

**Abstract N°: 220****The change of microbial flora of venous leg ulcers over the 20-year period**Milan Matic<sup>\*1, 2</sup>, Aleksandra Matic<sup>1, 3</sup>, Novak Rajic<sup>2</sup>

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**Introduction & Objectives:**

Venous leg ulcers are frequently colonized by various bacteria without exhibiting signs of infection. In some cases, clinical signs of infection may emerge, and if left untreated, they can prolong the healing time of the ulcer and increase the risk of complications. Typically, antibiotic treatment is initiated empirically, based on assumptions about the type of bacteria and their antibiotic sensitivity. The types of bacteria most commonly isolated from leg ulcers and their antibiotic sensitivity can change over time and vary depending on the geographical area.

Our goal was to assess whether there is a change in the types of most commonly isolated bacteria and their antibiotic sensitivity over a twenty-year period in our clinic.

**Materials & Methods:**

We collected data from patients with venous leg ulcers who were treated at the University Dermatovenereological Clinic at three time points: 2001 (111 participants), 2014 (64 participants), and 2020 (75 participants). One swab was collected from each patient and sent for microbiological testing. The swabs were tested for microbiological sensitivity and resistance, employing a standard antibiotic set.

**Results:**

Our findings revealed an increased predominance of gram-negative bacteria over the years (2001 - 70.80%, 2014 - 71.85%, 2020 - 83.79%). In 2001, *Pseudomonas aeruginosa* (26.54%) was the most common gram-negative bacterium, while *Staphylococcus aureus* (24.78%) was the most common gram-positive bacterium. In 2014, *Pseudomonas aeruginosa* and *Staphylococcus aureus* remained the most common gram-negative and gram-positive bacteria, but with different frequencies: 30.10% and 23.30%, respectively. In 2020, there was a further increase in the frequency of gram-negative bacteria, with *Pseudomonas aeruginosa* recorded in 35.14% of cases, while the most common gram-positive bacterium, *Staphylococcus aureus*, was found in only 7.43%.

In 2001, gram-positive bacteria displayed the highest sensitivity to gentamicin and chloramphenicol, while gram-negative bacteria were most susceptible to antibiotics from the quinolone group. According to the 2014 antibiogram results, both gram-positive and gram-negative bacteria were most often sensitive to cephalosporins (80.28% and 75.37%, respectively). Additionally, carbapenems, aminoglycosides, and quinolones showed good sensitivity. In 2020, gram-positive bacteria exhibited the highest sensitivity to methicillin, amoxicillin with clavulanic acid, and the cephalosporin group, while gram-negative bacteria were most susceptible to the carbapenem group, piperacillin with tazobactam, and newer-generation cephalosporins.

**Conclusion:**

Throughout the twenty-year period at our clinic, we noted a notable predominance of gram-negative bacterial flora, with *Pseudomonas aeruginosa* being the most prevalent bacterium. Antibiotic sensitivity has undergone significant changes, with observed resistance to older antibiotic types and considerable sensitivity to newer classes.



**Abstract N°: 222****The potential role of mesenchymal stem cells in wound healing: A systematic review**

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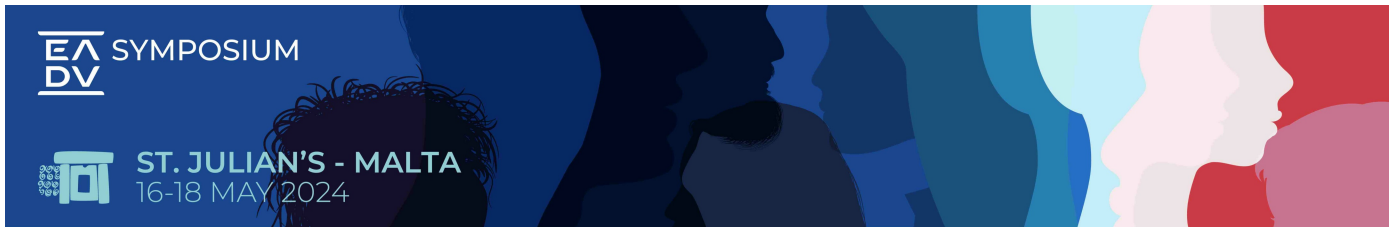
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**Introduction & Objectives:** Wound healing is a complex cascade involving the orchestration of inflammatory cells, skin fibroblasts, keratinocytes, and endothelial cells. These cells achieve tissue repair through an interchange of cytokines and growth factors through a controlled inflammation, angiogenesis, and remodeling process. Disruptions in the wound-healing process by comorbid conditions lead to significant morbidity and mortality. Stem cell therapy has emerged as a new strategy to facilitate the wound healing process. Stem cells harvested from different sources can be used for wound repair and regeneration (endothelial progenitor cells, bone marrow, adipose tissue, dermal and inducible pluripotent stem cells). We aimed to review clinical, translational, and primary literature on stem cell therapies in chronic wounds and summarize practical clinical applications to dermatological care.

**Materials & Methods:** A comprehensive search of Pubmed, Embase, Web of Science, Google Scholar, and Cochrane Library was conducted for studies relating to stem cells and wound healing. duplicate results were removed using Covidence. Titles and abstracts were screened by two independent researchers (BF and KR), with discrepancies resolved through discussion and mutual agreement. Articles were excluded if they were review-type or commentary-type articles.

**Results:** A total of 22,454 articles were retrieved from the search. Deduplication removed 905, and automation removed an additional 18,363 articles. After an initial screening of titles and abstracts, 170 articles remained. Full-text screening resulted in an additional 126 articles being removed, leaving 44 included studies.

**Conclusion:** Stem cells used for wound repair and regeneration include endothelial progenitor stem cells and adult stem cells, in the forms of bone marrow-derived mesenchymal stem cells, adipose tissue stem cells, and inducible pluripotent stem cells. Among these sources, adipose tissue-derived mesenchymal stem cells (AD-MSCs) are ideally used due to the abundant supply of fat tissue, ease of isolation, extensive proliferative capacities *ex vivo*, and their ability to secrete pro-angiogenic factors. AD-MSCs have been used to enhance wound healing in peripheral arterial disease, diabetic wounds, hypertensive ulcers, bullous diabeticorum, venous ulcers, and postsurgical wounds after Mohs micrographic surgery. These cells have been delivered to the tissue topically, with scaffolds, combined with plasma-rich proteins, and through atelocollagen in various human studies. These approaches, when combined with local wound care practices, resulted in decreased pain, shorter wound healing times and better cosmesis. Thus, this approach may be regarded as an attractive option for intractable wounds that cause major clinical problems, especially chronic lower leg wounds. It can also be used after Mohs micrographic surgery for defects left to heal by secondary intention. Stem cell application may reduce the overall cost burden on the healthcare system and improve the quality of life for patients.



**Abstract N°: 409**

**A Comparative Analysis of Fractional CO2 and PICO Laser Treatments for Cesarean Section Scars: A Novel Approach to Scar Management**

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**Introduction & Objectives:**

A Comparative Analysis of Fractional CO2 and PICO Laser Treatments for Cesarean Section Scars: A Novel Approach to Scar Management

Cesarean section scars pose a persistent challenge in post-pregnancy women, often leading to dissatisfaction and diminished quality of life. This study aimed to evaluate the efficacy of two laser treatments, fractional CO2 and PICO, in addressing these concerns

**Materials & Methods:**

Twenty female participants were evenly divided into two groups, with one group receiving fractional CO2 laser treatment and the other PICO laser treatment. Each group underwent three sessions at 4-5 week intervals. Patient responses to a scar satisfaction scale were recorded, and evaluations were conducted using the "Patient and Observer Scar Assessment Scale" (POSAS) and Vancouver Scar Scale.

**Results:**

POSAS assessments revealed a statistically significant clinical improvement in the fractional CO2 group, while the PICO group exhibited comparatively less improvement. Surprisingly, despite the lesser clinical improvement, the PICO group reported higher satisfaction, attributing it to faster healing and reduced convalescence time, a trend substantiated by statistical analyses.

**Conclusion:**

This study stands as a unique contribution to the current literature, as no similar publications were identified. The absence of guidelines from gynecologists-obstetricians or physiotherapists regarding optimal scar management after cesarean sections underscores the significance of our findings. The results suggest a potential shift in clinical practice towards considering not only clinical outcomes but also patient satisfaction in scar management strategies. Further research and integration of these findings into medical guidelines may pave the way for a more comprehensive approach to post-cesarean section scar treatment.



**Abstract N°: 523****Blister Mystery: a challenging case of Bullous Diabeticorum**Emma Carroll\*<sup>1</sup>, Maria Stanciu<sup>1</sup>, Fiona Lynch<sup>1</sup>, Eilis Nic Dhonncha<sup>1</sup><sup>1</sup>University Hospital Galway, Dermatology, Galway, Ireland**Introduction & Objectives:**

A 47-year-old female with brittle type 1 diabetes, coeliac disease, and asthma presented with a three-year history of recurrent blistering on the dorsal right foot. Examination revealed extensive ulceration, fluid-filled blisters, and soft tissue deformity. No abnormalities were noted in the contralateral foot except for bilateral pitting oedema. Despite prior wound care and no specific therapies, the blistering persisted.

**Materials & Methods:**

Investigations included MRI, ruling out osteomyelitis. Skin biopsies for H&E and direct immunofluorescence, as well as bacterial and viral swabs, were conducted. Results excluded autoimmune blistering disorders, neuropathic ulcer, and infections, except for positive bacterial swabs (*Staphylococcus aureus*, *Streptococcus pyogenes*, and enterobacteria). Despite systemic antibiotic treatment, blistering extended proximally.

**Results:**

Correlating clinical history with investigation results, a diagnosis of Bullous Diabeticorum was established. This non-inflammatory, spontaneous blistering condition is unique to poorly-controlled diabetes mellitus. In this case, exclusion criteria ruled out autoimmune bullous disorders, stasis bullae, and typical neuropathic ulceration. Notably, the acral deformity observed in this patient was striking, suggesting chronic blistering leading to toe shortening, toenail loss, and pseudosyndactyly, resembling dystrophic epidermolysis bullosa cases. Unusual aspects included the protracted healing (ongoing for three years), scarring (typically absent in Bullous Diabeticorum), and the distinct appearance of the affected foot compared to the contralateral foot.

**Conclusion:**

In summary, a complex case of Bullous Diabeticorum in a poorly-controlled diabetic patient with multiple comorbidities and bacterial superinfection is presented. The prolonged healing and scarring, along with the unique acral deformity, make this case noteworthy. Understanding such atypical presentations is crucial for accurate diagnosis and management, particularly in chronic and complex dermatological conditions associated with diabetes mellitus.

**Abstract N°: 528****Efficacy and safety of topical cream containing adipose tissue-derived stem cell derived exosomes in mitigating radiation dermatitis after adjuvant radiotherapy for breast cancer**

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**Introduction & Objectives:**

Acute radiation-induced skin injury is a frequent yet serious side effect experienced by breast cancer patients undergoing radiotherapy (RT). This study aimed to assess the efficacy and safety of a topical cream containing adipose tissue-derived mesenchymal stem cell-derived exosomes (ASC-EXOs) in mitigating radiation dermatitis in breast cancer patients undergoing radiotherapy.

**Materials & Methods:**

An 8-week prospective, single-center pilot study was conducted to evaluate the clinical efficacy and safety of a cream containing ASC-EXOs. A total of fifteen patients undergoing radiotherapy applied the cream on the radiation exposure site, starting the night prior to the initiation of RT, continuing until two weeks following the conclusion of RT. Radiation dermatitis was evaluated at baseline and at weeks 2, 4, 6, and 8, employing the 5-point grading system advocated by the Radiation Oncology Group (RTOG). Furthermore, we also measured quantitative biophysical measurements of the skin because previous studies have shown that biophysical measurements of the skin enable early detection of changes in skin due to radiation.

**Results:**

A total of fifteen patients were assessed for eligibility, all of whom met the criteria and were consequently included in the study. None of the patients were lost during the study period.

The RTOG scores were observed to peak at week 6, aligning with the point at which the effects of radiation treatment were most cumulative. Throughout the study duration, no patients reported acute toxicity grading scores of 3 or 4. Evaluating the maximum RTOG scores over the course of the study, the radiation dermatitis of the maximum grades of 0, 1 and 2 were observed in 6.7% (1/15), 40% (6/15) and 53.3% (8/11).

The erythema index (EI) showed an increase over time and was highest at week 4 but decreased by week 8. Similar to EI, melanin index increased over time and was highest at week 6 but decreased by week 8. Transepidermal water loss (TEWL) was increased at week 6 but decreased by week 8, to the point that was even lower compared to baseline. The ASC-EXOs containing cream was well tolerated by the patients. No adverse events related to the application of the cream were reported.

**Conclusion:**

The total incidence of radiation dermatitis in our study was notably lower than previously documented, illustrating the protective effects of the ASC-EXOs containing cream. Furthermore, the results of TEWL indicate that the topical application of ASC-EXO containing cream was effective in maintaining the integrity of the skin barrier function.

We presume that the ASC-EXOs containing cream seems to be effective in mitigating radiation dermatitis due to the

positive effects ASC-EXOs on cell proliferation, migration, and ECM remodeling in HDFs, as well as enhanced wound closure and tissue regeneration as shown in porcine models *in vivo*. ASC-EXOs have been shown to activate epidermal stem cells, induce keratinocyte differentiation, and enhance keratinocyte proliferation, survival, migration, and collagen secretion. These findings collectively suggest the multifaceted effects of ASC-EXOs on various cell types that plays a crucial role in wound healing processes and maintaining skin barrier function which was also reflected in our study results.

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**Abstract N°: 674****Pyoderma Gangrenosum-like ulcer secondary to antiphospholipid syndrome**Filip Mijovic<sup>\*1</sup>, Geoffrey Brent<sup>2</sup>, Stephen Sampson<sup>2</sup>, Sophia Paget<sup>2</sup><sup>1</sup>King's College Hospital, United Kingdom, <sup>2</sup>St Helier Hospital, Sutton, United Kingdom**Case report**

We present a case of a 74-year-old lady who developed a tender, rapidly progressive right lower limb ulcer with a violaceous border. Her past medical history included an unprovoked ischaemic stroke and a positive anti-cardiolipin antibody test. Pyoderma gangrenosum (PG) was suspected and treatment was started with oral prednisolone, clobetasol propionate 0.05% ointment and compression bandaging. Histology showed deep ulceration to the subcutis with a neutrophilic inflammatory infiltrate and evidence of thrombosis.

After one month of treatment, the ulcer continued to expand and further deterioration prompted the addition of mycophenolate mofetil (MMF). In view of her past medical history and the microthrombosis seen on biopsy, antiphospholipid syndrome (APS) was suspected. Antibody testing showed a positive anti-cardiolipin IgG and anti- $\beta$ 2-glycoprotein I, whilst lupus anticoagulant was negative. The antiphospholipid antibodies were both positive four months later and she fulfilled the clinical and biochemical criteria for APS. She was diagnosed with a PG-like ulcer secondary to APS and warfarin was initiated.

One month after starting warfarin therapy, her ulcer showed signs of re-epithelisation and the prednisolone was weaned down. Although her MMF had to be stopped due to a retroperitoneal abscess, the ulcer continued to improve. Complete re-epithelialisation was achieved seven months after anticoagulation was commenced, and was sustained on warfarin and prednisolone. Given it could not be certain that immunosuppression did not play a role in the overall improvement, low dose ciclosporin was initiated as a steroid-sparing agent.

Differentiating PG from PG-like ulcers can be challenging given the similar clinical presentation and there is a high level of misdiagnosis. Lack of response to immunosuppression alone in a suspected PG ulcer, as in our case, may be a clue to an underlying thrombotic disorder. Treatment of PG-like ulcers in APS is challenging and there are few reports in the literature with variation in management. In our case, a combination of immunosuppression and anticoagulation was used. Given the rapid improvement following introduction of warfarin, which was sustained despite reducing immunosuppression, we believe this was the key treatment for our patient.

We present a challenging case of a PG-like ulcer secondary to APS with complete resolution following anticoagulation. We urge colleagues to consider this diagnosis in a patient with cutaneous ulceration not responding to immunosuppression, or where there is a history of thrombosis, and treat with anticoagulants promptly.





**Abstract N°: 939****Novel treatment with ciclosporin for post-surgical pyoderma gangrenosum complicated by incisional hernia**Nandini Roy\*<sup>1</sup>, Alphonsus Yip<sup>1</sup>, Narin Shareef<sup>1</sup>, Janakan Natkunarajah<sup>1</sup><sup>1</sup>Kingston Hospital, Dermatology, London, United Kingdom**Introduction & Objectives:**

An 82-year-old gentleman presented with a non-healing wound overlying an existing incisional hernia, which had failed to resolve over 10 months following a Hartmann's procedure on a background of sigmoid carcinoma. On examination 8 months post-operatively, there was a central abdominal full-thickness ulcer, with a raised violaceous border and inflammatory edges. A clinical diagnosis of pyoderma gangrenosum (PG) with an underlying incisional abdominal hernia was made. The protruding hernia was a barrier to adequate healing of the PG ulcer due to repeated trauma, and the stoma bag was an obstruction to placing a hernia belt. The objective was to demonstrate the efficacy of topical ciclosporin as an adjuvant therapy in management of PG complicated by an underlying hernia.

**Materials & Methods:**

The patient was initially commenced on a 5 week regimen of 30mg oral prednisolone and 100mg doxycycline, with the later addition of topical clobetasol and eventually, ciclosporin 0.1% eyedrops to be applied to cover the whole wound and ulcer edge. Serial photographs and measurements of the ulcer were recorded to monitor response to treatment.

**Results:**

Initially, the ulcer had a raised violaceous border and the widest diameter was measured at 11.5cm x 9.5cm. Treatment with 5 weeks of prednisolone, doxycycline and topical clobetasol led to some improvement with reduction in size to 10.5cm x 8cm and reduced inflammation. The prednisolone was slowly weaned off and ciclosporin eye drops were started. Most recent clinical examination revealed the ulcer to be 6cm at its widest diameter with a significant improvement in the inflammation.

**Conclusion:**

Our patient presented with a full-thickness ulcer with violaceous edges and pathergy, characteristic of a clinical diagnosis of PG.<sup>1</sup> Despite case reports of PG occurring at hernia repair sites - to our knowledge, this is the first reported case complicated by a protruding incisional hernia, which is impeding adequate healing of the ulcer.<sup>2,3</sup> Whilst treatment of PG remains largely anecdotal, a range of corticosteroids, immunosuppressants and biologic agents have been utilised both topically and systemically. We present this case as evidence of both the efficacy and absence of adverse effects with use of ciclosporin as a topical agent.

**References:**

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2. Pyoderma gangrenosum after inguinal hernia repair. *Hernia*. 2012 Jun;16(3)
3. Pyoderma gangrenosum after inguinal hernia repair. *Surgery*. 2015 Apr;157(4):828-9.



Abstract N°: 1138

### Managing marine skin damage and stings: algorithm from prevention to treatment

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#### Introduction & Objectives:

As marine tourism and sports are gaining rising popularity and the climate change influences the balance of marine ecosystems, skin damage or marine creature stinging may become a serious medical challenge for doctors. The aim of this review was to create an algorithm presenting managing marine skin damage and stings from techniques of prevention to proper treatment in order to facilitate the diagnostic and therapeutic decisions.

#### Materials & Methods:

We performed review of literature in EMBASE and MEDLINE databases from inception until January 2024, concerning managing marine skin damage and stings (defined as venomous or contact stings from any marine creature).

**Results:** ##### The results were divided into three categories: prevention, first aid and treatment. The prevention included proper preparation including knowledge on the local ecosystem and potential threats, proper equipment along with its conservation technique, adjusting the planned activities to the weather and underwater visibility, avoiding contact with any marine creature with proper technique of evasion etc. First aid included managing the skin damage depending on the type of wound or sting, including dedicated individual techniques, e.g. applying 5% vinegar solution after *Chironex fleckeri* or *Carukia barnesi* stinging or immersing hot water for 60-90 minutes after *Physalia* spp stinging. The treatment, along with antibiotic prophylaxis, was classified based on risk factors including possible tetanus infection and vaccination status, concomitant diseases, wound location and other factors. The most common pathogens identified as infecting marine water-exposed wounds include *Vibrio vulnificus*, *Shewanella* spp, *Mycobacterium marinum*, *Erysipelothrix rhusiopathiae*, *Chromobacterium violaceum*, *Aeromonas hydrophila*, *Edwardsiella tarda*, *Mycobacterium fortuitum*, *Plesiomonas shigelloides*, *Streptococcus iniae*. Routine antibiotic prophylaxis is recommended in immunocompromised, diabetic or chronic liver disease patients, wounds located in the face, palmoplantar, genital region or underlying vascular or lymphatic compromise, deep puncture wounds, damages requiring surgical repair or associated crash injury, wounds located in close bone or joint proximity. A first-generation cephalosporin along with levofloxacin and doxycycline or metronidazole in cases of wounds contaminated with soil or exposed to sewage-water may be recommended as routine prophylaxis, with targeted therapy following as needed. **Conclusion:**

The diagnostic algorithm concerning prevention, first aid and treatment provides quick guidance for doctors in the management of marine skin damage and stings.\*\*





Abstract N°: 1148

## Mortality of Decubitus ulcer across Central and Western Europe: A comparative geographical analysis of temporal trends and burden from 1990-2019

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### Introduction & Objectives:

Decubitus ulcers are often called bedsores or pressure ulcers, these are injuries to the skin and underlying tissue caused by pressure to the skin for an extended period. These are frequently found in people who don't possess the ability to change positions because they're using a wheelchair or are bedridden. The purpose of this research is to identify the impact these ulcers have amongst central and western Europeans and to geographically compare the trends between these regions.

### Materials & Methods:

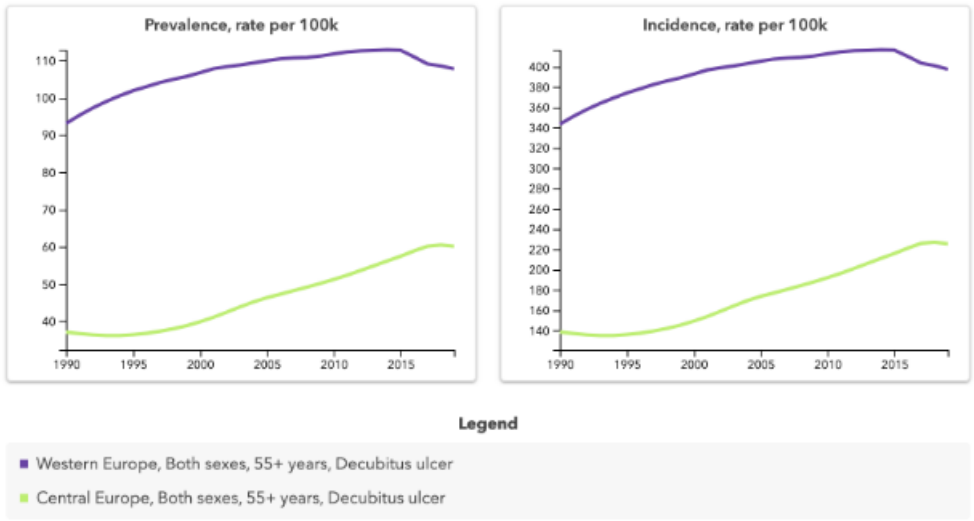
Data was extracted from Global Burden of Disease Study 2019. Incidence, prevalence, number of deaths and DALYs (Disability-Adjusted Life Years) were analyzed by age, year, and location from 1990-2019 in the population of 55+ years. To analyze the burden trend, annual percentage change (APC) was used.

### Results:

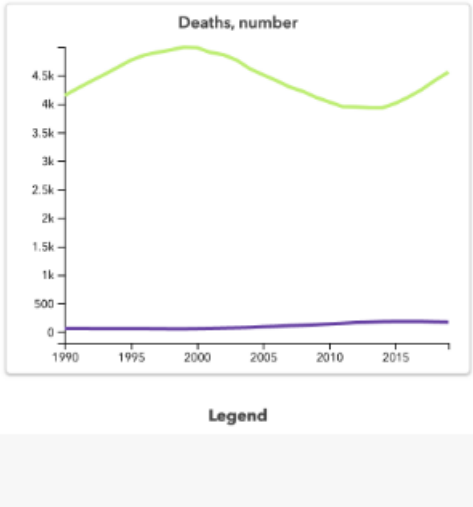
The incidence rate per 100,000 habitants in central Europe displayed an upward trend from 138.65(95% UI: 119.41-160.25) in 1990 to 225.54(95% UI: 201.59-251.59) in 2019 with an APC of 65.47% (95% UI: 54.40-77.80) whilst in western Europe there was also an upward trend from 343.51(95% UI: 300.64-389.94) in 1990 to 397.49(95% UI: 349.67-453.16) in 2019 with an APC of 11.69% (95% UI: 6.26-17.97). The prevalence rate in central Europe demonstrates an APC of 62.25% (95% UI: 52.35-73.69) from 37.08(95% UI: 31.97-42.82) in 1990 to 60.14(95% UI: 53.56-67.22) in 2019; In western Europe there was an APC of 15.75% (95% UI: 10.56-22.04) from 93.16(95% UI: 82.69-104.28) in 1990 to 107.80(95% UI: 95.09-122.26) in 2019. Regarding the DALYs, central Europe's displays an upward trend with a rate of 5.09(95% UI: 3.88-7.42) in 1990 to 7.39(95% UI: 5.53-9.42) in 2019 with an APC of 102.25% (95% UI: 33.64-141.52) contrary to western Europe, which displays a downward trend from 30.55(95% UI: 21.81-44.28) in 1990 to 21.10(95% UI: 15.24-28.85) in 2019 with an APC of -4.77% (95% UI: -21.66-8.68). On other means, the number of deaths rose in both central and western Europe exhibiting an APC of 128.49% (95% UI: -9.95-222.53) from 64.20(95% UI: 48.65-131.29) in 1990 to 171.75(95% UI: 91.63-220.11) in 2019 for central Europe and an APC of -7.38% (95% UI: -26.32-7.58) from 4,150.52(95% UI: 2,523.65-6,123.18) in 1990 to 4,558.31(95% UI: 2,547.81-6,731.91) in 2019 for western Europe. At last, the location with the highest number of deaths was France demonstrating an APC of -38.48% (95% UI: -52.89-22.04) from 1,490.41(95% UI: 533.42-1,813.51) in 1990 to 1,149.92(95% UI: 620.53-1,817.04) in 2019.

### Conclusion:

The incidence, prevalence, and number of deaths of decubitus ulcers amongst Europeans has shown an upward trend across the years which becomes a clear concern for this population, where there should be action taken upon and evaluate how we can prevent and reduce deaths from pressure ulcers.



1. Trends of Decubitus ulcers in Western and Central Europe.



1. Burden of Decubitus ulcers in Western and Central Europe.

Abstract N°: 1204

### Results of Procalcitonin in Serum in Patients with Ulcerative Skin Lesions

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**Introduction & Objectives:** Recently, the problem of ulcerative skin lesions (USL) has become an urgent problem due to chronicization, severe course, resistance to basic therapy and reduction in the quality of patient's life. Recently in dermatology there has been an increase in the incidence of skin diseases accompanied by USL. According to statistics, USL of various etiologies account for about 11.4-14.7% among skin diseases.

**Objectives:** to evaluate the state of procalcitonin in the clinical course of USL taking into account the clinical form.

**Materials & Methods:** We examined 44 patients with USL aged from 11 to 57 years. Among them males were 19 (43,2%) and females - 25 (56,8%). Clinical, microbiologic, histologic, histologic and IFLA, statistical studies were performed in all patients.

**Results:** According to clinical form, 20 patients were diagnosed with trophic ulcer (TJA), 12 patients with ulcerative-necrotic vasculitis and 12 patients with chronic ulcerative pyoderma (ChUP).

The results of IFLA study showed that patients with USL have an imbalance of procalcitonin indicators. The level of procalcitonin in patients with USL was 1.3 times higher than in healthy individuals and was statistically unreliable ( $P > 0.05$ ). Correlation analysis of the procalcitonin level with the state of skin microbiota of the lesions in USL patients showed that in the group of patients with TJA the level of procalcitonin had an average correlation with st. epidermidis and st. saprophytitis - r. saprophytitis -  $r = +0.3$  ( $P < 0.05$ ), in the group of patients with ChUP the level of procalcitonin was in inverse significant correlation with opportunistic microorganisms with st. epidermidis -  $r = -0.6$ , st. haemolyticus -  $r = -0.9$  st. saprophyticus -  $r = -0.5$  and were statistically significant. ( $P < 0.05$ ). Whereas in the group of patients with ulcerative necrotizing vasculitis the level of procalcitonin was in reliable direct correlation with st. aureus -  $r = +0.8$  and inverse correlation with st. epidermidis -  $r = -0.9$  and st. saprophyticus -  $r = -0.3$  respectively. The obtained data had statistically reliable character. ( $P < 0.05$ ).

**Conclusion:** The obtained results indicate that the hormone procalcitonin has a significant relationship with opportunistic microorganisms and the increase in the concentration of procalcitonin characterizes the severity of bacterial infection, which may be one of the criteria for evaluating the anti-inflammatory therapy.

**Abstract N°: 1221****Experimental use of Glaucanite in the treatment of trophic ulcers in white rats**Sardor Obidov<sup>1</sup>, Bekzod Parpiyev<sup>1</sup>

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**Introduction & Objectives:** Recently, in dermatological practice, chronic, persisting, non-healing ulcerative lesions of the skin and subcutaneous tissue have become increasingly common, creating an acute problem in choosing optimal therapy. Among ulcerative lesions, a special place is occupied by the problem of treating trophic ulcers (TU), which are characterized by defects of the skin or mucous membrane that occur after rejection of necrotic tissue, a low tendency to heal and a tendency to recur.

In order to find new methods for healing ulcerative skin lesions, glaucanite powder from a deposit located in the Tashkent region, Uzbekistan, has been developed. The research\*\* aimed to evaluate the effectiveness of glaucanite in the treatment of experimentally induced ulcerative skin lesions.

**Materials & Methods:** The experiments were performed on 20 white outbred rats weighing 200-250 g on the TU model. Ulcerative skin lesions in rats were caused by applying a single subcutaneous dose of 0.7 ml 70% acetic acid solution on the inner surface of the back area. To evaluate the effectiveness of glaucanite, the animals were divided into groups: group I – rats with ulcerative lesions without treatment, group II – rats with ulcerative lesions, which received glaucanite powder. Clinical evaluation of effectiveness\*\* treatment was carried out based on visual observation of the course of the wound process, paying particular attention to the presence of purulent-inflammatory phenomena, the nature of granulation, and the timing of epithelization by microscopic studies.

**Results:** After administration of the toxin, the TU animal model was characterized by forming an ulcerative lesion averaging 1.5x2 and 2x3 cm in diameter. On the 2nd day of the experimental study, the appearance of serous crusts in ulcerative lesions was noted in 8 out of 10 rats. On the 3rd day of the study, the lesion was characterized by severe hyperemia and infiltration with exudative-purulent discharge. On the 4th day of observation, rats of group II received glaucanite powder applied to the lesions of the entire pathological lesion once a day. Glaucanite in the form of sterilized powder was applied to the lesion once a day for 10 days to 10 white rats of the main group of animals. Clinical observations in animals of the main group showed that the use of glaucanite powder contributed to the resorption of lesions, characterized by a decrease in serous-inflammatory processes, swelling, and infiltration on an average of  $4.4 \pm 1.02$  days of observation. On days 6-7, epithelization, crusts, and a decrease in the size of the lesions was noted. Pathomorphological study on the skin of laboratory rats after an experimentally induced trophic ulcer on the 14th day in the course of treatment using glaucanite powder demonstrated the restoration of the stratum corneum on the lesion and ortho-parakeratosis observed in spots. In the epidermis, all layers and structures are completely restored. Healing of trophic ulcers was achieved in all experimental animals, while the healing in animals of group II was on day  $17.6 \pm 0.8$  on average, while in the control group (I) it was on day  $30.3 \pm 0.8$  of observation. The results obtained were statistically significant. ( $P < 0.05$ ).

**Conclusion:** The use of glaucanite in powder form in the experimental treatment of TU in white rats enhances the cellular reaction of mononuclear cells and fibroblasts in the lesion and thereby facilitates cell regeneration and resorption of lesions.

**Abstract N°: 1234**

### **Sequential punch-grafting in hydroxyurea induced leg ulcers**

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#### **Introduction & Objectives:**

Hydroxyurea represents a cytotoxic agent widely used in the treatment of diverse myeloproliferative disorders, particularly essential thrombocythemia and polycythemia vera. Cutaneous adverse reactions encompass atrophy, xerosis, alopecia, dermatomyositis-like lesions, as well as uncommon and more severe conditions such as challenging-to-treat ulcers and cutaneous cancers.

Herein, we present a case of a painful, hydroxyurea induced leg ulcer in a 90-year-old female demonstrating significant pain improvement and complete epithelialization after two punch-grafting sessions.

#### **Materials & Methods:**

A 90-year-old female presented with a painful (10/10 points on the pain visual analogic scale) ulcer persisting for six months, located in the external malleolar region of her left foot. She underwent treatment in other departments with different oral antibiotics, without any improvement. Her medical history was positive for essential thrombocytosis for which she received hydroxyurea treatment for six years. Additionally, she had a history of arterial hypertension and ischemic cardiomyopathy. Physical examination revealed a 8 cm x 5 cm sized ulcer with perilesional atrophy blanche. No edema or signs of infection were observed, and the distal pulses were palpable.

#### **Results:**

Punch-grafting in an outpatient setting was performed using grafts from the anterolateral region of the left thigh. Alginate sheets covered the grafted ulcer and a multi-component compression bandage was applied. Hydroxyurea cessation was recommended. The first dressing change occurred after two weeks and the second punch-grafting session was conducted after four weeks. No cleansing was performed. The procedures were well-accepted. Pain control and complete epithelialization were achieved.

#### **Conclusion:**

Leg ulcers secondary to prolonged intake of hydroxyurea are infrequent, difficult-to-treat ulcers, typically appearing around the malleoli. Discontinuation of the medication is the primary recommendation, although wound resolution is seldom observed, necessitating proper treatment. This case report underscores the potential of sequential punch-grafting as a therapeutic option for hydroxyurea-induced leg ulcers, providing symptomatic relief and wound healing benefits. Further research and larger studies are warranted to validate the effectiveness of this approach and refine its application in clinical practice.



**Abstract N°: 1254****A leukocyte adhesion deficiency associated with extensive and recalcitrant pyoderma gangrenosum-like**Tinhinane Benbrahim<sup>1</sup>, Houria Sahel<sup>1</sup><sup>1</sup>Chu Maillot, Dermatology, Algiers, Algeria**Introduction & Objectives:**

Leukocyte adhesion deficiency (LAD1) is rare. It can be associated with neutrophilic dermatoses such as pyoderma gangrenosum (PG). The treatment of PG is poorly codified and more difficult in patients with concomitant immunodeficiency. We report a case.

**Materials & Methods:**

A 16 year old male child with a history of LAD1 since the age of 13 months, celiac disease, and hemolytic anemia on azathioprine. For three years, he had presented with an ulcerative and necrotic plaque measuring 25cm in long axis, on the inner side of the arm, evolving in a context of good general condition and without fever. The biological assessment revealed anemia at 9.7 g/dl, and leukocytosis at 16460/mm<sup>3</sup> with predominantly PNN 13490/mm<sup>3</sup>. The skin biopsy was in favor of PG-like. MRI and CT of the left arm revealed skin thickening on the inner side of the left arm budding with significant inflammatory changes in the subcutaneous fatty tissue and intermuscular fascia. Bone scintigraphy showed active hot algoneurodystrophy of the left upper limb and diffuse osteopenia. Corticosteroids (CTC) associated secondarily with cyclosporine did not allow recovery. Due to the development of osteoporosis, CTCs were stopped. He then benefited from five courses of immunoglobulin with a slight improvement then relapsed as soon as they were stopped. After three years of progression, the patient was put on cyclosporine at a dose of 3 mg/kg/day for three months associated with surgical debridement. A clear improvement was noted one month after.

**Results:**

LAD is a primary immunodeficiency. It results in necrotic infections without pus and persistent PNN hyperleukocytosis. The only curative treatment is hematopoietic stem cell transplantation. It is frequently associated with other autoimmune diseases (hemolytic anemia, PG-like due to the absence of skin infiltration in PNN (as was our case). This association with PG was reported in the literature only in 20 patients. Various treatments were used for the LAD1 and PG-like association: immunosuppressants (mainly CTC and cyclosporine) and local healing agents. Cyclosporin at a dose of 3 mg/kg/day combined with oral antibiotic therapy and surgical debridement allowed a marked improvement of the lesions. It has been reported recalcitrant PG-like in a 9-year-old female child with a history of LAD1 who received treatment with CTC (1mg/kg/day), cyclosporin and Ig immunoglobulins without improvement. The treatment was replaced by infliximab 10 mg/kg/day and topical tacrolimus in addition to debridement and directed healing procedures with a good response after 8 months. Unlike this case, our patient responded to cyclosporin alone combined with surgical debridement. A series of 161 cases of PG was reported, showing 86% success after adding surgical treatment to immunosuppressive treatments (cyclosporin, infliximab, dapsone, adalimumab, MMF and others). This demonstrates the benefit of the surgical procedure for the management of these patients (which was the case of our patient).

**Conclusion:**

We report a PG-like extensive and recalcitrant associated with LAD1, having posed a therapeutic management problem. The combination of cyclosporin with extensive surgical debridement may be a good alternative for these cases.



**Abstract N°: 1269****a rare differential for painful lower limb ulceration**Claire Quigley\*<sup>1</sup>, Liana Victory<sup>1</sup>, Eoin Storan<sup>1</sup><sup>1</sup>Mater Misericordiae University Hospital Outpatients Department, dermatology , Dublin, Ireland**Introduction & Objectives:**

Herein we present a rare case of hypertensive ulcer of Martorell.

**Materials & Methods:**

A 38-year-old Ugandan female with background history of poorly controlled hypertension and well controlled HIV presented to the emergency department (ED) with a 3-month history of an extremely painful enlarging ulcer superior to her left medial malleolus. While in ED she developed a hypertensive intracranial haemorrhage and resultant stroke. Skin biopsies from the ulcer subsequently showed skin with ulceration and extensive superficial and deep dermal perivascular lymphocytic infiltrate. Fibrinoid change and an "onion skin" appearance was present within the walls of many arterioles without overt vasculitis

**Results:**

A diagnosis of hypertensive ulcer of Martorell was made. This is supported by the history of uncontrolled hypertension, extreme pain and dermatopathology findings excluding vasculitis, as well as the fact that it is occurring on the medial aspect of the lower limb of a female patient. Martorell's hypertensive ulcer is an ischemic lesion of the tissue caused by obstruction of the small arterioles of the medial artery. 1 First described in 1945, Martorell identified the following clinical criteria for diagnosis; location on the inner side of the distal third of the lower limbs; diastolic arterial hypertension in the lower limbs, absence of arterial calcifications; absence of chronic venous insufficiency; symmetrical lesions or residual hyperpigmentation of previous ulceration in the inner side of the inferior limb; increased pain in the horizontal position, with greater prevalence in women.<sup>2</sup> An ulcer with an inflammatory edge occurring in a patient with known IBD is suggestive of Pyoderma gangrenosum while an ulcer on the background of venous stasis dermatitis may suggest ulceration secondary to peripheral vascular disease. The presence of autonomic or peripheral neuropathy may suggest ulceration secondary to diabetic foot and a foul smelling, fungating lesion may raise suspicion for a malignant ulceration. In our patients' case, she met 4/5 criteria for diagnosis in addition to her being a female patient.

**Conclusion:**

We present this case as an important differential for lower limb ulceration. Martorell's Ulcers are rare and other more common causes of ulceration should be ruled out in the first instance. Treatment involves controlling blood pressure and antihypertensive drugs that reduce vasoconstriction, such as calcium channel blockers and inhibitors of angiotensin-converting enzyme are recommended. (1) Healing time can be slow, and pain may be out of proportion to the size of the wound.

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**Abstract N°: 1340**

**A Comparative Analysis of Fractional CO2 and PICO Laser Treatments for Cesarean Section Scars: A Novel Approach to Scar Management**

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**Introduction & Objectives:**

A Comparative Analysis of Fractional CO2 and PICO Laser Treatments for Cesarean Section Scars: A Novel Approach to Scar Management

Cesarean section scars pose a persistent challenge in post-pregnancy women, often leading to dissatisfaction and diminished quality of life. This study aimed to evaluate the efficacy of two laser treatments, fractional CO2 and PICO, in addressing these concerns

**Materials & Methods:**

Twenty female participants were evenly divided into two groups, with one group receiving fractional CO2 laser treatment and the other PICO laser treatment. Each group underwent three sessions at 4-5 week intervals. Patient responses to a scar satisfaction scale were recorded, and evaluations were conducted using the "Patient and Observer Scar Assessment Scale" (POSAS) and Vancouver Scar Scale.

**Results:**

POSAS assessments revealed a statistically significant clinical improvement in the fractional CO2 group, while the PICO group exhibited comparatively less improvement. Surprisingly, despite the lesser clinical improvement, the PICO group reported higher satisfaction, attributing it to faster healing and reduced convalescence time, a trend substantiated by statistical analyses.

**Conclusion:**

This study stands as a unique contribution to the current literature, as no similar publications were identified. The absence of guidelines from gynecologists-obstetricians or physiotherapists regarding optimal scar management after cesarean sections underscores the significance of our findings. The results suggest a potential shift in clinical practice towards considering not only clinical outcomes but also patient satisfaction in scar management strategies. Further research and integration of these findings into medical guidelines may pave the way for a more comprehensive approach to post-cesarean section scar treatment.

**Abstract N°: 1494**

## **Effectiveness of Onion Extract, Topical Steroid, and Petrolatum Emollient in Cosmetic Appearance of Upper Blepharoplasty Scar**

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### **Introduction & Objectives:**

To compare the effectiveness of onion extract, topical steroid, and petrolatum emollient in the prevention of scars in cases who underwent bilateral upper eyelid blepharoplasty.

### **Materials & Methods:**

A prospective, interventional, comparative, double-blinded case series was designed on cases who underwent upper lid blepharoplasty. After suture removal (1 week following the surgery), the eyelids of participants were randomly allocated into the three groups: The first group used onion extract on the right eyelids (n = 18), and the second group used topical steroid on the right eyelids (n = 19). In the third group, the control group, petrolatum emollient was used on the left eyelids (n = 37) of the first and second group's cases. They used drugs for 2 months and were evaluated by the Manchester Scar Scale (MSS) objectively by two graders who were blinded to the type of medication. MSS evaluates five different characteristics of the scar in addition to the Visual Analog Scale (VAS). These characteristics include color, distortion, contour, texture, and transparency. VAS scores the overall scar appearance which ranged among 0-10. The sum of the scores for the five different parameters, and VAS was calculated, analyzed, and compared among the groups.

### **Results:**

A total of 37 cases (74 eyelids) who underwent bilateral upper blepharoplasty were included. The mean  $\pm$  standard deviation (SD) of age was  $51.94 \pm 9.26$  years,  $49.40 \pm 9.37$  years, and  $47.00 \pm 9.06$  years in the onion extract, topical steroid, and petrolatum emollient groups, respectively (P = 0.275). There were no statistically significant differences in the mean  $\pm$  SD of the sum of the MSS scores among the three groups (P = 0.924) or between the onion extract and topical steroid groups (P = 0.951). Furthermore, the color, distortion, contour, texture, transparency, and VAS scores were not statistically significantly different among the three groups or between the onion extract and topical steroid groups (P > 0.05).

### **Conclusion:**

There were no significant differences among these three groups of drugs regarding the appearance of the upper blepharoplasty scar.

**Abstract N°: 1802****Adjuvant treatment significantly shortens the chronic venous ulcer healing time**

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**Introduction & Objectives:**

Venous ulcerations are the most common form of chronic leg wounds since they comprise up to 75% of all ulcer causes. Venous ulcers are the sixth stage of chronic venous insufficiency, usually due to long-term inflammatory changes in the veins, skin, and subcutaneous tissue. While in the past, chronic venous ulcers were treated exclusively with local antiseptics, iodine solution or antibiotic therapy, today's modern therapy primarily includes modern dressings for moist wound healing. Although this approach significantly improves wound healing, sometimes it remains unsuccessful. In that case, adjuvant measures such as negative pressure wound therapy (NPWT) or nutritional support are extremely important.

**Materials & Methods:**

case report

**Results:**

A 62-year-old man presented to the Chronic wound clinic with two ulcerations on the distal third of his left lower leg, erythema of the surrounding skin and severe accompanying pain. The wounds appeared four months ago. Two weeks before the examination, the patient's GP introduced systemic antibiotic therapy with amoxicillin and clavulanic acid for ten days, diuretics and wound dressings, but without any improvement. The patient was otherwise afebrile and in good general condition. The local status showed a deep ulcer of 28x21 mm in the area of the medial malleolus, with a fibrin-covered base and exudation, while on the anterior surface of the distal third of the left lower leg, there was an ulcer of 20x7 mm of similar characteristics. The skin of both shins had signs of stasis dermatitis with marked IV-degree varicosities. Upon the patient's admission to hospital, therapy with antiphlogistics, autolytic gel and mechanical debridement, modern hydrofiber silver wound dressing and portable NPWT was initiated. Nutritional support containing a unique combination of L-arginine, L-glutamine and HMB was also introduced to the patient. After two weeks of such therapy, there was a significant improvement in the local status by cleaning the ulcers' base and reducing their depth and size, along with initial epithelization. The size of the ulcers on the day of the patient's discharge was 24x19 mm in the area of the medial malleolus and 10x4 mm on the front surface of the distal third of the lower leg.

**Conclusion:**

In studies, negative pressure wound therapy (NPWT) and nutritional support have shown statistical significance in the healing of chronic wounds. People with chronic venous ulcers often have protein, vitamin and mineral deficiencies, so replacing these nutrients creates optimal prerequisites for tissue restoration and wound healing. NPWT is an ideal additional therapy in treating venous ulcers, leading to the absorption of excess wound exudate, blood supply stimulation, and granulation tissue formation. Thanks to new knowledge, practical and portable NPWT devices that enable normal mobility and patient work activities have been developed. Special nutritional supplements containing a unique combination of amino acids critical for wound healing are also available for patients with venous ulcers. As our patient's case showed, by using a combination of treatment approaches, namely modern wound dressings, NPWT and nutritional support, it is possible to improve and heal the venous ulcer in a significantly shorter period than would be the case by using individual measures.

