many patients the underlying genetic defect remains unknown. These discoveries have contributed to a better understanding of the involvement of the kallikrein-kinin, fibrinolytic and vascular endothelial pathways in angioedema pathogenesis. Diagnostic algorithms continue to evolve, particularly for patients with recurrent angioedema and normal C1-inhibitor levels, in whom genetic testing can play an important role. However, available evidence remains limited, as some mutations have been reported only in a small number of families or individual cases, making their clinical significance difficult to interpret. Therefore, systematic integration of genetic, clinical and functional data is needed to improve classification, establish the pathogenicity of newly identified variants and refine diagnostic strategies. Functional validation remains an important unmet need, as detection of a mutation alone does not confirm its pathogenic role. Significant unmet needs also remain in the treatment of HAE-nC1-INH, emphasizing the necessity of further research into evidence-based, subtype-specific and personalized therapeutic approaches.

Keywords: targeted sequencing, whole-exome/genome sequencing, angioedema

FROM PHENOTYPES TO ENDOTYPES: ADVANCING PRECISION MEDICINE IN CHRONIC URTICARIA

Emek Kocatürk Göncü¹

¹ Charite University Institute of Allergology

Introduction: Chronic urticaria is a clinically heterogeneous disease in which patients with apparently similar phenotypes may have different disease trajectories, comorbidities, biomarker profiles, and treatment responses. Recognition of this biological heterogeneity is challenging the traditional view of chronic urticaria as a uniform mast-cell-driven disorder and opening a path toward personalized management.

Materials and Methods: The evolving concept of phenotypes and endotypes in chronic spontaneous urticaria (CSU), from clinical expression to underlying immune mechanisms, was explored. Emerging evidence supports distinct molecular patterns, including type 1/autoallergic and type 2b/autoimmune CSU, as well as potential endotypes involving complement and coagulation pathways, neuroinflammation, and mast-cell-intrinsic mechanisms. Current biomarkers and their potential role in clinical decision-making were also examined.

Results: Total immunoglobulin E, anti-thyroid peroxidase antibodies, basophil activation and histamine-release assays, basophil parameters, C-reactive protein, and D-dimer may provide clues to disease biology, severity, or treatment response; however, most remain insufficiently validated for routine clinical use. Current management remains predominantly phenotype-informed, while novel therapies targeting immunoglobulin E, interleukin-4/interleukin-13, Bruton tyrosine kinase, KIT, and other pathways may increasingly influence therapeutic strategies.

Conclusion: The evolution from phenotype-informed to biomarker-informed and endotype-driven treatment may allow movement from controlling disease activity toward modifying the underlying disease process, preventing progression, and inducing sustained, therapy-free remission. Prospective validation of biomarkers and evidence is required to make precision medicine clinically actionable.

Keywords: chronic urticaria, phenotype, endotype

URTICARIA TREATMENT IN 2026 - ON THE BALKANS AND BEYOND

Razvigor Darlenski¹

¹ Department of Dermatology and Venereology, Tokuda Hospital, 51B Nikola Vaptazrov Blvd; 1407 Sofia, Bulgaria

Introduction: Chronic urticaria (CU), particularly chronic spontaneous urticaria (CSU), remains one of the most burdensome inflammatory skin diseases despite highly effective targeted therapies. The 2026 international EAACI/GA²LEN/EuroGuiDerm/APAAACI guideline reinforces the treat-to-target concept, emphasizing complete symptom control, validated patient-reported outcome measures, and individualized stepwise management. However, translating recommendations into clinical practice remains challenging across the Balkan region due to differences in healthcare organization, reimbursement policies, and access to innovative therapies.

Materials and Methods: The lecture reviews current evidence-based management of chronic urticaria in 2026 and provides an overview of therapeutic availability and reimbursement across Balkan countries.

Results: The updated treatment algorithm includes optimized use of second-generation H1-antihistamines, biologic therapy with omalizumab and dupilumab, cyclosporines, and emerging targeted agents such as Bruton tyrosine kinase inhibitors and KIT-directed therapies. Attention is given to treatment goals, biomarker-driven perspectives, disease monitoring using UAS7 and UCT, and strategies for achieving complete disease control. A comparative overview of reimbursement pathways, prescribing restrictions, biologic accessibility, and referral systems highlights regional disparities and opportunities for harmonization. Real-world experience from UCARE centers and evolving national policies illustrate practical solutions for optimizing patient care.

Conclusion: Despite increasing support for precision medicine and early access to advanced therapies, substantial inequalities persist across the Balkans. Harmonizing reimbursement policies, strengthening regional collaboration, and expanding access to innovative treatments are essential to ensure equitable patient benefit from the evolving therapeutic landscape of chronic urticaria.

Keywords: chronic urticaria, antihistamines H1, omalizumab, dupilumab, cyclosporine

ALLERGIC CONTACT DERMATITIS: FROM CLASSICAL ALLERGENS TO EMERGING SENSITIZERS

Suzana Ljubojević Hadžavdić^{1,2}

¹ Department of Dermatology and Venereology, University Hospital Centre Zagreb, Zagreb, Croatia

² University of Zagreb School of Medicine, Zagreb, Croatia

Allergic contact dermatitis (ACD) remains a highly relevant but often underestimated diagnosis in modern dermatovenereology. While its basic mechanisms have not changed, the spectrum of patient exposures has evolved dramatically. Today, relevant allergens are no longer limited to classic sources such as metals, fragrances, rubber chemicals, preservatives, and hair dyes. Increasingly, sensitization is linked to modern lifestyle, cosmetic trends, occupational exposures, medical devices, wearable technologies, sports equipment, topical treatments, and the widespread use of “clean,” “natural,” or multifunctional products. This changing exposure landscape has also transformed the clinical presentation of ACD. The disease frequently affects anatomically and diagnostically challenging sites, including the face, eyelids, hands, genital and perianal areas. In these locations, ACD may easily be misinterpreted as irritant dermatitis, atopic dermatitis, infection, inflammatory dermatoses, or therapy-resistant eczema. As a result, the diagnosis is often delayed or missed, particularly when exposure history is complex or when clinical relevance of patch test reactions is difficult to establish. Recognition of both classic and emerging sensitizers is therefore essential for accurate diagnosis, targeted avoidance strategies, and personalized prevention. ACD should remain a key consideration in every patient with persistent, recurrent, atypical, or treatment-resistant dermatitis. In the era of rapidly changing exposures, careful clinical assessment and appropriate patch testing are more important than ever.

Keywords: allergic contact dermatitis, sensitizers, patch testing

SUBLINGUAL IMMUNOTHERAPY

Vesna Karanikolic¹

¹ Medical Faculty, University of Nis, University Clinical Centre Nis, Serbia

For many years, allergen immunotherapy for allergic respiratory diseases has been delivered primarily through subcutaneous injection. This route - subcutaneous immunotherapy (SCIT) is well established as an effective treatment for allergic rhinoconjunctivitis and asthma. Its use, however, comes with meaningful drawbacks: patients must attend a clinician's office for regular injections, generally for three to five years, and the treatment itself can provoke serious systemic allergic reactions, up to and including anaphylaxis. Sublingual immunotherapy (SLIT) offers a different route of delivery, administering allergens orally beneath the tongue in the form of either a dissolvable tablet or an aqueous liquid extract, and over time it trains immune system to ignore the allergen, significantly reducing allergy symptoms. The tablet formulation in particular brings several advantages over injection-based therapy: it can be taken by the patient or a caregiver at home, eliminates the need for injections, and is associated with a far lower risk of serious systemic reactions than SCIT. Liquid SLIT-drops are available in various regions worldwide

Keywords: sublingual immunotherapy, allergy, rhinoconjunctivitis, asthma

DIVERSITY OF THE GUT MICROBIOME IN CHILDREN WITH ATOPIC DERMATITIS COMPARED TO THEIR HEALTHY RELATIVES

Sanja Umicevich^{1,2}

¹ Clinic of Dermatology and Venereology, University Clinical Center of the Republic of Srpska, Banja Luka, Bosnia and Herzegovina

² Department of Dermatovenereology, Faculty of Medicine, University of Banja Luka, Banja Luka, Bosnia and Herzegovina

Introduction: Atopic dermatitis (AD) is a common chronic inflammatory skin disease in children. Increasing evidence suggests that alterations in the gut microbiome may influence AD through metabolic, immunomodulatory, and neuroendocrine mechanisms within the gut-skin axis. This study aimed to investigate differences in gut microbiome composition between children with AD and their healthy relatives.

Materials and Methods: A metagenomic analysis of the gut microbiome was performed in children diagnosed with AD and their healthy relatives. Microbial composition and relative abundance were compared between the two groups to identify taxa associated with AD or health.

Results: Children with AD demonstrated a significantly different gut microbial profile compared to their healthy relatives. The genus *Tyzzarella* was significantly more abundant in children with AD. In contrast, the genus *Lachnospiraceum* GAM7 and the species *Lachnospiracea* NK4A136 were significantly more prevalent among healthy relatives. These findings indicate a distinct microbial pattern associated with AD and suggest that specific gut bacterial taxa may be linked to either inflammatory disease or a healthier state.

Conclusion: Children with AD exhibit significant differences in gut microbiome composition compared to their healthy relatives. The increased abundance of *Tyzzarella* and the higher prevalence of specific *Lachnospiraceae* taxa in healthy relatives highlight potential microbial signatures associated with AD. Further studies are needed to clarify their functional role and potential implications for microbiome-targeted interventions.

Keywords: atopic dermatitis, gastrointestinal microbiome, child, metagenomics, gut-skin axis

ENDOSCOPIC PHENOTYPES AND EREFS SCORING IN EOSINOPHILIC ESOPHAGITIS: IMPLICATIONS FOR DERMATOLOGISTS

Gjorgi Deriban¹, Vladimir Andreevski¹, Ance Volkanovska¹, Emilija Nikolovska Trpcevska¹, Dafina Janevska Nikolova¹, Atip Ramadani¹, Fani Licoska¹

¹ University Clinic for Gastroenterohepatology, Faculty of Medicine, Skopje, Republic of North Macedonia

Introduction: Eosinophilic esophagitis (EoE) is a chronic, immune-mediated disease within the spectrum of type 2 inflammatory disorders and shares common immunopathogenic mechanisms with atopic dermatitis, asthma, allergic rhinitis, and food allergies. These mechanisms include dysregulated interleukin-4, interleukin-5, and interleukin-13-mediated immune responses, epithelial barrier dysfunction, and eosinophilic inflammation. Atopic dermatitis has a particularly strong association with EoE.

Materials and Methods: The clinical manifestations, diagnostic approach, disease severity assessment, and current management of EoE are reviewed. Diagnosis requires upper endoscopy with esophageal biopsies demonstrating eosinophil-predominant inflammation. Endoscopic disease severity is commonly assessed using the EREFS (Edema, Rings, Exudates, Furrows, and Strictures) scoring system.

Results: Clinical manifestations vary with age but commonly include dysphagia, food impaction, chest discomfort, and gastroesophageal reflux-like symptoms. If untreated, chronic inflammation may lead to esophageal remodeling, fibrosis, and stricture formation. Current management includes dietary elimination strategies, proton pump inhibitors, swallowed topical corticosteroids, and endoscopic dilation for fibrostenotic disease. Biologic therapies have expanded treatment options for moderate-to-severe EoE. Dupilumab, which inhibits interleukin-4 and interleukin-13 signaling, is approved for both EoE and atopic dermatitis, providing an example of targeted therapy directed at shared inflammatory pathways.

Conclusion: Awareness of shared immunopathogenic mechanisms may contribute to earlier recognition of EoE among patients with atopic disease, particularly atopic dermatitis. This can facilitate appropriate referral, earlier diagnosis, and improved patient outcomes.

Keywords: eosinophilic esophagitis, atopic dermatitis, asthma, rhinitis, interleukin-4, interleukin-13

HIGH PREVALENCE OF HISTOLOGICAL COELIAC DISEASE IN AN ADULT ENDOSCOPY-BASED POPULATION: WHY DERMATOLOGISTS SHOULD CARE

Volkanovska A¹, Andreevski V¹, Volkanovska Ilijevska C², Nikolov F¹, Karadzova A¹, Naumovska Z³, Krsteska B⁴

¹ University Clinic for Gastroenterohepatology, Ss. Cyril and Methodius University in Skopje, North Macedonia

² University Clinic for Endocrinology, Diabetes and Metabolic Disorders

³ Faculty of Pharmacy, Ss. Cyril and Methodius University in Skopje, North Macedonia

⁴ Institute of Pathological Anatomy, Ss. Cyril and Methodius University in Skopje, North Macedonia

Introduction: Coeliac disease (CeD) is a systemic immune-mediated disorder with manifestations extending beyond the gastrointestinal tract. Many adults remain undiagnosed because they present with subtle, non-classical, or exclusively extraintestinal features. Dermatologists may play an important role in early recognition, as cutaneous and mucosal manifestations can precede gastrointestinal symptoms.

Materials and Methods: We evaluated findings from a prospective endoscopy-based screening study in adults undergoing upper gastrointestinal endoscopy. A standardized six-biopsy protocol was used to assess duodenal histology. The clinical relevance of extraintestinal manifestations and the role of dermatological findings in identifying undiagnosed CeD were considered in the context of current diagnostic recommendations.

Results: Histological changes compatible with CeD were identified in approximately one in eight adults undergoing screening, despite predominantly non-classical clinical presentations. Dermatological and mucosal findings, including dermatitis herpetiformis, recurrent aphthous stomatitis, refractory psoriasis, alopecia areata, chronic pruritus, and associated autoimmune disorders, may provide important clues to underlying CeD. These findings support a broader clinical approach beyond gastrointestinal symptoms. Current European guidelines recommend appropriate serological testing, standardized duodenal biopsy protocols, and multidisciplinary collaboration.

Conclusion: CeD should be considered a multisystem disorder, particularly in patients with suggestive dermatological manifestations. Increased awareness among dermatologists may facilitate earlier diagnosis, reduce diagnostic delay, and prevent long-term complications. Integrating dermatological assessment with appropriate serological and histological evaluation may improve detection and patient outcomes.

Keywords: coeliac disease, extraintestinal manifestations, endoscopy-based screening, dermatology, histological screening

THE IMPACT OF CONTEMPORARY ENVIRONMENTAL FACTORS ON ALLERGIC SKIN DISEASES

*Breshkovska H.¹, Nikolovska S.¹, Duma S.¹, Dohcheva Karajovanov I.¹,
Mircheska Arsovska E.¹, Vukovska R.¹, Najdova A.¹, Trajkova V.², Teovska
Mitrevska N.³, Gjorgjeska A.⁴, Peneva M.⁴*

¹ University Clinic for Dermatology, Faculty of Medicine, Ss. Cyril and Methodius
University in Skopje, Skopje,
R.N. Macedonia

² City General Hospital "8 September", Skopje, R.N. Macedonia

³ Re-Medika General Hospital, Skopje, R.N. Macedonia

⁴ University Clinic for Plastic and Reconstructive Surgery, Skopje, R.N. Macedonia

Introduction: Climate change and environmental pollution are becoming increasingly important determinants of human health, with a particularly significant impact on dermatological and allergic diseases. Rising global temperatures, extreme weather events, and air pollution lead to increased exposure to particulate matter, pollen, allergens, and various irritants. These factors may impair epidermal barrier function and promote oxidative stress and inflammatory responses, mechanisms that are particularly relevant to the pathogenesis and exacerbation of atopic dermatitis. Air pollution has been associated with increased disease activity and more frequent exacerbations of atopic dermatitis, while climate change affects the distribution, concentration, and seasonal duration of allergens.

Case presentation: Environmental factors also play an important role in contact dermatitis. Increased and repeated exposure to irritants and allergens, including detergents, cosmetic products, and other chemical substances may lead to skin barrier disruption and the development or worsening of irritant and allergic contact dermatitis. Changes in temperature and humidity may further modify skin sensitivity to external factors.

Conclusion: Climate and environmental changes have also been associated with urticaria and other inflammatory dermatoses, while long-term exposure to pollutants and ultraviolet radiation contributes to photoaging and an increased risk of skin malignancies. A better understanding of the interaction between the environment, the skin barrier, and the immune system is essential for prevention, early identification of patients at risk, and appropriate management of climate-sensitive dermatological diseases.

Keywords: climate change, air pollution, atopic dermatitis, skin barrier, allergens

COMPLEX MEDICAL DERMATOLOGY - PART 2

TRICHOSCOPY IN ALOPECIA AREATA

Monika Fida^{1,2}, Alesja Palaj^{2,3}, Ina Sotiri³, Lejdis Zeneli^{2,3}, Oljeda Kaçani³

¹ Department of Dermatology and Venereology, University of Medicine of Tirana, Albania

² University Hospital Centre “Mother Theresa”, Tirana, Albania

³ Private Dermatology Clinic “A Derma”, Tirana, Albania

Introduction: Alopecia areata (AA) is an autoimmune non-scarring alopecia with a variable clinical presentation and unpredictable disease course. Trichoscopy, a quick and noninvasive scalp examination, has become a valuable diagnostic tool and is increasingly used to monitor disease activity and treatment response over time. Recognizing characteristic trichoscopic patterns may provide additional information for assessing disease progression and prognosis.

Materials and Methods: This presentation reviews the key trichoscopic findings observed in alopecia areata and their clinical significance in diagnosis, assessment of disease activity, prognosis, treatment response, and follow-up. Particular attention is given to common trichoscopic features, including yellow dots, black dots, broken hairs, and regrowing hairs, and their relationship to different stages of disease activity.

Results: Yellow dots, black dots, and broken hairs may provide important clues regarding active disease, while regrowing hairs can indicate clinical improvement and treatment response. The recognition and interpretation of these patterns may help clinicians better understand the current activity and evolution of alopecia areata in individual patients. Trichoscopic monitoring can also provide objective information during follow-up and may assist clinicians in adapting treatment according to changes in disease activity.

Conclusion: Trichoscopy is a valuable, rapid, and noninvasive tool that complements clinical examination in alopecia areata. Recognition of characteristic trichoscopic findings can support diagnosis, assessment of disease activity, prognosis, and evaluation of treatment response, contributing to more individualized patient management and follow-up.

Keywords: alopecia areata, trichoscopy, prognosis

FRONTAL FIBROSING ALOPECIA – CASE-BASED INSIGHTS

Ivana Binic¹

¹ Medical Faculty, University of Nis, Serbia

Introduction: Frontal fibrosing alopecia (FFA) is a primary lymphocytic cicatricial alopecia characterized by progressive frontotemporal hairline recession, frequently accompanied by eyebrow loss. Although increasingly recognized worldwide, FFA remains challenging because of its heterogeneous clinical presentation, variable disease activity, and uncertain progression. This case-based presentation aims to highlight the diverse clinical manifestations of FFA and the diagnostic and therapeutic challenges encountered in clinical practice.

Case Presentation: Several illustrative cases demonstrated different clinical patterns and stages of FFA, including variable degrees of frontotemporal hairline recession, eyebrow and facial involvement, and characteristic trichoscopic findings. Particular attention was given to patients with subtle or discordant signs of inflammatory activity, in whom assessment of disease activity and progression may be challenging. The cases also illustrate therapeutic dilemmas arising during longitudinal follow-up and the need to adapt management to the individual clinical phenotype and activity of disease.

Conclusion: FFA requires careful clinical and trichoscopic evaluation combined with longitudinal assessment. Recognition of early or subtle signs of disease activity is essential, as follicular damage is irreversible. Since no single therapeutic approach is consistently effective, individualized management and regular follow-up remain fundamental to controlling disease activity and preventing further hair loss.

Keywords: frontal fibrosing alopecia, cicatricial alopecia, lichen planopilaris, trichoscopy, hair loss

HIDRADENITIS SUPPURATIVA: THE NEW CLINICAL PHENOTYPES

Evgeniya Hristakieva¹

¹ Department of Dermatology and Venereology, Trakia University, Clinic of Dermatology and Venereology, University Hospital, Stara Zagora, Bulgaria

Introduction: Hidradenitis suppurativa (HS) is a chronic inflammatory disease of hair follicles characterized by recurrent painful nodules, abscesses, sinus tracts, and scarring, most commonly in the axillary, inguinal, and anogenital regions. These features are characteristic of typical HS but do not encompass all manifestations of this clinically heterogeneous disease. More precise and universally accepted phenotype classification is essential for personalized medicine and for identifying severe clinical forms, preventing diagnostic delays and unsatisfactory treatments.

Materials and Methods: We summarize existing phenotype classifications and present our experience with 800 patients at the Expert Center for Hidradenitis Suppurativa and related diseases, University Hospital, UMHAT “Prof. Dr Stoyan Kirkovich,” Stara Zagora. Particular attention is given to uncommon manifestations, including elephantiasis nostras-like edema, cutis verticis gyrata-like changes, and pyoderma gangrenosum (PG)-like lesions.

Results: We propose a new PG-like phenotype of HS in which painful ulcerative or vegetative lesions appear at sites affected by HS. Their activity coincides with flare-ups of classic HS manifestations in the same patient, and they heal with cribriform or atrophic scars. Emphasis is placed on the pathophysiologic and clinical overlap between HS and PG.

Conclusion: Identifying distinct clinical phenotypes, particularly less commonly recognized severe manifestations, is important for improving diagnosis and treatment. More precise phenotype classification may support the development of optimal therapeutic regimens for individual patients and advance personalized medicine in HS.

Keywords: hidradenitis suppurativa, clinical phenotypes, pyoderma gangrenosum-like lesions

WHEN THE SKIN WARNS FIRST: CUTANEOUS CLUES TO VASCULAR DISEASE

Ivana Dohcheva Karajovanov^{1,2}, Silvija Duma^{1,2}, Hristina Breshkovska^{1,2}, Julija Mitrova Telenta^{1,2}, Elena Mircheska Arsovska^{1,2}, Maja Dimova^{1,2}, Rebeka Vukovska²

¹ Department of Dermatovenereology, Faculty of Medicine, Ss. Cyril and Methodius University in Skopje, Republic of North Macedonia

² University Clinic for Dermatology, Skopje, Republic of North Macedonia

Introduction: The skin is a uniquely accessible vascular organ in which disturbances of arterial, venous, and microvascular homeostasis may become clinically apparent before systemic vascular disease is recognized. For the dermatologist, vascular morphology may provide an early phenotypic signature of vessel inflammation, occlusion, thrombosis, embolization, or impaired tissue perfusion.

Materials and Methods: This lecture provides a clinically oriented, morphology-driven framework for interpreting cutaneous signs of vascular disease. Particular attention is given to livedo reticularis and livedo racemosa, retiform purpura, acral ischemic manifestations, and cutaneous patterns associated with thrombotic, embolic, venous, and microcirculatory disorders. Emphasis is placed on correlating lesion morphology and distribution with the caliber and compartment of affected vasculature and the underlying pathophysiological mechanism.

Results: A key diagnostic challenge is distinguishing inflammatory vascular injury from occlusive vasculopathy, as clinically similar presentations may reflect fundamentally different mechanisms and require different diagnostic pathways. Recognition of specific cutaneous patterns may guide targeted vascular, hematological, immunological, or systemic investigation and identify patients requiring timely interdisciplinary assessment.

Conclusion: By integrating morphology, vascular anatomy, and pathophysiology, dermatological examination can function as an early diagnostic interface with systemic vascular disease. Recognizing when the skin warns first may facilitate timely identification of clinically significant vascular pathology and more precise, mechanism-based patient evaluation.

Keywords: vascular diseases, livedo reticularis, livedoid vasculopathy, thrombosis, ischemia, vasculitis

IMPACT OF SHORT-STRETCH COMPRESSION THERAPY ON QUALITY OF LIFE IN PATIENTS WITH LIMB LYMPHEDEMA: A ONE-YEAR FOLLOW-UP STUDY

Tanja Planinšek Ručigaj¹

¹ Dermatovenereological Clinic, University Medical Centre Ljubljana, Slovenia

Background: Lymphedema is a chronic, progressive condition associated with impaired mobility, psychosocial burden, reduced quality of life, and increased risk of complications. Patients frequently report concerns regarding body image, clothing and footwear limitations, treatment burden, social participation, and disease progression. Effective compression therapy represents the cornerstone of conservative management.

Aim: To evaluate the impact of short-stretch compression therapy on quality of life in patients with stage II lower limb lymphedema.

Methods: Patients with lower limb lymphedema completed a 10-item quality-of-life questionnaire based on the Dermatology Life Quality Index (DLQI) before treatment initiation and after one year of compression therapy. Initial treatment consisted of short-stretch bandaging, followed by long-term maintenance therapy using compression garments. The questionnaire assessed symptoms, embarrassment, daily activities, clothing limitations, leisure activities, sport participation, work, family relationships, sexual difficulties, and treatment burden.

Results: A total of 163 patients were evaluated. Mean DLQI score improved from 10.59 before treatment to 5.74 after one year of compression therapy, representing a clinically meaningful improvement in quality of life. Patients reporting a large or very large impact decreased from 27% and 11% before therapy to 2% and 2% after therapy, respectively, while those reporting no impairment increased from 24% to 47%. The greatest improvements were observed in clothing restrictions, treatment burden, embarrassment, work-related limitations, and leisure activities. Improvement was observed across all assessed domains and patient subgroups.

Conclusion: Stage II lower limb lymphedema substantially impairs physical, functional, and psychosocial well-being. One year of compression therapy significantly improves quality of life and reduces disease burden, highlighting the importance of early diagnosis, prompt treatment, and long-term adherence.

Keywords: lymphedema, compression therapy, quality of life, short-stretch bandages, Dermatology Life Quality Index

CLINICAL MANIFESTATIONS OF SEXUALLY TRANSMITTED INFECTIONS IN THE ORAL CAVITY

Zoran Golušin^{1,2}

¹ University of Novi Sad, Faculty of Medicine, Novi Sad, Serbia

² Clinic of Dermatovenereology Diseases, University Clinical Center of Vojvodina, Novi Sad, Serbia

Introduction: Sexually transmitted infections (STIs) may produce characteristic and potentially diagnostic lesions on mucous membranes. Patients may seek medical help only after visible or symptomatic lesions develop in the oral cavity, which can create difficulties in establishing a diagnosis, particularly when an STI is not considered.

Materials and Methods: The oral manifestations of major sexually transmitted infections, with emphasis on syphilis, gonorrhea, and human papillomavirus (HPV) infection, were reviewed.

Results: Syphilis is a prototypical STI with oral manifestations in all stages of disease. In primary syphilis, the hard chancre occurs in 5-14% of patients with extragenital involvement, commonly affecting the tongue, buccal mucosa, oropharynx, or lips. In secondary syphilis, at least 30% of patients have papules or plaques in the oral mucosa, tongue, or soft palate. Mucous plaques are highly infectious and may present as elevated oval plaques with erosion or ulceration, multiple plaques forming snake-like ulcers, or leukoplakia-like plaques. Bullous-erosive lesions may mimic pemphigus. In tertiary syphilis, gumma may occur in the oral cavity, most commonly palatally or lingually. Oral gonorrhea is uncommon and may present with nonspecific multiple ulcerations with pseudomembranes on the oropharynx, tonsils, and tongue. HPV may affect oral mucosa through sexual transmission or autoinoculation, producing common warts, condylomata acuminata, and focal epithelial hyperplasia.

Conclusion: Recognition of oral manifestations of STIs is important for appropriate diagnosis and management, particularly when lesions mimic other oral diseases.

Keywords: sexually transmitted infections, oral cavity, human papillomavirus

TREATMENT OF MOLLUSCUM CONTAGIOSUM: IS IT EASY?

Zoran Nedic¹

¹ Department of Dermatovenereology, Health Center Euromedik, Pancevo Serbia

Background: Molluscum contagiosum is a benign viral dermatosis caused by a DNA virus of the *Molluscipoxvirus* genus and *Poxviridae* family. It is characterized by small, discrete, waxy, hemispherical, skin-colored papules with central umbilication. The disease can develop at any age but occurs most commonly in children aged 1-10 years, sexually active teenagers and adults, and immunocompromised patients.

Clinical Features: Lesions can appear anywhere on the body. In children, they commonly involve the face, trunk, extremities, and axillary area, while adults more often present with anogenital, abdominal, and inner thigh lesions. Lesions may be associated with itching, erythema, pain, or secondary bacterial infection. Transmission occurs mainly through direct skin-to-skin contact or indirectly through infected personal care items, clothing, towels, and other fomites. Swimming pools and pregnancy represent additional possible routes of transmission.

Diagnosis and Treatment: Diagnosis is usually based on medical history and clinical examination, with dermoscopy increasingly used as a diagnostic tool. Molluscum contagiosum usually resolves spontaneously within 6-9 months; therefore, treatment is not always necessary. Treatment may be considered to prevent autoinoculation, secondary infection, social discomfort, cosmetic concerns, or to accelerate resolution. Available options include cryotherapy, curettage, laser therapy, oral cimetidine, and various topical treatments, including cantharidin, podophyllotoxin, salicylic acid, potassium hydroxide, tretinoin, and imiquimod.

Conclusion: Each treatment has limitations, and therapy should be individualized according to patient age, lesion number and location, adverse effects, and feasibility of application. Treatment is often neither easy nor quick, emphasizing the need for further research into effective therapies with minimal adverse effects.

Keywords: Molluscum contagiosum, cryotherapy, curettage, laser therapy, oral cimetidine, topical treatments

AESTHETIC DERMATOLOGY

COMBINATION OF DIFFERENT LASERS IN DERMATOLOGY

Andrej Petrov^{1,2}

¹ Clinical Hospital Acibadem Sistina, Skopje, N. Macedonia

² Faculty of Medical Sciences, Goce Delchev University, Shtip, N. Macedonia

Introduction: Laser technology is an important component of modern dermatological practice, with different laser systems targeting specific chromophores and tissue depths. Combining laser modalities may provide complementary effects and allow simultaneous treatment of multiple pathological or cosmetic targets.

Materials and Methods: This review presents the principles and potential clinical applications of combination laser therapy in dermatology, focusing on laser selection, treatment sequence, and optimization of treatment parameters. Relevant applications include combinations targeting pigmentation, vascular lesions, scars, hair, and skin aging.

Results: Combination laser therapy can address multiple tissue targets and depths. Examples include Nd:YAG and Er:YAG lasers for selected pigmented lesions, vascular lasers combined with fractional lasers for scar treatment, and complementary wavelengths for hair removal and skin rejuvenation. Treatment parameters, including fluence, pulse duration, spot size, and intervals between procedures, should be individualized according to the clinical indication, skin type, target chromophore, and desired outcome. Appropriate sequencing of modalities may enhance therapeutic effects while reducing the risk of adverse reactions.

Conclusion: Combining different laser technologies represents a versatile and individualized approach in modern dermatology. By targeting distinct chromophores and tissue depths, combination therapy may improve efficacy and address multiple clinical concerns within a comprehensive treatment strategy. Careful patient selection and appropriate parameter adjustment are essential to optimize outcomes and minimize adverse effects.

Keywords: combination laser therapy, Nd:YAG Laser, Er:YAG Laser, fractional laser, vascular laser, pigmented lesions, scar treatment, skin rejuvenation

DIFFICULT-TO-TREAT HYPERPIGMENTATION

Jelena Stojkovic - Filipovic¹

¹ Clinic of Dermatology and Venereology, University Clinical Center of Serbia, University of Belgrade

Hyperpigmentation is one of the most common yet therapeutically challenging concerns in dermatological practice. Although treatment options continue to expand, many pigmentary disorders remain persistent, recurrent and difficult to manage, particularly when dermal pigment deposition or ongoing inflammation is present. Post-inflammatory hyperpigmentation (PIH) is a frequent consequence of inflammatory dermatoses and external insults and may persist for months or even years. The distinction between epidermal and dermal pigmentation is clinically relevant, as pigment incontinence and the presence of dermal melanophages are associated with a more resistant course. Acne-induced macular hyperpigmentation represents a particularly common and long-lasting form of PIH and requires simultaneous management of both active acne and residual pigmentation. Acquired dermal macular hyperpigmentation (ADMH), encompassing overlapping entities such as lichen planus pigmentosus, erythema dyschromicum perstans and Riehl's melanosis, represents an additional therapeutic challenge. Management may include topical depigmenting and anti-inflammatory agents, retinoids, chemical peels, laser- and light-based procedures and, in selected active or extensive cases, systemic treatment. There is no universal therapeutic approach to difficult-to-treat hyperpigmentation. Accurate diagnosis, assessment of disease activity and pigment depth, and individualized combination or sequential treatment are essential. Importantly, rigorous photoprotection against UV and visible light should accompany all therapeutic strategies to optimize outcomes and minimize recurrence.

Keywords: hyperpigmentation, PIH, photoprotection

COMBINATION TECHNIQUES FOR HAIR STIMULATION: A REVIEW OF CLINICAL EVIDENCE AND EXPERIENCE

Natasa Teovska Mitrevska¹

¹ Re-Medika Private General Hospital, Dermatology Department, Skopje, N. Macedonia

Introduction: Hair loss disorders, particularly androgenetic alopecia, remain common and challenging conditions in dermatological practice. Although established pharmacological therapies remain the cornerstone of treatment, increasing evidence supports regenerative and energy-based technologies as complementary approaches. Platelet-rich plasma (PRP), exosome-based therapies, laser treatments, and radiofrequency microneedling may influence different biological pathways involved in follicular function and scalp remodeling.

Materials and Methods: A narrative review of clinical and experimental studies was performed, focusing on the mechanisms of action, efficacy, safety, and treatment protocols of regenerative and energy-based modalities used for hair stimulation. Particular attention was given to PRP, exosome-based approaches, non-ablative Er 2940-nm laser therapy in SMOOTH® mode, and fractional microneedle radiofrequency.

Results: The reviewed modalities demonstrate potentially complementary biological effects. PRP may enhance follicular activity through growth factors and cytokines involved in angiogenesis, cellular proliferation, and tissue repair. Exosome-based approaches may influence intercellular communication, growth-factor signaling, inflammation, and the follicular microenvironment, although clinical evidence remains heterogeneous. Non-ablative Er laser therapy may promote vasodilation, microcirculatory changes, heat-shock responses, fibroblast activation, and extracellular-matrix remodeling. Fractional radiofrequency microneedling delivers controlled thermal energy into the dermis, potentially influencing perifollicular inflammation, vascularization, dermal remodeling, and follicular structures. Their combination may provide a multilevel approach targeting the follicular microenvironment through complementary mechanisms.

Conclusion: Multimodal protocols combining PRP, exosome-based regenerative approaches, laser therapy, and fractional radiofrequency microneedling represent a promising approach to hair loss management. However, evidence remains limited by heterogeneous protocols, device parameters, biological products, and small clinical studies. Well-designed randomized controlled trials are required to determine optimal combinations, sequencing, treatment intervals, and long-term efficacy.

Keywords: androgenetic alopecia, hair loss, platelet-rich plasma, exosomes, laser therapy, microneedles

PERIOCLAR BEAUTY WHEN CONSERVATIVE TREATMENTS DO NOT WORK

Igor Peev¹

¹ University Clinic for Plastic and Reconstructive Surgery, Faculty of Medicine, Ss. Cyril and Methodius University in Skopje

Introduction: The periocular region, including the upper and lower eyelids and brow, plays an important role in facial aesthetics. Due to its thin skin and active underlying muscles, it is particularly susceptible to early signs of aging. Conservative treatments may be effective; however, severe brow ptosis, excess eyelid skin, or orbital fat protrusion may require surgical correction.

Materials and Methods: We present our experience with periocular rejuvenation procedures performed using different surgical techniques, selected according to individual anatomical characteristics and patients' aesthetic goals. A retrospective statistical analysis of patients treated over a five-year period was performed. Procedures included upper and/or lower blepharoplasty and direct or remote brow-lifting techniques, performed separately or in combination.

Results: Blepharoplasty involved removal of excess skin, with or without modification of underlying tissues, and additional tightening when indicated. Brow ptosis was treated using individualized lifting techniques. The choice and combination of procedures were adapted to each patient's anatomy and desired outcome. The procedures provided significant aesthetic improvement and high patient satisfaction, with most interventions performed under local anesthesia.

Conclusion: The periocular region can be effectively rejuvenated using individualized surgical techniques. Blepharoplasty and brow-lifting procedures provide powerful tools for correcting age-related changes, with immediate and generally satisfactory aesthetic results. Careful assessment of anatomy and patient expectations is essential for achieving optimal outcomes.

Keywords: periocular region, blepharoplasty, surgery, oculoplastic surgery, brow lifting

PRP, NON-CROSS-LINKED HA WITH CAHA AND BOTULINUM TOXIN- REGENERATIVE AESTHETICS AND NATURAL SKIN GLOW

*Andrijana Gjorgjeska¹, Margarita Peneva¹, Ermira Bedzeti¹, Donjeta
Beriša¹, Tamara Gjorgjeska¹, Hristina Breshkovska²*

¹ University Clinic for Plastic and Reconstructive Surgery, Faculty of Medicine - Skopje

² University Clinic for Dermatology, Skopje, Republic of North Macedonia

Introduction: Regenerative aesthetics represents a new goal in aesthetic medicine; its aim is to stimulate existing cellular activities and biological responses. Patients seek natural-looking results, and we as doctors are shifting toward regenerative approaches rather than repair and replace. **Material and Methods:** The combined application of platelet-rich plasma and hyperdiluted botulinum toxin in non-cross-linked HA with CaHA, administered in several sessions at 2-week intervals, represents a comprehensive, minimally invasive strategy for improving facial skin quality, by stimulation of collagen synthesis and tissue regeneration together with substantial hydration.

Results: This multimodal approach contributes to smoother, firmer and more radiant skin.

Conclusion: Through minimal invasive approaches, “no downtime“, skin regeneration can be achieved along with natural-looking skin glow.

Keywords: regeneration, regenerative aesthetics, platelet-rich plasma, non-cross-linked HA, CaHA, skin rejuvenation

COMPLEX MEDICAL DERMATOLOGY - PART 3

HIGH MOUNTAIN CLIMATOTHERAPY

Nikolaj K. Tsankov¹

¹ Acibadem- City Clinic, Tokuda Hospital Sofia, Bulgaria

Introduction: High mountain climatotherapy utilizes the therapeutic effects of altitude, clean mountain air, negative ions, phytoncides, and other environmental factors. Bulgaria has a long tradition of applying high mountain climatotherapy in dermatological diseases.

Materials and Methods: The historical and contemporary experience with high mountain climatotherapy in Bulgaria was reviewed. The first clinical observations were reported in 1961 by Professor Petar Popchristov in the Vihren area of the Pirin Mountains (2914 m above sea level). Subsequently, patients with chronic urticaria, atopic dermatitis, chronic eczema, and selected forms of pemphigus were treated in the Pirin, Rhodope, Vitosha, and Rila Mountains.

Results: High mountain environments provide a combination of altitude, air purity, and natural environmental factors, and are considered beneficial for patients with chronic inflammatory and allergic skin diseases. Currently, climatotherapy is conducted at Belmeken in the Rila Mountains (2050 m above sea level), predominantly in children with atopic dermatitis and chronic urticaria. Clinical results have been reported in national and international journals and presented at scientific congresses.

Conclusion: High mountain climatotherapy represents a longstanding complementary approach in the management of selected dermatological diseases and remains relevant in contemporary dermatological practice.

Keywords: climatotherapy, atopic dermatitis, chronic urticaria

EFFECTS OF SEMAGLUTIDE TREATMENT ON PSORIATIC LESIONS IN OBESE PATIENTS WITH TYPE 2 DM: ONE YEAR FOLLOW-UP

Jelena Petković-Dabić^{1,2}

¹ Skin and Venereal Diseases Clinic, University Clinical Centre of the Republic of Srpska, Banja Luka, The Republic of Srpska, Bosnia and Herzegovina

² Department of Dermatovenereology, Faculty of Medicine, University of Banja Luka, Banja Luka, The Republic of Srpska, Bosnia and Herzegovina

Introduction: Psoriasis is a systemic inflammatory disease frequently associated with obesity, type 2 diabetes mellitus (T2DM), and other cardiometabolic comorbidities. Glucagon-like peptide-1 (GLP-1) receptor agonists may provide therapeutic benefits beyond glycemic control.

Materials and Methods: Following a previous 12-week study demonstrating improvement in Psoriasis Area and Severity Index (PASI) scores, an open-label interventional follow-up was conducted. Five obese patients with psoriasis and T2DM receiving chronic metformin therapy were treated with semaglutide and followed for 12 months. Psoriasis severity and quality of life were assessed using the PASI and Dermatology Life Quality Index (DLQI), respectively.

Results: Following semaglutide treatment, PASI scores showed significant improvement. A significant improvement in DLQI was also observed after 12 months, indicating sustained clinical benefit and improved dermatological quality of life.

Conclusion: One-year treatment with semaglutide, in addition to standard antidiabetic therapy, was associated with sustained improvement in psoriasis severity and quality of life in obese patients with T2DM. These findings support further investigation of GLP-1 receptor agonists as a potential component of a dermometabolic therapeutic approach to psoriasis.

Keywords: psoriasis, type 2 diabetes mellitus, PASI, DLQI, semaglutide, GLP-1 receptor agonist

THE JAK REVOLUTION: TRANSFORMING CHILDHOOD ALOPECIA AREATA

Iva Blajić¹

¹ Sestre milosrdnice University Hospital Center, School of Medicine Catholic University of Croatia, Department of Dermatovenereology

Introduction: Alopecia areata (AA) is an immune-mediated disease characterized by non-scarring hair loss resulting from loss of immune privilege of the hair follicle. The disease is associated with considerable psychosocial burden and impaired quality of life. Dysregulation of the Janus kinase/signal transducer and activator of transcription (JAK/STAT) pathway is a central mechanism driving inflammation, leading to the development of targeted therapies with JAK inhibitors.

Materials and Methods: We present two adolescent patients, a 12-year-old boy and a 15-year-old girl, each with a 7-year history of alopecia totalis and concomitant moderate-to-severe atopic dermatitis. Both patients had persistent disease and were treated with upadacitinib, a selective JAK1 inhibitor, due to severe atopic dermatitis.

Results: Treatment resulted in complete scalp hair regrowth, with achievement of SALT 100 after 3 and 6 months of therapy, respectively. Both patients simultaneously experienced marked improvement in atopic dermatitis, achieving EASI 75-100. Substantial improvements were also noted in self-esteem, emotional well-being, and overall quality of life, as reported by the patients and their families.

Conclusion: These cases demonstrate the potential of selective JAK1 inhibition to induce complete hair regrowth in long-standing alopecia totalis while achieving excellent control of concomitant atopic dermatitis. The dual efficacy of upadacitinib highlights shared immunopathogenic mechanisms and supports the role of JAK inhibitors as a targeted therapeutic option in selected pediatric patients. Further studies are warranted to establish long-term efficacy and safety.

Keywords: Janus kinase/signal transducer and activator of transcription, alopecia areata, immunopathogenic mechanisms, pediatric patients

SUBACUTE CUTANEOUS LUPUS ERYTHEMATOSUS - HOW TO DIAGNOSE, HOW TO TREAT?

Miloš Nikolić^{1,2}

¹ Department of Dermatology and Venereology, University of Belgrade School of Medicine

² Clinic of Dermatology and Venereology, University Clinical Center of Serbia, Belgrade, Serbia

Subacute cutaneous lupus erythematosus (SCLE) is a distinct clinical subtype of lupus erythematosus (LE) characterized by a high degree of photosensitivity and a non-scarring, non-atrophic clinical course. Initially described in 1979, SCLE occupies an intermediate position in the lupus spectrum, presenting with prominent cutaneous manifestations while usually lacking severe internal organ involvement associated with systemic lupus erythematosus (SLE). It predominantly affects middle-aged women and may be associated with genetic markers such as the HLA-DR3 phenotype.

SCLE manifests in two primary morphological patterns: annular-polycyclic and papulosquamous (psoriasiform). Lesions typically occur symmetrically on photodistributed areas, including the shoulders, upper trunk, neck, and extensor surfaces of the arms, while the face is characteristically spared. Anti-Ro/SSA antibodies are present in over 75% of patients. Although approximately half may meet classification criteria for SLE, systemic involvement is usually mild, most frequently presenting as arthralgia or myalgia.

Drug-induced SCLE (DI-SCLE) accounts for at least 30% of cases, with common triggers including antihypertensives, proton pump inhibitors, and antifungal agents. Identifying and withdrawing the offending medication is essential.

Management centers on strict photoprotection, topical corticosteroids or calcineurin inhibitors for mild disease, and systemic antimalarials, particularly hydroxychloroquine. Refractory cases may require additional immunosuppressive therapy or systemic retinoids. Prognosis is generally favorable, with lesions resolving without permanent scarring, although post-inflammatory hypopigmentation may persist.

Keywords: SCLE, photoprotection, Anti-Ro/SSA antibodies, SLE

LASER-ASSISTED MANAGEMENT OF HIDRADENITIS SUPPURATIVA: FROM HAIR FOLLICLE TARGETING TO DISEASE MODIFICATION

Vesna Brishkoska Boshkovski^{1,2}

¹ Clinical Hospital Acibadem Sistina, Skopje, North Macedonia

² Faculty of Medical Sciences, Goce Delchev University, Shtip, North Macedonia

Introduction: Hidradenitis suppurativa (HS) is a chronic, relapsing inflammatory skin disease of the pilosebaceous unit, characterized by painful nodules, abscesses, and sinus tract formation, predominantly affecting intertriginous areas. Its pathogenesis involves follicular occlusion, dysregulated immune responses, microbiome alterations, and genetic and environmental factors. The substantial physical and psychosocial burden of HS often necessitates long-term, multimodal treatment.

Materials and Methods: Current evidence on laser and light-based therapies for HS was reviewed, focusing on their proposed mechanisms of action, clinical applications, and integration into contemporary treatment strategies.

Results: Laser and energy-based therapies have emerged as promising adjunctive treatment options for HS. Their potential mechanisms include selective destruction of hair follicles, reduction of bacterial load, and modulation of local inflammation. Different laser and light-based modalities may be considered according to disease phenotype, severity, anatomical location, and treatment objectives. These approaches may complement established medical and surgical therapies as part of an individualized multimodal strategy.

Conclusion: Laser and light-based therapies represent an evolving component of HS management, extending beyond hair follicle targeting toward potential disease modification. Further clinical studies are needed to define optimal treatment protocols, patient selection, and their long-term efficacy.

Keywords: hidradenitis suppurativa, acne inversa, treatment, laser, laser therapy

CLINICAL, ETIOLOGICAL AND EPIDEMIOLOGICAL ASPECTS OF DERMATOPHYTOSES IN R. MACEDONIA

*Agron U. Starova*¹

¹ Dermatology Polyclinic "Dermapraxis Dr. Starova" Skopje, Republic of Macedonia

Introduction. Dermatophytoses are superficial fungal skin infections caused by dermatophytes. The aim of this study was to give an overview of the most commonly isolated dermatophytic species and present the clinical, etiological and epidemiological aspects of dermatophytosis in the Republic of Macedonia.

Materials and Methods. The study was conducted in the Mycological Laboratory at the University Clinic for Dermatology, Faculty of Medicine in Skopje. During a 30-month period (2007-2009), a sample of 600 patients with dermatophytosis, either examined or hospitalized, was randomly selected.

Results. Among 1,742 patients with suspected dermatophytosis, infection of the skin, hair or nails was confirmed in 600 (34.44%). Tinea unguium (onychomycosis) was the most frequently diagnosed form (225 patients, 37.50%), followed by tinea pedis (115, 19.17%), tinea corporis (92, 15.33%), tinea capitis (91, 15.17%), tinea cruris (44, 7.33%), tinea manuum (18, 3%), tinea faciei (13, 2.17%) and tinea barbae (2, 0.33%). The most commonly isolated species were *Trichophyton rubrum* (293, 48.83%), *Microsporum canis* (120, 20%) and *Trichophyton mentagrophytes var. interdigitale* (101, 16.83%). Anthropophilic dermatophytes represented 72.5% of isolates. *Microsporum canis* was isolated in 73.63% of patients with tinea capitis, with cats and dogs being the main reported sources. *Trichophyton rubrum* was most prevalent in tinea unguium (69.7%), tinea cruris (65.91%) and tinea pedis (64.35%).

Conclusion. Anthropophilic dermatophytes, particularly *Trichophyton rubrum*, prevail in the Republic of Macedonia. Tinea unguium and tinea pedis are the most common forms. The increasing prevalence of *Microsporum canis* in children with tinea capitis represents an important epidemiological issue.

Keywords: dermatophytes, dermatophytoses, epidemiology

SEBORRHOEIC KERATOSIS OR MELANOMA- DERMOSCOPY INSIGHTS FOR ACCURATE DIAGNOSIS

Verche Todorovska¹, Emil Nikolov²

¹ PZU Derma Nova, Skopje, N. Macedonia

² University Medical Center, Ljubljana, Slovenia

Introduction: Seborrheic keratosis (SK) is one of the most common benign skin tumors and is usually recognized by characteristic dermoscopic features. However, atypical SK may mimic melanoma, while melanoma may also resemble SK, creating an important diagnostic pitfall. We present challenging cases illustrating both scenarios and the dermoscopic clues that aid differentiation.

Materials and Methods: A series of clinically suspicious pigmented lesions with overlapping features of SK and melanoma was evaluated using dermoscopy, and correlated with histopathology. Cases included atypical SKs mimicking melanoma and melanomas displaying typical SK characteristics.

Results: Several SKs showed alarming clinical and dermoscopic features, including asymmetry, hyperkeratosis, variegated pigmentation, ulceration, shiny white lines, and irregular vessels. In one equivocal lesion, histopathology confirmed SK with melanin incontinence and dermal melanophages. Conversely, four melanomas clinically resembled SK. Despite prominent SK features, dermoscopy revealed subtle melanocytic criteria, including pigment network, blue-black sign, blue-white veil, regression, irregular dots and clods, radial lines, pseudopods, and shiny white lines. These findings were often best appreciated at the lesion periphery after adequate immersion to overcome surface scale. A published series of 134 SK-like melanomas reported dermoscopic melanoma recognition in 82%, while 18% remained indistinguishable from SK.

Conclusion: SK-like melanoma remains a diagnostic challenge because classic SK features may coexist with subtle melanocytic criteria. Careful examination of the entire lesion, particularly its periphery, is essential. Lesions showing mixed SK and melanocytic features or persistent diagnostic uncertainty should undergo histopathological examination.

Keywords: seborrheic keratosis, dermoscopy, SK-like melanoma, melanoma mimicker

DERMATO-ONCOLOGY

COMBINED TARGETED THERAPY AND IMMUNOTHEPARY IN BRAF-MUTATED ADVANCED MELANOMA: PROGNOSTIC VALUE OF LDH

Mirjana Bakić¹

¹ Clinical Center of Montenegro, Clinical for Dermatovenerology, Medical Faculty
University of Montenegro

Introduction: To evaluate the efficacy of combined targeted therapy and immunotherapy in patients with BRAF-mutated melanoma and assess the prognostic significance of lactate dehydrogenase (LDH) activity.

Materials and Methods: This retrospective study included 68 patients (mean age 57.4 ± 13.6 years) with advanced melanoma treated at a tertiary centre between 2019 and 2024. Patients were divided into two groups: immunotherapy (nivolumab/pembrolizumab) and combined BRAF/MEK-targeted therapy (dabrafenib/trametinib or vemurafenib/cobimetinib). Clinical outcomes were analyzed according to LDH values.

Results: Median progression-free survival (PFS) was 15.97 months, while median overall survival (OS) was 38.57 months. No statistically significant differences were observed between treatment groups, although numerically longer survival was noted in the immunotherapy group. Elevated LDH activity was detected in 41% of patients and was more frequent among those receiving targeted therapy. Patients with normal LDH activity had significantly longer OS than those with elevated LDH activity (not reached *vs.* 16.6 months; $p=0.009$).

Conclusion: The established prognostic value of LDH was confirmed in our patient population. Patients with LDH activity within the reference range had significantly longer overall survival, underscoring LDH importance as a routine biomarker in clinical practice. Immunotherapy showed numerically better outcomes than combined BRAF/MEK therapy, highlighting the need for further prospective studies.

Keywords: BRAF-mutated melanoma, combined targeted therapy, immunotherapy, lactate dehydrogenase

INFANTILE HEMANGIOMAS - UNUSUAL MANIFESTATIONS AND TREATMENT DIFFICULTIES

Jana Kazandjieva¹

¹ Acibadem City Clinic - Tokuda University, Multidisciplinary Hospital for Active Treatment
EAD

Introduction: Dermatologists work closely with neonatologists and pediatricians in the field of infantile hemangiomas (IHs). Before treatment can begin, however, an accurate diagnosis must be made and the appropriate therapeutic approach selected. In 2014, the FDA approved systemic propranolol for children with IHs, placing dermatologists at the forefront of diagnosis, differential diagnosis, and treatment. Because only IHs respond to beta-blocker therapy, recognizing the various forms of IHs and their potential complications is essential.

Materials and Methods: The clinical forms of IHs, including hemangiomas with minimal or “arrested” growth, FACES and LUMBAR syndromes, and Cyrano nose, were considered, together with lesion location, shape, and number. The role of dermatoscopy and ultrasound in differential diagnosis was also evaluated.

Results: Ultrasound aids accurate differential diagnosis and clarification of the characteristics of IHs, congenital hemangiomas, pyogenic granulomas, nevus simplex, and angiokeratomas. Recognition of specific clinical forms and potential complications, including scarring, is important for selecting the appropriate therapeutic approach.

Conclusion: Selecting appropriate treatment requires a thorough medical history, differentiation of clinical forms, and dermatoscopic and ultrasound analysis. In severe cases, biopsy, histopathological staining with the specific glucose transporter 1 (GLUT1) marker, and possibly magnetic resonance imaging may be necessary to detect syndromic forms of IHs.

Keywords: children hemangiomas, systemic propranolol, ultrasonography, dermoscopy, glucose transporter type 1

HEREDITARY α -TRYPTASEMIA AND PERIPHERAL BLOOD KIT D816V MUTATION IN PATIENTS WITH PEDIATRIC MASTOCYTOSIS

*Olga Tockova*¹

¹ Department of Dermatovenereology, University Medical Centre Ljubljana, Slovenia

Introduction: Pediatric mastocytosis is a heterogeneous clonal mast cell disorder that usually presents with cutaneous involvement. While KIT p.D816V mutations and hereditary α -tryptasemia (H α T) are well-established markers in adult mastocytosis, their role in children remains incompletely understood. This study investigated the prevalence of germline α -tryptase, H α T, and KIT p.D816V mutation in peripheral blood leukocytes (PBL) and their association with clinical phenotype and systemic mast cell disease in children with cutaneous mastocytosis (CM).

Materials and Methods: A prospective cohort of 68 children with CM from a national referral center in Slovenia underwent α -tryptase genotyping using droplet digital polymerase chain reaction (ddPCR) and highly sensitive quantitative polymerase chain reaction (qPCR) for detection of the KIT p.D816V mutation in PBL.

Results: At least one α -tryptase-encoding allele was detected in 83.8% of patients, whereas no child had H α T. All patients with pruritus were α -tryptase carriers. KIT p.D816V was identified in 7/68 (10.3%) children and was significantly associated with maculopapular CM, particularly the monomorphic subtype (66.7%, $p = 0.002$). KIT p.D816V was also detected in a child with an isolated mastocytoma. More than 30% of KIT-positive children had systemic clonal mast cell disorders.

Conclusion: Germline α -tryptase, but not H α T, is common in pediatric mastocytosis. Sensitive detection of KIT p.D816V in PBL identifies children at increased risk of systemic mast cell disease, even with normal basal serum tryptase levels, supporting routine KIT screening in children with CM.

Keywords: hereditary alpha-tryptasemia, KIT p.D816V, mastocytosis, child

DERMOSCOPY IN ACTION - LESSONS FROM CLINICAL CASES

*Silvija Duma¹, Hristina Breshkovska¹, Ivana Dohcheva Karajovanov¹,
Elena Mircevska Arsovska¹, Julija Mitrova Telenta¹, Maja Dimova¹,
Anita Najdova¹, Viktor Simeonovski¹*

¹ University Clinic for Dermatology, Faculty of Medicine, Ss. Cyril and Methodius
University in Skopje, Republic of North Macedonia

Introduction: Dermoscopy is an indispensable tool in the modern evaluation of pigmented and non-pigmented skin lesions. Although diagnostic algorithms provide a structured approach, their application should be integrated with clinical assessment and individualized patient evaluation.

Materials and Methods: Several diagnostically challenging clinical cases were analyzed, with emphasis on the correlation between patient history, clinical examination, and dermoscopic findings. Particular attention was given to patient age, lesion location, onset, evolution, and atypical dermoscopic characteristics.

Results: The presented cases included melanomas with atypical clinical and dermoscopic features, a case of “vanishing melanoma,” and an atypical basal cell carcinoma. These cases demonstrated that potentially malignant lesions may not always conform to established diagnostic patterns. Careful recognition of warning signs and integration of clinical and dermoscopic information were essential for reaching the correct diagnosis.

Conclusion: Dermoscopy algorithms are valuable diagnostic guides but should not be applied mechanically. Clinical experience, critical reasoning, and individualized assessment remain essential for accurate diagnosis. Each lesion requires interpretation within its specific clinical context.

Keywords: dermoscopy, vanishing melanoma, clinical cases

SUPERFICIAL RADIOTHERAPY OF SKIN TUMORS: OUR EXPERIENCE

Bojana Spasić¹

¹ Clinic of Dermatovenereology, University Clinical Centre of Vojvodina, Novi Sad, Serbia

Introduction: Radiotherapy is an established treatment modality for selected malignant skin tumors. Superficial or orthovoltage radiotherapy enables targeted delivery of ionizing radiation to lesions located close to the skin surface while limiting exposure of adjacent healthy tissues.

Materials and Methods: Our experience with superficial radiotherapy in the treatment of skin tumors was reviewed, considering tumor histology, size, anatomical location, treatment intent, total radiation dose, and fractionation. Its role as definitive and adjuvant treatment was evaluated.

Results: Superficial radiotherapy is particularly suitable for tumors located within approximately 2-3 cm of the skin surface. For basal cell carcinoma and cutaneous squamous cell carcinoma, definitive radiotherapy commonly involves total doses of 50-60 Gy administered over 5-6 weeks, with reported 4- and 5-year local control rates of 86-96% and 58-94%, respectively. Highly radiosensitive tumors, including Kaposi sarcoma and primary cutaneous follicle center lymphoma, require lower doses and demonstrate excellent responses.

Conclusion: Superficial radiotherapy is an effective treatment option for selected skin tumors and has an important role in both definitive and adjuvant management, particularly when surgery is unsuitable or may result in significant functional or cosmetic impairment.

Keywords: superficial radiotherapy, skin tumors, BCC, SCC

Paraneoplastic Skin Signs: Early Recognition and Clinical Implications

Asja Prohić¹

¹ Department of Dermatovenereology, Sarajevo School of Science and Technology, Sarajevo, Bosnia and Herzegovina

Introduction: Paraneoplastic skin signs comprise a diverse group of cutaneous manifestations associated with underlying malignancy. In some patients, these findings may precede or represent the first clinical indication of an internal cancer, making their recognition important in dermatological practice.

Materials and Methods: The major paraneoplastic dermatoses were reviewed, with emphasis on their clinical presentation, proposed pathogenic mechanisms, and diagnostic and prognostic significance. The importance of recognizing characteristic cutaneous patterns in patients with suspected or established malignancy was considered.

Results: Paraneoplastic skin manifestations may present with diverse clinical features and can involve inflammatory, pigmentary, keratinization, vascular, or other cutaneous changes. Proposed mechanisms include immune cross-reactivity, dysregulated cytokine signaling, and systemic metabolic alterations. Recognition of characteristic patterns and their temporal relationship with systemic disease may facilitate earlier investigation and diagnosis of an underlying malignancy.

Conclusion: Paraneoplastic skin signs represent an important diagnostic opportunity in dermatology. Increased clinical awareness and early recognition may contribute to timely cancer diagnosis and appropriate management, highlighting the important role of dermatologists in multidisciplinary oncologic care.

Keywords: paraneoplastic skin signs, oncologic dermatology

BENIGN MELANOCYTIC LESIONS AND THE IMPORTANCE OF TOTAL-BODY 2 DERMOSCOPY

Andzelka Ilieva¹

¹ Private Clinical Hospital Zan Mitrev Clinic Skopje, North Macedonia

² Faculty of Medical Sciences, Goce Delchev University in Shtip, North Macedonia

Introduction: Benign melanocytic lesions represent a heterogeneous group frequently encountered in dermatological practice. Their clinical and dermoscopic features vary according to age, anatomical location, skin phototype, genetic background, and environmental factors. Although most nevi remain stable, some may demonstrate features overlapping with melanoma, creating diagnostic challenges, particularly in patients with multiple or atypical nevi.

Materials and Methods: The dermoscopic characteristics and diversity of benign melanocytic lesions were reviewed, with particular emphasis on total-body photography and sequential digital dermoscopic monitoring in patients with multiple nevi and increased melanoma risk.

Results: Dermoscopy improves lesion assessment by revealing morphological structures not visible to the naked eye. In patients with multiple or atypical nevi, comparison with the individual's predominant nevus pattern and longitudinal assessment provide additional diagnostic information. Total-body photography combined with sequential digital dermoscopy facilitates the identification of new lesions and subtle changes in pre-existing nevi. Monitoring lesions without clear criteria for immediate excision allows dynamic changes to become an additional diagnostic criterion, while documentation of stability may increase diagnostic confidence and reduce unnecessary excisions.

Conclusion: Comprehensive surveillance integrating clinical examination, dermoscopy, total-body photography, and sequential digital dermoscopy provides a valuable approach to patients with multiple or atypical nevi. This strategy may facilitate earlier melanoma detection while supporting selective excision of suspicious lesions.

Keywords: dermoscopy, benign melanocytic lesions, total-body dermoscopic surveillance, melanoma

METASTATIC MELANOMA 13 YEARS AFTER PRIMARY CUTANEOUS MELANOMA: IS IT POSSIBLE?

Zafirovik Z.¹, Noveski L.², Kostadinova-Kunovska S.³, Bogdanovska-Todorovska M.³, Jovanovikj R.³, Kadri E.⁴, Ristovski V.⁵, Ivanova M.⁵, Stojkovski I.⁵

¹ University Clinic for Dermatology, Skopje, North Macedonia,

² University Clinic for Plastic and Reconstructive Surgery, Skopje, North Macedonia,

³ Institute of Pathology, Faculty of Medicine, Ss. Cyril and Methodius University, Skopje, North Macedonia,

⁴ City General Hospital "8th September"-Digestive Surgery, Skopje, North Macedonia

⁵ University Clinic for Radiotherapy and Oncology, Skopje, North Macedonia

Introduction: Melanoma is an aggressive skin malignancy with high metastatic potential. Most recurrences occur within five years, whereas recurrence after more than 10 years is uncommon. We present a case of metastatic melanoma diagnosed 13 years after treatment of a primary cutaneous melanoma.

Materials and Methods: A 51-year-old woman underwent surgical excision of an ulcerated cutaneous melanoma arising in a dysplastic nevus. Histopathology showed a Breslow thickness of 6 mm, stage pT4bNoRoLoVo (stage IIC), without lymph node metastases. After a 13-year disease-free interval, CT revealed progressive intra-abdominal and hepatic lesions. Biopsy of an abdominal mass showed diffuse positivity for S-100, SOX10, and Melan-A, confirming metastatic melanoma.

Results: The patient received four cycles of combined immunotherapy with nivolumab and ipilimumab. Due to disease progression, second-line targeted therapy with vemurafenib and cobimetinib was initiated. During treatment, a pruritic exanthematous eruption developed as an adverse effect. Follow-up CT during the sixth treatment cycle demonstrated a significant therapeutic response, with near-complete disappearance of one metastatic lesion and marked regression of another cystic-solid lesion, including complete resolution of its solid component.

Conclusion: This case highlights the possibility of very late melanoma recurrence after a prolonged disease-free interval. Long-term clinical vigilance is important in patients with high-risk melanoma. The case also demonstrates the potential effectiveness of contemporary immunotherapy and molecularly targeted therapy in achieving substantial regression of metastatic disease.

Keywords: melanoma, neoplasm metastasis, immunotherapy, molecular targeted therapy

NATURAL DAYLIGHT PHOTODYNAMIC THERAPY (DL-PDT) FOR ACTINIC KERATOSES

*Ibro Beciri*¹

¹ DermaZuid de Kliniek voor huidaandoeningen en spataderen, Maastricht, Netherlands

Introduction: Photodynamic therapy (PDT) uses methyl aminolevulinate (MAL), which produces porphyrins in lesional skin. In the presence of oxygen, visible light activates these porphyrins, generating reactive oxygen species that induce apoptosis of target cells. Daylight PDT (DL-PDT) continuously activates MAL using natural daylight, avoiding the need for high-intensity artificial light.

Materials and Methods: The procedure includes removal of hyperkeratosis, application of a 1-mm layer of MAL cream with a 5-10-mm margin, covering with adhesive or aluminum foil, 30-minute incubation, and exposure to daylight. Indications include actinic keratoses (AK) of the face and scalp, superficial and nodular basal cell carcinoma when other treatments are unsuitable, and Bowen disease (*in situ* squamous cell carcinoma).

Results: Scandinavian studies demonstrated that DL-PDT is as effective as conventional PDT, with significantly less pain. COMET 1 and 2 phase III studies showed similar complete lesion clearance after 3 months in sunny and cloudy conditions, with 96-97% of cleared lesions remaining clear after 6 months. Eighty-two percent of patients reported no pain, adverse effects were generally mild, and cosmetic outcomes and willingness to repeat treatment were high.

Conclusion: Daylight PDT represents a highly effective, well-tolerated, and cosmetically favorable treatment option for actinic keratoses and selected non-melanoma skin cancers, with high patient acceptance and minimal pain compared with conventional methods.

Keywords: photodynamic therapy, actinic keratosis, skin neoplasms, basal cell carcinoma, squamous cell carcinoma

FORUM FOR YOUNG DERMATOVENEREOLOGISTS

HIDDEN ENVIROMENTAL TRIGGER: CATERPILLAR-INDUCED ALLERGIC DERMATITIS IN PEDIATRIC PATIENTS

Vukovska Rebeka¹, Nikolovska Suzana¹, Duma Silvija¹, Breshkovska Hristina¹, Elena Mirceska Arsovska¹, Ivana Dohcheva Karajovanov¹

¹ University Clinic for Dermatology, Faculty of Medicine, Ss. Cyril and Methodius University in Skopje, Republic of North Macedonia

Introduction: Caterpillar-induced dermatitis is an uncommon and underrecognized form of cutaneous lepidopterism in children. Exposure to urticating caterpillar setae may elicit an acute inflammatory eruption with variable morphology, potentially mimicking common pediatric dermatoses. Establishing a temporal relationship between environmental exposure and symptom onset is essential for accurate clinical recognition.

Materials and Methods: We describe the cases of two children, aged five and two years, who developed intensely pruritic cutaneous eruptions shortly after direct contact with caterpillars. Clinical findings, exposure history, treatment, and outcomes were evaluated.

Results: A five-year-old child presented with confluent erythematous plaques involving the face and neck, accompanied by papulovesicular lesions, whereas a two-year-old developed scattered erythematous papules over the trunk and extremities. No systemic manifestations occurred. The clinical findings and close temporal association with caterpillar exposure supported the diagnosis of caterpillar-induced allergic dermatitis. Both patients were treated with medium-potency topical corticosteroids and oral antihistamines, with rapid improvement and complete resolution within one week, without sequelae.

Conclusion: The clinical heterogeneity of caterpillar dermatitis may lead to diagnostic confusion with papular urticaria, allergic contact dermatitis, and insect bite hypersensitivity. Caterpillar-induced dermatitis should be considered in the differential diagnosis of acute pruritic eruptions in children, particularly when exposed skin is predominantly affected. A meticulous environmental history may provide a decisive diagnostic clue, while prompt recognition enables effective conservative treatment and favorable outcomes.

Keywords: caterpillar dermatitis, lepidopterism, pediatric dermatology, dermatitis, allergic, environmental exposure, pruritus

SCC IN CHRONIC INFLAMMATION: A CASE REPORT OF A PATIENT WITH LE/LP OVERLAP SYNDROME

Ivana Tusheva¹, Vesna Trajkova¹, Andrej Petrov²

¹ Department of Dermatology, City General Hospital “8th September” Skopje, North Macedonia

² Department of Dermatology, Clinical Hospital Acibadem Sistina, Skopje, North Macedonia

Introduction: Lichen planus (LP) and lupus erythematosus (LE) are chronic inflammatory dermatoses that may rarely coexist as an overlap syndrome. Persistent cutaneous inflammation has also been associated with an increased risk of developing squamous cell carcinoma (SCC). We present a case of SCC arising in the setting of longstanding LE/LP overlap syndrome.

Case presentation: A middle-aged man presented with a 20-year history of chronic cutaneous lesions clinically demonstrating features of both LP and LE. A previous skin biopsy demonstrated histopathological features characteristic of both LP and LE, supporting the diagnosis of LE/LP overlap syndrome. The patient declined systemic treatment for many years. Five years prior to the current presentation, the patient underwent surgical excision of a lesion, with histopathology confirming SCC arising within chronically inflamed skin. Ten months before the present evaluation, new lesions clinically suspicious for SCC developed on the background of longstanding inflammatory lesions. Surgical excision was performed, and histopathological examination again confirmed SCC. Following surgery, treatment with hydroxychloroquine was initiated for the underlying inflammatory disease. During subsequent follow-up, the existing inflammatory lesions remained clinically stable, with no new lesions suspicious for SCC observed.

Conclusion: This case highlights the potential association between longstanding cutaneous inflammation and the development of SCC in patients with LE/LP overlap syndrome. Regular dermatological surveillance and adequate control of chronic inflammation may be important for early detection and prevention of further malignant transformation.

Keywords: LE/LP overlap syndrome, SCC, chronic inflammation

E-POSTER ABSTRACTS

DRUG-INDUCED SUBACUTE CUTANEOUS LUPUS ERYTHEMATOSUS (DI-SCLE) WITH ERYTHEMA MULTIFORME-LIKE CLINICAL PRESENTATION ASSOCIATED WITH CINEDIL THERAPY

Dimoska I.¹, Pollozhani N.^{1,2}

¹ University Clinic for Dermatology, Skopje, Republic of North Macedonia

² Faculty of Medicine, Ss. Cyril and Methodius University in Skopje, Republic of North Macedonia

Introduction: Drug-induced subacute cutaneous lupus erythematosus (DI-SCLE) is a rare autoimmune reaction to medications, typically presenting with photosensitive lesions. We report a case of cinedil-associated erythema multiforme (EEM)-like features. **Case Report:** A 66-year-old female patient had been receiving cinedil since the end of March 2026 for dizziness. In early July, while receiving therapy and during sun exposure on vacation, she developed papular and vesicular lesions, initially involving photoexposed areas, followed by dissemination to the trunk, extremities, and face, accompanied by mild pruritus. Due to progression of the skin lesions, she was admitted to the University Clinic of Dermatology on July 25, 2026. Dermatological examination revealed disseminated annular erythematous lesions, confluent into larger plaques on the trunk and femoral regions, with erythema multiforme-like morphology, together with vesiculobullous lesions localized to the upper arms, presternal, and interscapular regions, as well as malar erythema and edema. Immunological testing demonstrated positive IgG autoantibodies against SSA/Ro60kD, SSA/Ro52kD, and SSB. A skin biopsy was also performed, taken from an erythema multiforme-like lesion, with histopathological findings supportive of an EEM-like pattern. Treatment included systemic and topical corticosteroids, antihistamines, rehydration, gastroprotection, antiseptic and topical antibiotic therapy, resulting in significant clinical improvement.

Conclusion: The temporal association with cinedil exposure, photosensitive distribution of the lesions, and positive anti-SSA/SSB autoantibodies support the diagnosis of DI-SCLE. The clinical presentation showed EEM-like features, emphasizing the importance of recognizing drug-induced photosensitive dermatoses with atypical and potentially severe clinical presentations and initiating appropriate treatment promptly.

Keywords: drug-induced subacute cutaneous lupus erythematosus, cinedil, photosensitivity, anti-SSA, anti-SSB, drug-induced lupus

THE USE OF GROWTH FACTOR-BASED THERAPY IN HEALING ACCELERATION IN THE IMMEDIATE POST-CO₂ LASER PERIOD: A SPLIT-FACE CASE REPORT

Stefan Vasilevski¹, Margarita Peneva², Viktor Simeonovski¹

¹ University Clinic for Dermatology, Ss. Cyril and Methodius University in Skopje - Faculty of Medicine

² University Clinic for Plastic and Reconstructive Surgery, Ss. Cyril and Methodius University in Skopje - Faculty of Medicine

Introduction: Ablative fractional CO₂ laser treatment offers significant improvements in skin structure. However, it is associated with considerable erythema, inflammation and discomfort during the initial healing period. Growth factors (GFs) - bioactive peptides that stimulate cellular repair - may offer an effective adjunctive therapy to enhance wound healing and reduce post-treatment recovery time. **Objectives:** To assess the efficacy of topical growth factor therapy in healing acceleration in the immediate post-CO₂ laser period using a split-face design.

Materials and Methods: Two female patients underwent full-face fractional CO₂ laser resurfacing. Both sides of the face received standard post-laser care. One side was additionally treated with a GFs-enriched face masks immediately, and at 12 hours period intervals. Dermoscopic examinations evaluated post-laser erythema and vascular patterns. Subjective pain levels (sharp, pulsating, burning) were assessed using modified Patient POSASs Scale. A modified Observer POSAS scale evaluated erythema, vascularity, thickness, and stiffness of the treated areas.

Results: Dermoscopy revealed no major differences in skin architecture, however, erythema was visibly reduced on the GF-treated side across all observation points. Vascular prominence and perifollicular redness were also less marked. Patient-reported outcomes showed lower pain scores on the GF-treated side at all time intervals indicating reduced discomfort during acute healing phase. The observer scores consistently favored the GF-treated side.

Conclusion: The application of topical GFs therapy immediately after CO₂ laser demonstrated mild to moderate improvements in erythema, pain perception, and early scar characteristics. While limited to two cases, these findings support the potential role of GFs in enhancing post-laser recovery.

Keywords: growth factor-based therapy, CO₂ laser, post-laser recovery

EARLY PATIENT-REPORTED OUTCOMES FOLLOWING SEBOSELECTIVE 1726-nm LASER TREATMENT FOR MODERATE-TO-SEVERE ACNE: A PROSPECTIVE EVALUATION DURING THE INITIAL THREE-TREATMENT COURSE

Stefan Vasilevski^{1,2}, Natasha V. Markovska², Viktor Simeonovski¹

¹ Ss. Cyril and Methodius University in Skopje, Faculty of Medicine, Skopje

² La Bellezza Dermatology & Laser Center

Introduction: The 1726-nm seboselective laser is a novel energy-based treatment for acne vulgaris that selectively targets sebaceous glands while preserving surrounding tissue. The aim of this study was to evaluate early patient-reported changes in sebum production, acne activity, skin appearance, and psychosocial impact during the initial three-session course of 1726-nm laser treatment.

Materials and Methods: Seven patients with Fitzpatrick skin types II-IV and moderate-to-severe acne vulgaris underwent treatment with the 1726-nm seboselective laser at baseline, day 30, and day 60. Adjunctive doxycycline (100 mg daily for 10 days) and an oral antihistamine for 7 days were prescribed after first session to minimize inflammatory flare-ups. Outcomes were assessed for the period between first and the third treatment using a modified Oily Skin Impact Scale (OSIS) and patient-reported ratings of sebum reduction, acne flare frequency, and skin shininess.

Results: All patients reported clinically meaningful improvement by completion of the third treatment. Mean patient-reported improvement scores (0-10) were 8.1 for sebum reduction, 8.0 for reduction in acne flare-ups, and 8.4 for reduction in skin shininess. Improvements were consistently observed across all modified OSIS domains, indicating reduced psychosocial burden and improved perception of skin cleanliness, oiliness, and acne-proneness. Treatments were well tolerated; no patient experienced acne purging during the courses.

Conclusion: The 1726-nm seboselective laser demonstrated favorable early patient-reported outcomes, with improvements in sebum production, acne activity, skin appearance, and quality of life during the initial treatment course. These preliminary findings provide the first reported clinical experience with this technology in North Macedonia.

Keywords: laser treatment, acne, 1726-nm seboselective laser

ENOXAPARIN-ASSOCIATED GENERALIZED POLYMORPHIC DRUG ERUPTION: A CASE REPORT

*Gabriela Chadevska², Kujtime Rushiti Mehmeti¹, Suzana Nikolovska^{1,2},
Nebojsa Peshikj¹*

¹ University Clinic for Dermatology - Skopje

² Ss. Cyril and Methodius University, Faculty of Medicine – Skopje

Introduction: Cutaneous adverse drug reactions to low-molecular-weight heparins are uncommon and usually present as localized injection-site reactions. Generalized polymorphic eruptions associated with enoxaparin are rare and may pose a diagnostic challenge. Case report: A 71-year-old man presented with progressive edema of the left hand extending proximally along the upper extremity. Markedly elevated D-dimer levels (approximately 9,000 ng/mL) raised suspicion of venous thrombosis, and subcutaneous enoxaparin was initiated. After three days, the dose was escalated. Approximately three days later, he developed diffuse erythema, intense pruritus, dyspnea, and a generalized polymorphic eruption comprising urticaria-like plaques, targetoid erythema multiforme-like lesions, and non-blanching palpable purpura involving the trunk, neck, and proximal extremities. Laboratory investigations showed peripheral eosinophilia, mild inflammatory activity, persistently elevated but decreasing D-dimer levels, and normal liver enzymes. Skin biopsy demonstrated epidermal atrophy, mild subepidermal edema, and a predominantly lymphocytic inflammatory infiltrate with eosinophils, without histopathological evidence of vasculitis or a spongiotic/eczematous pattern suggestive of allergic contact dermatitis. Doppler ultrasonography showed no venous thrombosis. Enoxaparin was discontinued and replaced with rivaroxaban. Systemic corticosteroids, antihistamines, and topical therapy resulted in rapid clinical improvement, with cessation of new lesion formation within one week.

Conclusion: This case illustrates a rare drug reaction to enoxaparin. The temporal association with enoxaparin exposure and dose escalation, peripheral eosinophilia, supportive histopathology, absence of another identifiable trigger, and prompt improvement after drug withdrawal support a probable enoxaparin-associated generalized polymorphic drug eruption. Early recognition is essential for timely discontinuation and appropriate anticoagulant substitution.

Keywords: enoxaparin, drug eruption, cutaneous hypersensitivity, erythema multiforme -like eruption, eosinophilia, purpura

FRACTIONAL ERBIUM-YAG LASER 2940 NM COMBINED WITH SUBCISION FOR THE TREATMENT OF ATROPHIC ACNE SCARS: A CASE REPORT

Gordana Lazarova Stojanovska^{1,2}, Natasa Teovska Mitrevska¹, Mirela Vasileva²

¹ Re-Medika Private General Hospital, Dermatology Department, Skopje, North Macedonia

² Faculty of Medical Sciences, Goce Delchev University, Shtip, North Macedonia

Introduction: Atrophic acne scars are common sequelae of acne vulgaris and may persist despite medical treatment. Their complex morphology, including rolling and boxcar scars, often requires a multimodal approach. Subcision releases fibrotic septae, while fractional Er:YAG 2940 nm laser therapy promotes controlled ablation and dermal remodeling.

Materials and Methods: We present the case of a patient with clinically significant atrophic acne scars, predominantly rolling and boxcar scars with fibrotic tethering. Subcision was performed using a Nokor-type needle, followed by ablative fractional Er:YAG laser resurfacing (SP Dynamis, Fotona, Slovenia) using the FSO1 handpiece at 60 J/cm² in very-long-pulse mode, Turbo 4, with four stacked pulses. Topical 10% lidocaine was applied before treatment. Clinical improvement was assessed using standardized photography and acne scar grading by two blinded observers on a four-point scale. Patient satisfaction and adverse effects were also recorded.

Results: Combined treatment produced clinically significant improvement in scar depth, skin texture, and overall appearance. Rolling and boxcar scars showed progressive improvement during follow-up. Patient satisfaction was high, while treatment-related adverse effects were transient and manageable.

Conclusion: Combining subcision with fractional Er:YAG 2940 nm laser resurfacing may be an effective approach for selected patients with complex atrophic acne scars. Subcision addresses fibrotic tethering, while fractional laser therapy promotes tissue remodeling and neocollagenesis. Their complementary mechanisms may enhance clinical improvement in comparison with either technique alone.

Keywords: atrophic acne scars, subcision, Er:YAG laser, fractional laser, acne vulgaris, skin resurfacing

COLCHICINE AS A POTENTIAL THERAPEUTIC OPTION IN CHRONIC SPONTANEOUS URTICARIA: A CASE STUDY

Kristina Trpcheva Stojkov¹, Sofija Peshova¹, Irena Dimitrovska¹, Vesna Trajkova¹

¹ City General Hospital "8th September", Department of Dermatology

Introduction: Chronic spontaneous urticaria (CSU) is defined as a condition that occurs spontaneously in the presence of hives daily/almost daily for at least six weeks. In patients with CSU, antithyroid peroxidase antibodies (TPO) are detected in about 25-30% of cases. This report recognizes the challenges experienced during the diagnosis, management and therapy of CSU.

Materials and Methods: A 15-year-old patient was presented with CSU-like symptoms, including hives and swelling in the mouth and eyelids. Numerous analyses were conducted to monitor the condition regularly, including hematological analyses, pathohistological findings, and TPO-antibodies detection. Treatment with systemic antihistamines, corticosteroids, leukotriene receptor antagonists and antimalarial drugs was launched upon admission.

Results: In 2024, the present skin lesions were few and lasted 48-72 hours, the swelling in the mouth and eyelids was occasional. The complete blood count indicated normal parameters, the ASST (autologous serum skin test) was positive, IgE antibodies, TPO-antibodies and TSH (thyroid-stimulated hormone) were elevated, suggesting Hashimoto's disease. The pathohistological findings were nonspecific. In 2025, the patient complained of a worsened condition without further change in clinical analysis. Food and lactose intolerance tests were performed, resulting in lactose positivity. An attempt was made to use an antihistamine, omalizumab, as the second option and the third effort involved cyclosporine, as well as a strict lactose-free diet. The desired outcome was achieved after colchicine initiation.

Conclusion: Although standard therapy is rarely ineffective, in this case a therapeutic response to colchicine as an off-label drug was achieved, thus making this case worth recounting.

Keywords: chronic spontaneous urticaria, colchicine, ASST

TREATMENT OF REFRACTORY PALMOPLANTAR PUSTULOSIS WITH A COURSE OF ISOTRETINOIN

Perovska Aleksandra¹

¹ Health Center Skopje, Polyclinic Gjorche Petrov, N. Macedonia

Introduction: Palmoplantar pustulosis is a chronic inflammatory skin disorder with a relapsing course, characterized by sterile pustules involving the palms and soles. Although it may occur in association with psoriasis, it is considered a distinct and complex clinical entity. Despite numerous therapeutic options (topical steroids, calcipotriol, phototherapy, acitretin, methotrexate, and cyclosporine), treatment outcomes remain suboptimal, while newer biologic therapies are not widely accessible.

Materials and Methods: A 68-year-old woman presented with an exacerbation of palmoplantar pustulosis, diagnosed 13 years earlier, characterized by painful pustules and scaly, fissured plaques affecting the palms and soles. The lesions were accompanied by severe pruritus and pain. Phototherapy, acitretin, and a combination of topical treatments had been used, but none resulted in a satisfactory therapeutic response. While exploring other treatment options, we identified several studies on isotretinoin for the treatment of pustulosis. After discussion with the patient, isotretinoin was initiated at a dose of 20 mg once daily.

Results: Satisfactory clinical improvement was observed at the two-week follow-up. By the fourth month, near-complete resolution of the lesions, pain, and pruritus had been achieved, and treatment was discontinued. No adverse effects were noted. The patient expressed satisfaction with the therapeutic plan and remained symptom-free for one year.

Conclusion: In our case, isotretinoin was associated with a favorable clinical outcome compared to acitretin. When standard therapies fail, off-label use of isotretinoin may represent an accessible alternative treatment for refractory palmoplantar pustulosis.

Keywords: palmoplantar pustulosis, isotretinoin, acitretin

BEYOND THE PLAQUES: CUTANEOUS T-CELL LYMPHOMA MIMICKING A DECADE-LONG PSORIASIS-LIKE COURSE

Pesic Anastasija¹, Pesic N^{1,2}, Nikolovska S.^{1,2}, Simeonovski V.^{1,2}, Dimova M.^{1,2}, Rusiti K.^{1,2}, Dohcheva Karajovanov I.^{1,2}, Damevska K.^{1,2}

¹ University Clinic for Dermatology, Skopje, North Macedonia

² Faculty of Medicine, Skopje, North Macedonia

Introduction: Cutaneous T-cell lymphomas (CTCLs) may closely mimic chronic inflammatory dermatoses, creating diagnostic challenges. Psoriasiform presentations can be particularly misleading when clinical and initial histopathological findings suggest benign disease. We report a longstanding psoriasis-like dermatosis that progressively transformed and was ultimately diagnosed as primary cutaneous anaplastic large cell lymphoma (pcALCL).

Materials and Methods: A retrospective review of longitudinal dermatological and hematological records was performed, including clinical evolution, treatment response, serial skin biopsies, histopathology, immunohistochemistry, T-cell clonality assessment, and subsequent systemic treatment.

Results: A male patient with recurrent psoriasiform lesions had been treated as psoriasis vulgaris for more than a decade. Therapy included topical corticosteroids and keratolytics, narrowband UVB phototherapy, and systemic acitretin, with only transient or incomplete responses. Over time, lesions became increasingly treatment-refractory, with persistent infiltrated plaques and tumor-like lesions. Initial biopsies were inconclusive. Continued progression prompted repeated biopsies and extended diagnostic evaluation, revealing a clonal T-cell lymphoproliferative process. Multidisciplinary assessment established the diagnosis of pcALCL. Six cycles of CHOP chemotherapy resulted in clinical remission.

Conclusion: Longstanding psoriasiform disease with progressive infiltration, tumor development, treatment refractoriness, or clinicopathological discordance should raise suspicion for CTCL. This case emphasizes the importance of longitudinal surveillance, repeated biopsies, and integrated clinicopathological assessment. As the disease evolves, the diagnosis must evolve with it.

Keywords: cutaneous T-cell lymphoma, psoriasis, anaplastic large cell lymphoma, skin neoplasms, diagnostic errors

CLINICAL AND MOLECULAR CHARACTERIZATION OF KRT14-RELATED EPIDERMOLYSIS BULLOSA SIMPLEX: A LONGITUDINAL CASE REPORT

Pesic Anastasija¹, Duma S.^{1,2}, Dohcheva Karajovanov I.^{1,2}, Nikolovska S.^{1,2}, Simeonovski V.^{1,2}, Mircevska E. A.^{1,2}, Breskovska H.^{1,2}, Najdova A.^{1,2}, Todorovski B.^{2,3}

¹ University Clinic for Dermatology, Skopje, North Macedonia

² Faculty of Medicine, Skopje, North Macedonia

³ Institute for Transfusion Medicine, Skopje, North Macedonia

Introduction: Epidermolysis bullosa simplex (EBS) is an inherited skin-fragility disorder characterized by recurrent blistering and erosions after minor trauma. When histopathology is inconclusive, molecular testing may be essential for accurate classification. We report the long-term diagnostic and clinical course of a patient with KRT14-related EBS from the neonatal period to 2026.

Materials and Methods: A longitudinal case review was performed using pediatric and dermatological records, histopathology, molecular genetic testing, serial clinical assessments, and photographic documentation.

Results: Blistering began during the neonatal period, initially affecting the fingers and feet, followed by recurrent disseminated vesiculobullous lesions. In 2015, two skin biopsies were performed. The first was inconclusive, while the second showed a subepidermal blister with dermal inflammation and occasional eosinophils. Differential diagnoses included incontinentia pigmenti and epidermolysis bullosa. No extracutaneous involvement was identified. Molecular analysis revealed a heterozygous KRT14 c.374G>A (p.Arg125His) variant. Both parents had wild-type KRT14, indicating a *de novo* variant. Long-term follow-up showed persistent recurrent blistering. In 2026, lesions at different stages were observed, including tense blisters, erosions, excoriations, crusts, and hemorrhagic crusts. Treatment remained supportive, including emollients, barrier-repair therapy, antiseptics, wound care, and topical antimicrobials when indicated.

Conclusion: This case demonstrates the diagnostic evolution of EBS from neonatal blistering and inconclusive histopathology to molecular confirmation of KRT14-related disease. Genetic testing is valuable in persistent inherited blistering disorders, while individualized long-term skin and wound care remains essential.

Keywords: epidermolysis bullosa, keratin-14, genetic testing, skin biopsy, blister, follow-up studies

BEYOND THE DOPPLER: THE SKIN REMEMBERS: LONG-TERM CUTANEOUS CHANGES AFTER HEALING OF A VENOUS ULCER IN A PATIENT WITH CEAP CLASS C5

Pesic Anastasija¹, Dohcheva Karajovanov I.^{1,2}, Nikolovska S.^{1,2}, Duma S.^{1,2}, Simeonovski V.^{1,2}, Mircevska E. A.^{1,2}, Breshkovska H.^{1,2}, Najdova A.^{1,2}, Todorovski B.^{2,3}

¹ University Clinic for Dermatology, Skopje, North Macedonia,

² Faculty of Medicine, Skopje, North Macedonia

³ Institute for Transfusion Medicine, Skopje, North Macedonia

Introduction: Chronic venous insufficiency may cause persistent skin changes long after ulcer healing. This case highlights the skin as evidence of previous venous and microcirculatory injury despite reassuring vascular imaging.

Materials and Methods: We report the longitudinal course of a male patient with advanced chronic venous insufficiency and a healed venous ulcer, classified as Clinical-Etiological-Anatomical-Pathophysiological CEAP C5. Clinical findings, serial photographs, treatment history, and duplex Doppler ultrasound examinations from 2019-2026 were reviewed.

Results: After ulcer healing, the patient showed persistent hyperpigmentation, eczematous changes, lipodermatosclerosis, and scattered telangiectasias, without recurrent ulceration. Treatment included topical and dermatological therapy, venotonic agents, compression stockings, and antiplatelet/anticoagulant therapy when indicated. The latest duplex Doppler ultrasound showed normal venous flow, without deep venous thrombosis or significant reflux, despite persistent skin changes.

Conclusion: This case demonstrates a discordance between reassuring contemporary vascular imaging and persistent dermatological signs of previous chronic venous insufficiency. Normal duplex ultrasonography may occasionally be observed in patients with healed venous ulcers. We hypothesize that preserved function of the larger veins may coexist with lasting microcirculatory and capillary damage in the skin. A healed ulcer closes the wound but does not erase the biological footprint of chronic venous disease. Long-term follow-up should therefore combine vascular imaging with careful skin examination and clinical history.

Keywords: chronic venous insufficiency, varicose ulcer, lipodermatosclerosis, hyperpigmentation, doppler ultrasonography, compression stockings

MENTAL HEALTH IN DERMATOLOGICAL PATIENTS WITH CLINICAL LOOK INTO PATIENTS WITH ACNE

Renata Kostadinovska¹

¹ Goce Delchev University in Shtip, North Macedonia

Introduction: Acne vulgaris causes erythematous papulopustular lesions in active stage and often leave behind residual scarring and pigmentation. Its onset in adolescence may add to the emotional and psychological challenges experienced during this period. Acne vulgaris is one of the most common skin diseases worldwide, with a prevalence ranging from 20% to 95%. Given the effect of acne on psychological well-being, investigating this relationship is important. This review aimed to synthesize the main findings on the relationship between acne, self-esteem, and mental health. **Case report:** The clinical case presented here is an indicator of the importance of mental awareness when considering the relationship between acne vulgaris and the mental health of dermatological patients. Findings from many studies indicate that patients with acne experience more mental health disorders, with subjective perceptions of acne being associated with depression, anxiety, and incapacity. Females tend to have lower self-esteem, and their assessments vary depending on the evaluation method used. These results clarify the relationship between acne, self-esteem, and mental health. Furthermore, they provide evidence of factors that may increase vulnerability to psychological impacts associated with acne. In conclusion, the literature emphasizes the importance of ongoing research on acne, its impact on self-esteem, and its relationship with other psychological dimensions. Although acne is not lethal, it can be disabling, can cause suffering, and negatively affect daily functioning. Effective treatment of this condition requires an integrated approach that combines medical and psychological care.

Keywords: acne, self-esteem, mental health

HYDROXYUREA-ASSOCIATED NON- MELANOMA SKIN CANCER: A CASE REPORT

Simonoska J¹, Zdraveska N¹, Neloska L¹

¹ PHI Specialized Hospital for Geriatric and Palliative Medicine “13th November” in Skopje

Introduction. Hydroxyurea is a first line cytoreductive agent used in the long-term management of myeloproliferative neoplasms, including polycythemia vera, essential thrombocythemia, and primary myelofibrosis. Prolonged therapy is associated with cutaneous adverse events, most notably an increased risk of non-melanoma skin cancers, particularly squamous cell carcinoma. Mechanisms include inhibition of ribonucleotide reductase, impaired DNA repair, somatic mutations, and synergy with ultraviolet radiation. Advanced age, higher cumulative doses, and longer treatment duration further increase this risk. **Description of the case.** We report the case of a 72- year-old man with a myeloproliferative disorder treated continuously with hydroxyurea for ten years. He developed two squamous cell carcinomas on the face, one in 2024 and one in 2025, both treated by surgical excision. This case aligns with observations that hydroxyurea-associated squamous cell carcinomas typically arise after prolonged exposure, predominantly on sun exposed sites such as the face, and may occur as sequential lesions. The case illustrates the cumulative oncogenic risk of long-term hydroxyurea therapy in elderly patients.

Conclusion: This case highlights the importance of systematic dermatologic surveillance in patients on long-term hydroxyurea. Regular skin examinations, photoprotection counseling, and prompt biopsy of suspicious lesions are essential for early detection. Multidisciplinary care involving hematologists and dermatologists should be standard. Clinicians must maintain a high index of suspicion for non-melanoma skin cancer and consider treatment modification when recurrent or aggressive lesions develop.

Keywords: hydroxyurea, non-melanoma skin cancer, squamous cell carcinoma, myeloproliferative neoplasms, dermatology