Abstract N°: 361

Oxygen-enriched oleic matrix in the treatment of chronic venous leg wounds

Tanja Batinac[1, 2], Sandra Peternel*[3], Boris Reinić[2], Maja Radić[2], Marija Piplica[2], Davor Jurišić[4], Marin Marinović[1, 2, 4]

[1]Faculty of Medical Sciences, University of Rijeka, Department of Clinical medical sciences, Rijeka, Croatia
[2]Clinical Hospital Center Rijeka, Department of undersea and hyperbaric medicine, Rijeka, Croatia
[3]Clinical Hospital Center Rijeka, Department of dermatovenereology, Rijeka, Croatia
[4]Clinical Hospital Center Rijeka, Department of surgery, Rijeka, Croatia

Introduction & Objectives: Venous leg ulcers (VLUs) are one of the most common ulcers of the lower extremity linked to multiple complications. VLU could cause a significant socioeconomic burden to the healthcare system. In addition, VLU could have a significant impact on quality of life of the affected individual. VLU is commonly associated with post-thrombotic syndrome, advanced chronic venous disease, varicose veins, and venous hypertension, and has a high recurrence rate. Recalcitrant VLU shows prolonged healing time with advanced age, obesity, nutritional deficiencies, deep venous thrombosis, preexisting venous disease, and larger wound area. Reactive oxygen species play a significant role in chronic wound healing process due to antimicrobial effect, enhanced oxygenation, angiogenesis and granulation tissue and epithelization stimulation. Oxygen-enriched oil-based products provide continuing delivery of reactive oxygen species into the wound. We report our experience using an oxygen-enriched oil-based products in patients with treatment recalcitrant VLU.

Materials & Methods: Prior to referral to Department of undersea and hyperbaric medicine the patients have been treated for VLU and associated complications during the period of two to ten years. Altogether, six patients with therapy recalcitrant VLU and one with radiation induced ulcer following the treatment of squamous cell carcinoma developing in a chronic leg ulcer due to chronic venous insufficiency, were initially treated with a standard wound treatment including: infection control, debridement and microbial load control, and dressings to provide a moist wound environment, in addition to compression treatment. Venous insufficiency was confirmed by color doppler and arterial involvement was excluded by MSCT angiography. Following initial improvement on standard treatment, no subsequent improvement was noted. Patients were, subsequentially, treated with oxygen-enriched oil-based products during initial 6-week period. The oxygen-enriched oil-based dressings were applied 3 times per week on wound bed and perilesional skin in addition to secondary dressing according to exudate level.

Results: Significant improvement was noted during 6 weeks follow-up period, resulting in acceleration of the healing process, reduction in ulcer size and depth, and infection control. We have detected no significant adverse reactions except eczema associated with itching, pruritus and maceration of surrounding skin, in one patient, following the two weeks treatment, that regressed after 2 days treatment with betamethasone cream, and no recurrence following continuing treatment. The adverse reaction occurred during the exacerbation of chronic cardiac insufficiency associated with significant bilateral leg oedema and exudation.

Conclusion: According to our experience, oxygen-enriched oil-based product are easy to apply, effective and safe option for treating therapy recalcitrant VLU.

Abstract N°: 1194

ServEB: Integrating clinical, morphological and molecular information using data science and AI to optimize clinical research and care in Epidermolysis bullosa

Bauer Johann*[1], Geroldinger Martin[2], Laimer Martin[1], Wally Verena[1], Zimmermann Georg[2]

[1]University Hospital of the Paracelsus Medical University Salzburg, Department of Dermatology and Allergology, Salzburg, Austria
[2]Paracelsus Medical University, Salzburg, Austria

Introduction & Objectives:

The servEB project combines clinical expertise, advanced statistical analyses, and AI-driven imagine recognition technology to advance Epidermolysis Bullosa (EB) research. By fostering collaboration between clinicians, natural scientists, statisticians, IT experts and patient representatives, the project aims to improve clinical trial outcomes, facilitate patient self-reporting through mobile devices, and apply multi-aspect statistical analysis to enhance data validity while reducing patient burden.

Materials & Methods:

First, servEB focuses on applying AI tools to enhance existing whole-body 3D stereophotographic imaging. Imaging recognition tools will be assessed for their validity and level of automation to accurately detect and quantify EB lesions, such as blister size and lesional skin areas. Imaging data will be acquired via standardized clinical as well as patient-self photography. In parallel, a mobile app will be developed for the upload of clinical images and the collection of patient-reported data based on, e.g., pain and pruritus scores. Thereby remote monitoring can be facilitated, potentially enabling less frequent on-site visits and continuous monitoring while reducing patient burden. Finally, all collected data will be harmonized and analyzed using suitable statistical methods. These analyses will combine lesion metrics with patient self-assessments to gain comprehensive insights into treatment efficacy.

Results:

AI-based algorithms for detection and quantification of affected skin areas are under development, with early 3D imaging results being evaluated. Currently, we have evaluated 176 images from EB patients. A total of 239 annotations using 8 different wound classes have been performed. Dice scores of approximately 30 or less have been noted. Thus overlap between medical experts on judging wound classes has to be improved, to be used as a ground truth in an AI application.

Conclusion:

This project will demonstrate the value of integrating AI tools and advanced statistical methods to enhance EB research, reduce patient burden, and improve data accuracy. These innovations will offer significant improvements in clinical trial design and patient care.

Abstract N°: 1219

A systematic review of the efficacy, safety and satisfaction of regenerative medicine treatments, including platelet-rich plasma, stromal vascular fraction and stem cell-conditioned medium for hypertrophic scars and keloids

Alireza Jafarzadeh*[1], Azadeh Goodarzi[1]

[1]Department of Dermatology, Rasool Akram Medical Complex Clinical Research Development Center (RCRDC), School of Medicine, Iran University of Medical Sciences, Tehran, Iran , Tehran, Iran

Introduction & Objectives:

The primary objective of this study is to examine the efficacy of various regenerative medicine approaches—including platelet-rich plasma, cell therapy, stromal vascular fraction, exosomes, and stem cell-conditioned medium—in the healing of hypertrophic and keloid scars.

Materials & Methods:

A systematic search was conducted using major databases such as PubMed, Scopus, and Web of Science. Based on predefined inclusion and exclusion criteria, eight articles were selected for review. The selected studies comprised two non-randomized clinical trials (25%), one randomized single-blinded comparative study (12.5%), one retrospective clinical observational study (12.5%), and four randomized clinical trials (50%). Data extraction and analysis were carried out using EndNote X8 and Google Sheets to ensure systematic handling of relevant information.

Results:

All eight studies demonstrated the effectiveness of regenerative medicine in treating hypertrophic scars and keloids. Among the studies, five (62.5%) focused on platelet-rich plasma, two (25%) examined stromal vascular fraction, and one (12.5%) explored stem cell-conditioned medium. In two studies (25%), regenerative therapies were adjunctive to standard treatments, while six studies (75%) evaluated these methods as monotherapy compared to standard care. Importantly, no serious side effects were reported among patients treated with these approaches.

Conclusion:

Regenerative medicine appears to be an effective treatment option with minimal side effects for hypertrophic scars and keloids, applicable as either monotherapy or in combination with standard treatments. However, further research is warranted to comprehensively evaluate the effectiveness of all subcategories within this field.

EADV SYMPOSIUM PRAGUE 22-24 MAY 2025

Abstract N°: 1224

A systematic review of procedural treatments for burn scars in children: Evaluating efficacy, safety, standard protocols, average sessions and tolerability based on clinical studies

Alireza Jafarzadeh*[1, 1, 1, 1], Azadeh Goodarzi[1]

[1]Department of Dermatology, Rasool Akram Medical Complex Clinical Research Development Center (RCRDC), School of Medicine, Iran University of Medical Sciences, Tehran, Iran , Tehran, Iran

Introduction & Objectives:

Managing burn scars in children poses significant challenges in terms of treatment efficacy and safety. This study investigates various procedural methods for treating burn scars in children, focusing on their effectiveness, safety, standard protocols, and tolerability.

Materials & Methods:

A comprehensive literature search was conducted on major databases, including PubMed, Scopus, and Web of Science, up to August 2024. The search emphasized procedural treatments for burn scars in children. Key data collected comprised participant demographics, sample sizes, intervention methods, follow-up protocols, treatment effectiveness, and reported adverse events. A total of 256 children were included in the assessment.

Results:

All procedural treatments evaluated yielded satisfactory outcomes. Among the various methods, trapeze-flap plasty and percutaneous collagen induction demonstrated improvements in all patients. In the laser treatment group, which included 161 children, the Vancouver Scar Scale (VSS) score reduction ranged from 55.55% to 76.31%. Outcomes were rated as good (24.61%) to excellent (60%). Laser treatments, administered with local anesthesia, were well tolerated by the children. Overall, the study found that diverse methods—including trapeze-flap plasty, percutaneous collagen induction, phototherapy, and fractional CO2 laser—exhibited a relatively good response and an acceptable safety profile.

Conclusion:

Various procedural treatments, particularly light-based therapies and lasers, demonstrate effectiveness and safety for treating burn scars in children. These methods often eliminate the need for general anesthesia, making them a viable option for scar management in this age group. The findings highlight the potential for improving treatment protocols tailored to children's needs.

Abstract N°: 1232

Effect of Topical Timolol on Healing of Immature Breast Scars After Mammoplasty: A Randomized Controlled Trial with Blinded Assessors and Patients

Alireza Jafarzadeh*[1], Azadeh Goodarzi[1]

[1]Department of Dermatology, Rasool Akram Medical Complex Clinical Research Development Center (RCRDC), School of Medicine, Iran University of Medical Sciences, Tehran, Iran , Tehran, Iran

Introduction & Objectives:

Wound healing is a complex process encompassing four main stages: hemostasis, inflammation, cell proliferation, maturation, and differentiation. Timolol (TM) may influence these stages, particularly re-epithelialization. This study aims to evaluate the one-month effects of timolol on acute surgical wounds in post-mammoplasty patients. to investigate the efficacy of topical timolol in improving postoperative breast scars, aiming to guide future treatment protocols and prescriptions.

Materials & Methods:

A total of 12 patients who underwent bilateral mammoplasty were enrolled in this double-blind randomized clinical trial. Treatment commenced 48 hours post-surgery; one breast was treated with 0.5% timolol eye drops, while the contralateral breast received distilled water (control). Patients were advised to minimize sun exposure and pressure on the treated area, with no additional oral or topical medications prescribed. Cleansing with a prescribed cleanser occurred every three days. Cosmetic assessments were conducted by a specialist at 10 and 30 days post-surgery using a 10-point Likert scale. Data were analyzed using Two-Way Repeated Measures ANOVA.

Results:

Timolol significantly reduced erythema over time (Interaction, $P<0.0001$; Treatment, $P=0.02$), with an average decrease of 5.38 points (CI95%: 4.22-6.55) compared to 4.41 points (CI95%: 3.83-5) for placebo. The difference in reduction was 0.972 points (CI95%: 0.18-1.7). A significant improvement in the aesthetic appearance of the breast was also noted (Interaction, $P<0.0001$; Treatment, $P=0.015$), with timolol enhancing the aesthetic score by approximately 5.5 points (CI95%: 4.9-6.2) versus 4.58 points (CI95%: 3.4-5.7) for the placebo. Overall, timolol improved the aesthetic score by 0.972 points (CI95%: 0.23-1.7) more than the placebo.

Conclusion:

Topical application of 0.5% timolol for at least one month positively affects the aesthetic quality of breast scars following mammoplasty, as well as reducing erythema and inflammation in the wound area.

Abstract N°: 1255

Age, sex and anatomical location patterns in keloid scars with pruritus

Abir Boulhilat[1], Khalidi Meriem[1], Amraoui Mohamed[1], Frikh Rachid[1]

[1]military hospital med V , dermatology, Rabat

Age, sex and anatomical location patterns in keloid scars with pruritus

Introduction & Objectives:

A keloid is a benign development of dense fibrous tissue that develops as a result of an aberrant healing response to a cutaneous injury and extend beyond it margins. In addition to their obvious cosmetic concerns, keloid scars often present with lesional and perilesional pain and pruritus which the mechanism remains unclear. Our objective is to investigate patterns of pruritus in keloid scars by demographic factors, including age, sex and anatomical location.

Materials & Methods:

This retrospective study included 467 cases of keloid reported between January 2019 and January 2025.

Individuals were included in the analytic sample if they had a keloid scar with pruritus and excluded if they had asymptomatic keloids or other types of scars

Results:

Of 467 cases, a total of 312 (66,8%) individuals were younger than 18years, of whom 184 (58,9%) were male and 128 (41,02%) females. 155 (33,19%) individuals were 18 years and older, of whom 95 (61,2%) were male and 60 (38,7%) female. Over all keloid associated with pruritus was more frequent in younger males despite the anatomical site except the head/neck, in which females of all ages were more frequently affected.

The distribution of pruritic keloids by age was significantly different between male and female individuals primarily associated with the head/neck and the upper back but not with the trunk and the extremities.

Conclusion:

In this retrospective case series, an age-by-sex interaction was found in the incidence of pruritic keloids, with pruritus on head/neck on keloids being more frequent on female patients and pruritc keloids on trunk and extremities being more common in males younger than 18years old. Future studies are necessary to confirm this and to understand the cause of age-by-sex interaction

Abstract N°: 1265

Regenerative medicine for atrophic scars: A systematic review of extracellular vesicles, conditioned media, stromal vascular fraction, and mesenchymal stem cells

Alireza Jafarzadeh*[1], Azadeh Goodarzi[1]

[1]Department of Dermatology, Rasool Akram Medical Complex Clinical Research Development Center (RCRDC), School of Medicine, Iran University of Medical Sciences, Tehran, Iran , Tehran, Iran

Introduction & Objectives:

Atrophic scars, caused by insufficient collagen deposition and ECM production during wound healing, significantly affect patients' quality of life. Conventional treatments often fail to achieve complete skin regeneration, prompting interest in regenerative medicine. This review evaluates the efficacy and safety of emerging regenerative therapies, including extracellular vesicles, conditioned media, stromal vascular fraction, and mesenchymal stem cells, in improving atrophic scars.

Materials & Methods:

a systematic search was conducted on PubMed, Scopus, and Web of Science up to November 23, 2024. Relevant keywords, including "conditioned media," "Secretome," "extracellular vesicles," "atrophic scar," "rejuvenation," and "lightening," were used to identify studies. Articles meeting inclusion criteria underwent data extraction focusing on study design, population characteristics (mean and range), intervention details (including duration), comparison groups, clinical outcomes with statistical results, and reported adverse effects, ensuring comprehensive analysis and adherence to PRISMA guidelines.

Results:

Out of 186 initially identified articles, 11 studies involving 177 participants (89 females, 59 males, and 29 undefined, mean age 31.52 years) were reviewed, focusing on treatments for acne scars (82%) and striae distensae (18%). These studies evaluated Stromal Vascular Fraction (SVF), Cell-conditioned Medium (CM), Mesenchymal Stem Cells (MSC), and Extracellular Vesicles (EV). Significant improvements were observed with various treatments, including a 32.5% decrease in ECCA scores with Adipose Tissue Stem Cell Exosome (ASCE) treatment, and greater acne scar improvements with Fractional CO2 Laser combined with Platelet-Rich Plasma (PRP) compared to Stem Cell-Conditioned Medium (SC-CM). Other promising results included enhanced skin elasticity and collagen density with ADSC-CM and a 28.5% reduction in scar volume with HSCM combined with FCL. SVF treatments, including gel and Subcision, demonstrated notable improvements in striae distensae and acne scars, with significant reductions in scar volume, area, and depth. Intradermal Bone Marrow Stem Cell (BMSC) injections also led to significant acne scar improvements, highlighting the potential of stem cell-based and exosome treatments for skin regeneration.

Conclusion:

The evaluated studies indicate promising efficacy for regenerative treatments such as stromal vascular fraction (SVF), conditioned media (CM), extracellular vesicles (EV), and mesenchymal stem cells (MSC) in improving acne scars and striae distensae. Significant enhancements in scar appearance, skin hydration, and patient satisfaction were observed across various combination therapies compared to controls. While these advancements offer new hope for patients with moderate to severe skin conditions, further research is needed to establish standardized protocols and long-term efficacy. The minimal reported adverse effects highlight the safety of these regenerative interventions, suggesting that their integration into dermatological practice could improve treatment outcomes for skin texture and appearance.

Abstract N°: 1411

Closure Techniques After Excision Repair in Advanced Hidradenitis Suppurativa

Mark Houdi[1], Sahil Kapur[1], Bryce Delong[1], Bassem Chamma[1], Hassan Qureshi[1], Craig Burkhart[1]

[1]University of Toledo Medical School, Dermatology, Toledo, United States

Introduction & Objectives:

Hidradenitis Suppurativa (HS) is a complex, inflammatory skin condition that is characterized by erythematous papules, recurring abscesses, scarring, and sinus tract formation, most commonly in intertriginous zones. HS is more common in African Americans and women, and typically presents between puberty and the age of 40. While there are several treatment options such as antibiotic and biologic therapies, surgical intervention is required to treat more severe cases. Severity of the affected region is organized by Hurley Classification Stages I-III, with Stage III being most advanced as well as a typical candidate for excision. The purpose of this study is to review available literature concerning repair techniques following HS excisions to compare recurrence rates, complications, and patient satisfaction outcomes.

Materials & Methods:

A systematic review was conducted using PubMed and Google Scholar databases to July 2024. Studies concerning HS, excision, wound closure techniques, recurrence, and standardized quality of life assessments were considered and manually reviewed.

Results:

190 (49.9%) patients underwent 253 excisions that were followed by healing with secondary intention. The most common areas that underwent repair were the inguinal (37.2%), gluteal/perianal (25.7%), and axillary (22.1%) regions. Sustained remission was achieved in 125 (49.4%) sites. Recurrence occurred in 33 (13.0%) sites. 166 patients with 399 sites underwent skin graft repair, most commonly of the axillary regions 30.0%) and inguinal regions (24.3%). Recurrence occurred in 38 (22.9%) patients in addition to other adverse events including further grafting. 25 patients with 26 sites underwent skin flap repair of 25 (96.2%) sites. After 6 months, there were no reports of recurrence. 5 (19.2%) superficial infections were reported and resolved with antibiotic therapy. In one instance, secondary intention demonstrated more than double the incidence of infection compared to skin graft repair. Grafting demonstrated the highest rate of subsequent surgical intervention at 14.5%, largely due to the need for additional donor grafts.

Conclusion:

HS is a multifaceted disorder with many treatment options, medical and surgical. Closure techniques are one important aspect of an often combinatory approach. Each approach has its advantages that must take patient lifestyle into consideration. Lifestyle implications like obesity or smoking can significantly impact the healing process while also often being omitted from many study details. While this study identifies noteworthy trends and comparisons from available literature, more research should be conducted to improve standardization of care, clinician confidence, and awareness of HS.

Abstract N°: 1524

assessment of Intralesional injection of Methotrexate versus triamcinolone acetonide in treatment of keloid .

Noha Tawfik*[1]

[1]suez canal university, Dermatology,venereology and andrology, ismailia, Egypt

Introduction & Objectives:

Many therapeutic options used in treatment of keloid either single or combined as cryotherapy, surgical excision, radiotherapy, laser therapy, intralesional therapies,and topical treatments. keloid is still challenging disease that is difficult to treat and have a higher recurrence rate. To study the efficacy of intralesional methotrexate (MTX) versus intralesional triamcinolone (TAC) acetonide in the treatment of keloid. Our study aims to study the efficacy of intralesional methotrexate versus intralesional triamcinolone acetonide in the treatment of keloid.

Materials & Methods:

Randomized controlled study was conducted on two groups; each group has 25 patients having keloid. One group was treated with intralesional MTX & the other group was treated with intralesional TAC. Skin biopsies were taken from each patient before and after treatment for histopathological assessment, the specimens were stained with hematoxylin and eosin and masson trichrome stain to assess the collagen density on the obtained section. All patients received 6 sessions, one session every 2 weeks. Clinical assessment of patients was done by using Vancouver scare scale (VSC) and photography.

Results:

Both modalities were safe and effective in keloid treatment. However, MTX is more effective than TAC with statistically significant difference at the end of treatment period. MTX group showed a rapid onset of response, softening, decrease of keloid thickness and color improvement. TAC group showed improvement of pain and pruritus however, side effects were present. MTX group is more improved histopathologically than TAC group regarding the epidermal thickness and the area % intensity of stain.

Conclusion:

Both TCA and MTX are effective in treatment of keloid with less side effects regarding MTX.

Histopathological assessment of keloid is helpful in treatment follow up although it is invasive method not tolerated by some patient.

Abstract N°: 2030

The contribution of platelet-rich plasma in the management of leg ulcers

Sara Marraha[1], Eljouari Ouiame[1], Gallouj Salim[1]

[1]University hospital center Mohammed VI, Abdelmalek Essaadi university , Dermatology, Tangier, Morocco

Introduction & Objectives:

Platelet-rich plasma is a blood plasma enriched with blood platelets, obtained by centrifugation from a blood sample taken from the patient himself, and has the particularity of containing growth factors capable of stimulating the regeneration of certain tissues. This ability gives it therapeutic potential that is being studied in a number of fields, including dermatology, rheumatology and ophthalmology.

Leg ulcers are a common pathology, affecting the elderly in particular. The main risk factors are age, female gender, overweight and chronic circulatory disease.

Leg ulcers can take a long time to heal, and require careful management, making them a major source of pain and discomfort for patients.

Materials & Methods:

This is a 2-year prospective study (October 2021 to October 2023) involving 60 patients with leg ulcers of different origins. Our patients were randomly divided into 2 groups : the first received injections of PRP into the periphery of the ulcers, followed by application of a PRP-soaked dressing, and the second group received directed wound healing with a conventional dressing.

We compared healing time, rate of healing and pain level.

Results:

The average age of our patients was 42.3 years, with an extreme age of 17 years and 68. The antecedents noted in our two groups of patients were diabetes in 25%, arterial hypertension in 6.25%, and other antecedents were dysthyroidism, multiple myeloma, sickle cell anemia, angio-behcet's disease and peri-arteritis nodosa in 1 patient. All our patients had chronic ulcers that had been evolving for 1 month for the most recent and 7 months for the oldest. 56.25% had venous ulcers, while arterial ulcers accounted for 15.62%. 6 patients had a plantar perforating sore, and in 2 patients the ulcer was secondary to a burn. In the local care group, the average healing time was 1 year and 27 days, with poor quality, and only 52% of patients achieved healing, and the pain scale went from VAS 8 to 4. In the 79% PRP group, the average healing time was 7 months, and the pain scale went from 8 to 2. P value was calculated for each criterion.

Conclusion:

PRP treatment appears to be an effective alternative to conventional local care in the management of leg ulcers, with improved healing, faster healing and a significant reduction in pain. These results encourage the use of PRP in clinical practice, subject to optimized protocols validated by larger-scale studies.

Abstract N°: 2164

Fahr Syndrome vs. Pyoderma Gangrenosum: Diagnostic Challenges in a Patient with Multiple Mucocutaneous Ulcers

Dan Mircioi[1], Ana-Maria Țuțu[1], Andra Miu[1], Kimberley Noel Pallourios[1], Andra Dinu[1], Roxana Ioana Nedelcu[2], Alice Brinzea[2], Razvan Theodor Andrei[1], Gabriela Turcu[1, 2]

[1]Colentina Clinical Hospital, Bucharest, Romania
[2]Carol Davila University of Medicine and Pharmacy, Bucharest, Romania

Introduction & Objectives:

Fahr disease is a rare neurological condition characterized by idiopathic calcification of the basal ganglia, often with an autosomal dominant inheritance.

The diagnostic criteria for Fahr disease include:

- Progressive neurological dysfunction with onset at any age
- Radiographic evidence of bilateral basal ganglia calcifications, as well as calcifications in other brain regions
- Absence of biochemical abnormalities suggestive of endocrinopathies, mitochondrial disorders, or other systemic conditions
- Absence of infections, toxins, or trauma as potential causes
- A family history consistent with autosomal dominant inheritance

Materials & Methods:

We report the case of a 39-year-old female with a childhood diagnosis of Fahr syndrome and HBV infection, who was admitted to the Infectious Diseases Ward with multiple cutaneous and oral ulcerations. Her condition showed a favorable response to antibiotics and systemic corticosteroid therapy.

The patient was later referred to our dermatology clinic, where a thorough clinical examination identified a **7 cm ulceration** with **gray-purple, undermined borders**, **painful on palpation**, and **covered with dark-yellow deposits**, located in the intergluteal fold. Additionally, **1–2 cm ulcerative lesions** were noted on the **right index finger and left breast** and **multiple white ulcerations on the tip of the tongue.**

Results:

A skin biopsy of the gluteal ulceration was performed, and histological examination was suggestive for the diagnosis of **pyoderma gangrenosum.** Considering the patient's comorbidities, **colchicine (1 mg/day) therapy** was initiated for three weeks. At follow-up, there was some improvement in ulcer healing; however, due to digestive side effects, we switched the treatment from **colchicine to systemic dapsone**, combined with **topical corticosteroids**. After four weeks, the patient showed **significant improvement** of the ulcerations

Conclusion:

This case highlights the challenges of differentiating **pyoderma gangrenosum ulcers** from ulcerations that may occur in **Fahr syndrome** due to calcifications. It also emphasizes the importance of recognizing **associated symptoms of Fahr syndrome t**o facilitate timely referrals, accurate diagnosis, and appropriate treatment.

EA DV SYMPOSIUM PRAGUE 22-24 MAY 2025

Abstract N°: 2208

Efficacy of 3D Bioprinting Technology in the Treatment of Chronic Non-Healing Ulcers: A Randomized Controlled Trial

Amit Bahuguna*[1]

[1]Command Hospital Air Force Bengaluru, Department of Dermatology, Venereology and Leprology, Bengaluru, India

Introduction & Objectives: Chronic non-healing ulcers (CNHUs) are a major clinical challenge, especially in diabetes, venous insufficiency, and neuropathic conditions. Standard treatments often fail, prolonging morbidity. 3D bioprinting offers an innovative approach by generating bioengineered skin substitutes tailored for wound healing. This randomized controlled trial (RCT) assesses the efficacy of 3D bioprinted skin substitutes using autologous keratinocytes and fibroblasts embedded in a bioink matrix. Secondary objectives include evaluating safety, wound healing rates, patient satisfaction, and feasibility in dermatology.

Materials & Methods: This six-month RCT at a tertiary care center included 50 patients (aged 20-60 years) with CNHUs (>8 weeks) unresponsive to standard therapy.

Inclusion Criteria:

CNHUs >8 weeks

Adequate circulation (ABPI ≥ 0.8)

No active ulcer infection/malignancy

No keloid history/recent ulcer surgery

Procedure: Full-thickness skin biopsies were taken, and epidermal and dermal layers were enzymatically separated. Keratinocytes and fibroblasts were isolated, expanded, and suspended in a hydrogel bioink of hydroxy methylcellulose and alginate. A 3D bioprinter fabricated patient-specific skin substitutes matching ulcer dimensions.

Randomization:

Group A (n=25): 3D bioprinted skin substitutes

Group B (n=25): Conventional autologous split-thickness skin grafts

After debridement, standardized dressings were applied.

Outcomes:

Primary: Wound healing assessed by percentage of wound area reduction at 4 months

Secondary: Time to complete healing, adverse events (infection, graft rejection, delayed healing), patient-reported outcomes (pain reduction, satisfaction)

Statistical Analysis: Independent t-tests; $p<0.05$ was statistically significant.

Results: Among 50 patients with ulcers on lower limbs, feet, and sacral regions, 4-month data showed:

Group A (3D Bioprinting):

21 patients (84%) achieved >90% wound closure

Mean wound area reduction: 86.7% ($p<0.01$)

68% achieved >75% closure within 2 months

Group B (Skin Grafts):

16 patients (64%) achieved complete healing

Mean wound area reduction: 72.3% ($p=0.12$)

40% achieved >75% closure by 2 months

No major adverse events occurred. Patient satisfaction was significantly higher in Group A due to superior cosmetic results and reduced pain.

Conclusion: This RCT demonstrates that 3D bioprinting enhances CNHU management. Bioprinted skin substitutes showed faster healing, superior wound closure, and higher patient satisfaction compared to standard skin grafting. This emerging technology holds promise for improving CNHU outcomes while potentially reducing healthcare burden.

Abstract N°: 2279

Prolidase Deficiency - An Important Differential Diagnosis in Refractory Leg Ulcers: Report of 3 Cases

Yusuf Can Edek*[1], Samed Şahin[1], Mehmet Gülengül[1], Doğuhan Inalöz[1], Emre Güven[1], Fahrettin Kucukhemek[1], Esra Adışen[1]

[1]Gazi University Faculty of Medicine, Ankara, Türkiye

Introduction & Objectives:

Prolidase deficiency is an autosomal recessive disease that develops because of mutation in the Peptidase D (PEPD) gene of the prolidase enzyme that breaks down proline and its hydroxyl. This enzyme deficiency, which causes a defect in the recycling of proline, causes deterioration in collagen synthesis, irregularities in inflammatory and angiogenic signaling pathways, and causes disorders in wound healing. Prolidase deficiency is a rare syndrome, and the characteristic dermatological finding of the disease is recurrent, resistant ulcers. Other findings of the disease include dysmorphic facial findings observed in patients, photosensitivity, keratosis pilaris, hepatosplenomegaly, and increased susceptibility to infection. Clinical examination, observation of characteristic findings, and detection of low prolidase enzyme levels are important in the diagnosis.

Materials & Methods:

Herein we report three cases whose was followed up with the diagnosis of prolidase deficiency a rare syndrome.

Results:

Of the three patients analyzed, two were female, and the average age was 46 years. All cases exhibited dysmorphic facial appearance, widespread telangiectasias, moderate mental retardation and resistant lower extremity ulcers. Patients diagnosed following blood prolidase activity level measurement, and activity was below the normal level in all patients. Three of the cases were siblings, whose parents were consanguineous. The patients, whose had recurrent lower extremity ulcers and osteomyelitis, and had received multiple antibiotic treatments, wound care and debridement. Dermatological examination of the patients revealed ulcers with irregular borders on the lower extremities. There was no anomaly of the patients in the laboratory examinations other than hypochromic microcytic anemia.

Conclusion:

Although there is no definitive treatment for prolidase deficiency, treatment focuses more on the management of dermatological findings. Various topical, systemic and surgical treatment methods can be used in ulcer management in patients. Since ulcers with prolidase deficiency are generally resistant to standard wound care methods, many treatment agents are used in patients and combination treatments may be needed.

With these cases, we would like to emphasize the clinical features of prolidase deficiency, a rare syndrome, and therapeutic alternatives to be applied in disease management.

Abstract N°: 2346

Postherpes Zoster Keloid Formation: A Rare Complication of Varicella-Zoster Virus Reactivation

Fatima Zahra Hammoud[1], Lina Benchekroun[1], Lina Mouline[1], Najoua Ammar[1], Syrine Hamada[1], Meriam Meziane[1], Nadia Ismaili[1], Laila Benzekri[1]

[1]Ibn Sina, Dermatology, Rabat

Introduction:

Herpes zoster, caused by the varicella-zoster virus (VZV) reactivation, is characterized by painful, vesicular eruptions along dermatomal distributions. While postherpetic neuralgia is a well-documented sequela, cutaneous scarring and keloid formation following herpes zoster are rarely reported. Keloids result from an aberrant wound-healing response with excessive fibroblast proliferation and collagen deposition. We report here a rare case of keloid after herpes zoster infection in a 64-year-old woman.

Case report:

A 64-year-old female with no prior history of keloids presented with a hypertrophic, pruritic, and pinkish-red masses on anterior of her left shoulder three months after resolution of a herpes zoster outbreak in the same area. Physical examination revealed numerous pinkish-red, mildly tender, firm, irregular and itchy papules and plaques on the irregular hyperpigmented macule which had a dermatomal distribution. The lesion progressively enlarged, causing discomfort and cosmetic concern. The patient was treated with a combination of intralesional corticosteroids and silicone gel sheeting, with partial regression of the lesion. Additional therapies, including laser treatment and cryotherapy, were considered for further improvement.

Discussion:

Keloids are an overgrowth of scar tissue caused by excessive collagen accumulation following skin injury, particularly in individuals with a genetic predisposition. While trauma is a key factor in their development, the precise mechanisms driving keloid formation remain uncertain. Research suggests that, beyond genetic and molecular factors, the immune system may also play a role. Autoimmune anti-fibroblast antibodies have been identified in keloidal tissue, suggesting that these antibodies may contribute to fibroblast activation and excessive scar formation.

A phenomenon known as Wolf's isotopic response occurs when a new skin condition emerges at the site of a previously healed, unrelated disease. Herpes zoster is the most frequently reported precursor of this response. Reported cases show variable time intervals between herpes zoster resolution and the appearance of secondary skin conditions, ranging from days to years. While the exact cause remains unclear, proposed explanations include viral, immunologic, vascular, and neural influences. The detection of viral DNA in early post-zoster reactions (within one month) suggests that herpes zoster itself is not the direct cause of the isotopic response but may instead act as a trigger for immune system dysregulation, ultimately leading to fibrosis and keloid formation. Current treatment options remain complex, with variable success rates using corticosteroids, silicone-based treatments, laser therapy, and emerging biologic agents that target fibrotic pathways.

Conclusion:

While rare, keloid formation following herpes zoster should be considered in patients with persistent post-inflammatory hypertrophic lesions. Increased awareness among dermatologists and healthcare providers can facilitate early diagnosis and treatment, potentially improving patient outcomes. Further research is needed to elucidate the underlying mechanisms, optimize management approaches, and explore novel therapies for this rare but impactful complication.

EADV SYMPOSIUM
PRAGUE
22-24 MAY 2025

Abstract N°: 2362

Treatment of chronic wounds and the effect of adjuvant hyperbaric oxygen therapy

Hristina Breshkovska[1], Silvija Duma[1], Ivana Dohceva Karajovanov[1], Suzana Nikolovska[1], Elena Mirceska Arsovska[1], Rebeka Vukovska[1, 1], Andrijana Gjorgjeska[2], Vesna Trajkova[3], Natasha Teovska Mitrevska[4], Margarita Peneva[2]

[1]University Clinic of Dermatology Skopje Medical Faculty, Universiry Ss Cyril and Methodius , Skopje, North Macedonia
[2]University Clinic for Plastic and reconstructive surgery Skopje Medical Faculty, Universiry Ss Cyril and Methodius , Skopje, North Macedonia
[3]City General Hospital 8th September- Skopje, Skopje, North Macedonia
[4]General hospital Re-medica- Skopje, Skopje, North Macedonia

Introduction & Objectives:

Chronic wounds are characterized by disrupted and prolonged healing processes, often remaining in the inflammatory phase, which prevents proper anatomical and functional recovery. Wound healing is a complex process that may benefit from hyperbaric oxygen therapy (HBOT), which delivers oxygen at increased pressure. The primary function of HBOT is to enhance oxygen diffusion into injured tissues, supporting cellular metabolic processes essential for wound repair. This study aims to evaluate the effectiveness of HBOT in chronic wound healing by assessing wound size reduction or complete epithelialization compared to a control group. Additionally, it examines the therapy's impact on inflammation by measuring IL-6 levels in the blood.

Materials & Methods:

This prospective, randomized study includes 55 patients (aged 18 and older) with chronic wounds. Participants were divided into two groups: 27 patients in the control group and 28 patients treated with HBOT at 2.2 ATA. All subjects were monitored over a six-month period.

Results:

The analysis confirmed the efficacy of HBOT as an adjuvant therapy for chronic wounds. Wounds treated with HBOT exhibited a significantly higher rate of epithelialization compared to those treated with conventional therapy alone.

Conclusion:

Hyperbaric oxygen therapy enhances chronic wound healing and reduces inflammation, making it a valuable adjunctive treatment.