

[EP001] CLINICAL EFFICACY OF A MONOFILAMENT FIBER DEBRIDEMENT PRODUCT A TWO LAYER COMPRESSION SYSTEM OR TUBULAR COMPRESSION EVALUATED IN LEG ULCER PATIENTS WITH RHAGADES AND HYPERKERATOSIS

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Aim: Chronic oedema is multifactorial and often associated with ageing. Skin disorders frequently occur in individuals with venous as well as lymphoedema. Hyperkeratosis is the build-up of keratin on the skin's surface, causing the skin to appear dry and scaly. Understanding the underlying cause of oedema helps the clinician in formulating a comprehensive total treatment approach.

Method: A clinical pathway was developed for patients with chronic oedema, which included debridement* of the wound bed and removal of scales as well as skin care. Depending on the type of oedema and stage a two-layer** rigid bandage system or a tubular*** bandage system was applied.

Results / Discussion: Till to date 132 patients have been treated with the treatment outlined in the clinical pathway. Already after 4 months of treatment improvement was shown. The preparation of the skin is a vital part in the treatment of patients with oedema and is as preparation of the wound bed.¹⁻³

Conclusion: Thorough skin hygiene, exercise and compression with rigid compression bandages in the treatment phase followed by compression garments in the maintenance phase was demonstrated to be successful.

1. Cox NH. Oedema as a risk factor for multiple episodes of cellulitis/erysipelas of the lower leg: a series with community follow-up. *Br J Dermatol* 2006;155(5): 947–50
2. Benbow M. Using Debrisoft for wound debridement. *J Comm Nurs* 2011; 25(5): 17–18
3. Hämmerle, G., Duelli, H., Abel, M., Strohal, R. The wound debrider: a new monofilament fibre technology. *Br J Nurs*. 2011;20: 6, S35–42

[EP002] BENEFITS OF USING BI-LAYERED LIVING CELLULAR CONSTRUCTS IN A BUSY HEALTH MAINTENANCE ORGANISATION OUT-PATIENT WOUND CLINIC

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Aim: Demonstrate effective and efficient use of a bi-layered living cellular construct (BLCC*), in an out-patient wound clinic setting, to reduce both healing time and the long-term negative effects of open wounds.

Method: Patients, selected for the BLCC* treatment, have trained wound-expert nurses apply BLCC* in the out-patient setting. Post wound preparation and application of the BLCC*, primary (silicon mesh) and secondary dressings (PD, SD, respectively) are applied. Ordinarily, PD remains *in situ* for 14 days, with systematic SD changes (performed at our clinic or by a home-nurse). The BLCC* was re-assessed/applied on day 14, based on a standardised optimal outcomes algorithm.

Results / Discussion: Significant healing time improvements were observed, within 6–8 weeks of BLCC* application, with the majority of wounds healing completely. Additional benefits included ease of procedure and patient-reported reductions in pain perception.

Conclusion: Patients with chronic ulcers, often older and multi-morbid, can finally see improvement in their long, arduous and costly recovery. BLCC* application allows prolonged intervals between dressing changes and, in our cases, leads to complete healing in a short, to medium, timeframe. Patients opting for this advanced therapy avoid the additional pain associated with a skin-graft i.e. creation of a secondary wound and local anaesthesia whilst benefiting from a reduction in out-patient/home visits, pain perception accompanied with a more rapid resolution to their wound healing.

*Apligraf®

[EP003] LONG-FIBER ACTIVATED CARBON CLOTH WOUND CONTACT LAYER SPEEDS HEALING OF VENOUS LEG ULCERS: NOVEL ANTIMICROBIAL PROPERTIES IS PROBABLE MECHANISM

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Aim: Black LFACC, long fiber active carbon cloth, a novel antimicrobial dressing has been used in direct contact with the wound surface in veterinary medicine with impressive results. In 2012, motivated in part by the excellent animal results, we began using LFACC as a contact layer in humans. ^{1,2} This anecdotal study asks, can LFACC improve healing of venous leg ulcers, VLUs, treated with elastic compression? ³ Neil and Davies, 1988, described mechanisms to explain active carbon antibacterial properties in vitro. Microbes are entrapped on LFACC's surface, by weak chemical bonds involving cation bridging and hydrophobic interactions with cell walls. ⁴

Method: Six patients with refractory VLUs were treated with FLACC as a contact dressing under foam wrap ^{***} textile wrap ^{****} and fuzzy wale ^{*****} layered compression dressings. Photographs document treatment and wound healing. Data on wound healing rates, time to complete healing, wound bed preparation, and pain are presented.

Results / Discussion: Wound bed appearance improved and patients report pain decreased day #7. Photograph of dressings at day 7 document that LFACC efficiently conducts into absorptive dressings minimizing periwound maceration. VLU healing times are roughly half of the current 29 week average healing time in the US. ⁵

Conclusion: LFACC as a contact layer, in concert with elastic compression, appears anecdotally to: 1. improve wound bed appearance and decrease pain at 7 days; 2. efficiently transport exudate into absorbed dressing; 3. speed healing of VLUs. This study is the lead in study to a formal VLU trial of LFACC.

*Actisorb, Long-Fiber Active Carbon Cloth, Systagenix Global, Gatwick, West Sussex, United Kingdom

**Zorflex® Long-Fiber Active Carbon Cloth, VB-K, Chemviron Carbon Cloth Division, Houghton-le-Spring, Tyne and Wear, DH4 5PP, United Kingdom

*** Coban™ Lite, Two Layer Dressings, 3M Corporation, Minneapolis, Minnesota USA

**** Profore Dressing, Smith & Nephew, St. Petersburg, Florida USA

***** EdemaWear®, EdemaWear®LITE™, Compression Dynamics LLC, Omaha, Nebraska
USA

1. Survey of 12,444 patients with chronic wounds treated with active carbon cloth. Stadler et al. *Akt Dermatol* 2002; 28:351-354.
2. "Malodour and dressings containing active charcoal", Proceedings of 2nd European Conference on Advances in Wound Management, Harrogate 1992, Lawrence C. , Lilly H.A. , Kidson A. Macmillan magazines Ltd, Ed. Harding K.G.. 1993, 70-71.
3. Activated Carbon Cloth in Contact with Venous Leg Ulcer Granulation Tissue is Synergistic with Fuzzy Wale Focused Elastic Compression Therapy, Sara M Winkler BS, Stanford University, Bioengineering. *Journal of Wound, Ostomy & Continence Nursing*: May/June 2014 - Volume 41 - Issue - p S1–S98 From the WOCN® Society's 46th Annual Conference: Nashville, Tennessee June 21-25, 2014.
4. Parameters Affecting Adsorption of Microorganisms on Activated Charcoal Cloth. Neil George & John T Davies. *J.Chem. Tech. Biotechnol.* 1988, 43, 173-186.
5. The real cost of treating venous ulcers in a contemporary vascular practice. David lafrati, Thomas O'Donnell Jr., *J of Vascular Surgery, Venous and Lymphatic Disorders*, 2:4, October 2014, p355.

[EP004] PREVALENCE AND CHARACTERISTICS OF LYMPHEDEMA

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Aim: The purpose of this study was to determine the prevalence, clinical characteristics, and treatment practices of lymphedema in a wound care clinic at a Canadian tertiary care teaching hospital.

Method: Lymphedema patients were identified using an administrative database of the clinic's patients. A retrospective chart review of 326 patients, treated between May 2006 and July 2014, was then performed.

Results: Lymphedema patients represented approximately 20% of the clinic's total volume. The mean age at diagnosis was 67 ± 15.5 . 23% of patients were already being followed by the wound clinic for a different condition at time of diagnosis.

The vast majority of patients had secondary lymphedema (96%). The most common possible etiologies were venous disease (75%), non-cancer surgery (61%), and obesity (45%). Cancer treatment was a factor in only 10% of patients.

The most common treatment modality prescribed at first visit and most recent follow-up were compression bandages (84%) and compression garments (63%), respectively. On average, patients had 7 ± 3.3 comorbid conditions and took 8 ± 4.6 concomitant medications. The most common comorbidities were venous disease (73%), hypertension (60%), and obesity (46%).

Conclusions: A significant portion of the clinic's patients had lymphedema. Secondary lymphedema unrelated to cancer treatment was very common, possibly due to lack of dedicated treatment programs for these patients. Treatment practices at the clinic followed the best practice guidelines of using bandages for initial treatment and garments for maintenance.

[EP005] REPRODUCIBILITY OF APPLIED BANDAGE PRESSURE

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Aim: Compression bandaging is fundamental in the treatment and management of venous leg ulcers and associated conditions. Advancement in bandage technology and innovation has seen several new generation compression systems become available.

The general concern when considering new compression innovation is of safety and sub bandage pressure values, reproducibility of applied bandage pressures and ease of use to facilitate training.

Method: 8 frequent compression bandagers (2 vascular specialists, 2 leg ulcer specialists, 2 tissue viability nurses and 2 Lymphoedema specialists) were invited to apply a new 2 layer compression bandage in three consecutive applications to a healthy volunteer limb. Sub bandage pressure profiles were measured using a monitor* with 3 sensors positioned, B1 ankle, B2 mid and B3 upper calf. Bandagers received one demonstration of the new 2 layer compression bandage. 4 of the 8 bandagers also applied three consecutive bandages of their most frequently used bandage system and a consistency comparison made.

Results / Discussion: All 8 bandagers found the new compression easy to learn and very simple to apply. All bandagers applied remarkably similar pressure profiles with the new bandage system and variation between their 3 applications was minimal (1-4mmHg). (Full results will be presented in a table) Variation in applied pressure profiles between appliers was also found to be minimal. Interestingly more consistently reproduced pressure profiles were seen following application of the new bandage system when compared to their most frequently used.

Conclusion: The findings of this small study suggest the new 2 layer compression system is easy to learn, easy to apply and delivers safe levels of reproducible sub bandage interface pressure.

*Pico press monitor

[EP006] THE USE OF SKIN SUBSTITUTES ON RECONSTRUCTION OF COMPLEX WOUNDS OF THE INFERIOR LOWER LIMB

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Background: Complex wounds of the inferior lower limb are a challenge for reconstruction, characterized by the complete loss of cutaneous tissue associated with exposition of deep noble structures. In these cases, the most frequent solution is an indication of skin graft or flap, however, depending on the affected structures, there is a high risk of amputation and the results are not satisfactory. Skin substitutes were initially used for the treatment of sequelae of burns. Since then, different varieties have been developed which have been used to treat various diseases, including complex wounds unfortunately skin substitutes are available at a high cost.

Aim: The aim of this study is to report the experience acquired with the use of skin substitutes in the treatment of patients with wounds on the inferior lower limb.

Method: Five different skin substitutes were used in the treatment of 21 wounds of different etiologies: 11 cases of ischemic ulcer (11 diabetic); 8 cases of trauma; 2 cases of cellulitis.

Results / Discussion: The 21 patients of distinct etiologies achieved the resolution of its pathologies with adequate functional and aesthetic standards.

Conclusion: The use of skin substitutes can be considered as an alternative treatment for difficult wounds on the inferior lower limb, that still having no standardized treatment since today, occupying its place on the Modern Plastic Surgery, nevertheless its indication must be very well evaluated because of its high costs.

[EP007] IMPACT OF PATIENT EDUCATION ON COMPRESSION THERAPY: A CASE STUDY

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Chronic wounds like venous leg ulcers (VLUs) pose a substantial threat to a patient's quality of life. Compression therapy continues to be a cornerstone in the treatment and prevention of VLUs. It is also crucial in order to reduce VLU recurrence rates. However, an improvement of the quality of life can be achieved if the patient truly accepts the applied compression therapy.

The following case study shows how an adequate and extensive education of the patient and its family improves patient compliance to compression therapy contributing to successful ulcer healing.

A 77 year old female patient was referred to our hospital because she had a VLU at her lower leg which was severely covered with fibrin and colonized with *Pseudomonas aeruginosa*.

On the 24th of October 2013 the wound of the patient was debrided using a dermal curette. On the 5th of November 2013 a meshgraft was taken from her thigh and transplanted to her wound. Afterwards, compression therapy was performed in combination with an intermittent pneumatic compression pump. Initially, the patient hardly tolerated the compression therapy although this improved during in-patient treatment. After subsequent ambulant treatment, the wound situation improved but then stagnated. Extensive talks with the patient revealed that she didn't wear the compression as long as expected. Therefore, once again it was explained to her why compression therapy is important. Additionally, a conversation took place with her family. On the 16th of June 2014 the wound was healed after application of Cutimed Sorbact Hydroactive together with compression.

[EP008] INTERNATIONAL CONSENSUS. SIMPLIFYING VENOUS LEG ULCER MANAGEMENT

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

When faced with a lower limb wound, a clinician's first concerns are understandably often about choosing the right dressing from the plethora available. However, for venous leg ulcers (VLUs) the primary focus should be ensuring that a safe and appropriate level of compression therapy is applied to the leg.

An international group of experts in the management of venous leg ulcers met in December 2014. Their discussions centred on identifying how to encourage wider adoption of compression therapy by simplifying the key principles involved. Their conclusions form the basis of an important new European consensus and are presented as an ABC of VLU management.

It is hoped that this simplified approach will help clinicians to clearly understand why, when, how, by whom and on whom compression therapy should be used. All of us involved in the management of VLUs should set our sights high, overturn the expectation that all VLUs are hard to heal, and enhance life for patients by widening the use of practices that improve VLU healing rates.

[EP009] THE LIVED EXPERIENCE OF PATIENTS HAVING THEIR WOUNDS TREATED WITH MEDICAL GRADE HONEY: AN INTERPRETATIVE PHENOMENOLOGICAL ANALYSIS

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Aim: The purpose of this study was to capture and explore the meanings that patients assign to their experiences when using medical grade honey to treat their wounds.

Method: Six participants were recruited from a support group*. Semi-structured interviews were conducted and the verbatim transcriptions analysed using interpretative phenomenological analysis (IPA).

Results / Discussion: Three superordinate themes were identified: a sense of desperation, the importance of a holistic approach to treatment and the attributes of honey. Analysis revealed a sense of desperation displayed by the willingness to use 'anything' to cure, heal and alleviate pain. The holistic approach to treatment enhanced by the education provided by the support group* allowed the participants to feel autonomous and even suggest honey as a form of prescribed treatment. The lived experiences of honey to treat leg ulcers varied and the two main attributes of honey included: honey being a folkloric medicine and honey being a natural medicine. Participants also expressed positive experiences and identified the beneficial properties and soothing effects of honey. In contrast some participants experienced pain including stinging and drawing sensations when using honey treatment.

Conclusion: This study reveals the complexity of using medical grade honey to treat wounds and highlights the patient's experience within a dynamic personal and social context.

* Leg Club[®]

[EP010] THE EFFICACY, SAFETY AND TOLERABILITY OF NATURAL HONEY IN THE MANAGEMENT OF COMPLEX, RECALCITRANT CHRONIC WOUNDS

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Aim: To assess the efficacy, safety and tolerability of natural Russian honey in the management of complex, recalcitrant chronic wounds of varying etiologies including diabetic ulcers, venous ulcers, traumatic ulcers, burns and hydroxyurea induced ulcers at primary care level.

Method: Eighty five patients with complex, chronic wounds were managed with Russian natural honey utilizing clinical indices of wound area and depth, pain score using the visual analogue score and wound exudate. Time to complete healing and concomitant treatments used were recorded.

Results / Discussion: Seventy five of the 80 patients wounds healed completely (defined as epithelial closure) within twelve weeks of starting treatment. Three patients had clinically recognized reduction of exudate, with one having no improvement in exudate level. Seventy four patients reported decrease in frequency and severity of wound-related pain, with reduced analgesia requirements. Six patients reported an increase in pain level.

Conclusion: The participants presented here had delayed wound healing already and they had been managed for a mean of 10 months, for a range of other co morbidities, including reduction in quality of life, high level of exudate and wound-related pain. The use of natural honey in conjunction with management of co morbid conditions and optimal wound healing management, led to successful healing of recalcitrant wounds, decrease in pain and exudate and should be considered as an important adjunct in the management of complex chronic wounds.

[EP011] COMPREHENSIVE THERAPY OPTIONS FOR PROBLEMATIC VENOUS LEG ULCERS

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Aim: To identify comprehensive treatment options applicable for venous leg ulcers with high microbial load patients were treated with a combination of compression therapy, antimicrobial moist wound care and skin protection.

Method: 13 venous leg ulcers were treated with compression using a stiff 2-layer compression stocking system which exerts a high working pressure and comfortably low resting pressure. For wound care skin protection was combined with a new DACC-coated antimicrobial moist wound care dressing which exerts an antimicrobial effect and moisture management for up to 3 months.

Results / Discussion: After 3 months 92.3 % of the wounds healed completely, 7.7 % reduced in size. After 2 month already 84.6 % of the wounds were epithelized. As the majority of patients had not experienced any progress in healing prior to this treatment for extended periods of time due to their complicate health situation or inadequate treatments the healing results were rated very positively by patients and the physician.

The combination of the easy to apply 2-layer compression stocking system, skin protection and the DACC-coated antimicrobial moist wound dressing was found to be effective, patient-friendly and well tolerated in actual practice.

The patients' well-being was substantially improved leading to high compliance.

Conclusion: Even venous leg ulcers with high microbial load can successfully treated without antimicrobials following an easy implementable treatment approach. Together with close monitoring and guidance of the patient this approach led to a high degree of patient satisfaction and compliance.

[EP012] EVALUATION OF A TUBULAR COMPRESSION SYSTEM AS AN ALTERNATIVE FOR COMPRESSION BANDAGES FOR FRAGILE VENOUS LEG ULCER PATIENTS

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Aim: Case ascertainment was conducted to evaluate if a tubular compression system could be an alternative for compression bandages in ambulant fragile and elderly venous leg ulcer patients.

Method: The two layer *tubular compression system delivers 10 mmHg with the first layer and 30 mmHg with the top layer, which is removed during the night. Sixty patients with venous leg ulcers and an ABI >0.8 were included in the clinical evaluation. Patients were followed weekly for six weeks evaluating: Pain (VAS: - = no pain; +/- = moderate pain; + = pain; ++ = severe pain), comfort, reduction of oedema and concordance (all on a 4 point scale).

Results / Discussion: During the evaluation pain had reduced. Comfort was high for most patients and oedema reduction was effective in all but 6 patients. Concordance was good and only 4 patients needed time to get used to the treatment.

Conclusion: The obtained results indicate that the tubular compression system can be an effective alternative for compression bandaging. Treatment is to be coordinated and patients require follow up visits once weekly to obtain optimal results.

*Actico Silk, Lohmann & Rauscher

[EP013] FEASIBILITY OF COMPLEX WOUND MANAGEMENT IN A GENERAL PRACTITIONER CARE SETTING FOR ELDERLY FRAIL PATIENTS

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Aim: Case ascertainment was conducted to evaluate if a tubular compression system could be an alternative for compression bandages in ambulant fragile and elderly venous leg ulcer patients.

Method: The two layer tubular compression system* delivers 10 mmHg with the first layer and 30 mmHg with the top layer, which is removed during the night. Sixty patients with venous leg ulcers and an ABI >0.8 were included in the clinical evaluation. Patients were followed weekly for six weeks evaluating: Pain (VAS: - = no pain; +/- = moderate pain; + = pain; ++ = severe pain), comfort, reduction of oedema and concordance (all on a 4 point scale).

Results / Discussion: In the region there are 20 general practitioners practices for 18.000 patients, of which 4,4% is older than 80-years of age. The clinical evaluation using the tubular compression system was set up to cater specifically for this elderly population. During the evaluation pain had reduced. Comfort was high for most patients and oedema reduction was effective in all but 6 patients. Concordance was good and only 4 patients needed time to get used to the treatment.

Conclusion: The obtained results indicate that the tubular compression system can be an effective alternative for compression bandaging enabling patients to receive treatment at home. treatment is to be coordinated and patients require follow up visits once weekly to obtain optimal results.

*Actico Silk, Lohmann & Rauscher

[EP014] RECOGNISING THE CHARACTERISTICS OF LYMPHOEDEMA WITH CHRONIC LEG ULCERS

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Aim: Lymphoedema is recognised as contributing to chronic leg ulcers and is a major factor in delayed wound healing yet our understanding of the condition lacks a body of evidence providing objective information to reinforce our treatment choices. This study aims to evaluate a novel method that may enhance the identification of lymphoedema in people with chronic leg ulcers by assessing the usefulness of High Frequency Ultrasound (HFU) to quantify oedema and provide an objective method of distinguishing the presence of lymphoedema.

Method: Participants with chronic leg oedema and chronic leg ulcers were recruited from three centres to a descriptive, observational study to explore the measurement of dermal thickness using HFU compared to current methods of measuring lymphoedema, examining its relationship with wound characteristics and self-reported Health Related Quality of Life.

Results / Discussion: Results to date suggest ankle dermal thickness assessment, provided by HFU, may be useful in objectively measuring the presence of lymphoedema in chronic leg ulcers compared to current methods. The results demonstrate the potential to more fully identify and describe the characteristics of lymphoedema and chronic leg ulcers.

Conclusion: There is limited evidence based research providing a global picture of lymphoedema and chronic leg ulcers and its impact on those affected. This study provides a representation of the characteristics of lymphoedema and chronic leg ulcers and the impact this has on the HRQoL of those affected by the conditions. The future benefit of this may ultimately provide the opportunity for further research in exploring treatment protocols, and predicting better healing outcomes.

[EP015] PAIN MANAGEMENT: INFLAMMATION AND/OR CRITICAL COLONIZATION. OBSERVATIONAL STUDY ON THE COMBINED USE OF A POLYURETHANE FOAM WITH IBUPROFEN COMBINED WITH A CMC NET WITH SILVER SULFADIAZINE

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Aim: Our aim is to identify the underlying disease, planning a therapeutic approach for the chronic leg wounds and demonstrate, with a precise analysis of the ulcer's clinical appearance, a possible reason for the onset of pain. We recruited N° 50 patients with leg ulcers of different etiology without making any distinction between etiology and wound phase, but selected only according to the pain parameter. We recruited as comparison N° 50 patients in the same clinical situation, selected, as in the other group, according to the pain parameter.

Method: We used a net with CMC and silver sulfadiazine on the wound bed as primary medication, and a polyurethane foam with Ibuprofen release as secondary m We collected carefully the data and pictures selected in order to document the evolution of the ulcers in presence of pain, the observation time is 4 weeks, with pain rating scale and local answer of the medication.

Results / Discussion: The analysis of the clinical appearance allowed to demonstrate that all "painful" wounds are related to the presence on the borders of small ulcers with appearance cyanotic/black vasculitis like, while the absence of this data coincides with the absence of pain.

Conclusion: We observed pain relief in 95% of the clinical cases treated, with control of bacteria and proliferation of new granulation tissue.

[EP016] ETIOLOGY OF THE CHRONIC WOUNDS AT INTRAVENOUS DRUG ADDICTS

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Aim: Chronic wounds (CWs) at intravenous drugs users were the consequences of mechanic injuries, chemical – local and systemic toxic effect and inoculations of the microbes, is a local complications participating by 0,5% of total pathology. The aim was to determine, during last years, the ethology of CWs at 21 intravenous drug addicts, age from 16-39 years.

Method: There were different clinical signs - fibrosclerotic growth on the wall of superficial veins, phlebitis, thrombosis, cellulitis, oedema, skin damages. General symptoms included anaemia, hypotensia, tachycardia, myocardiopathia, hepatitis C, immuno deficit, HIV positive analyses, STD. The characteristic of CWs were a long time for healing, a large surfaces and numbers, infection, atypical localisations.

Results / Discussion: Heroin used 70% of all, with polytoxic manner and the first contact with narcotics on 13 years (marijuana), average patient is male, old 27, polytoxicoman, with period of 10 years until the first somatic consequences. The most frequent CWs were: venous, postthrombotic, 9 patients; infective (pyoderma gangrenosum, opened abscess), 6 and posttraumatic-toxic genesis: necrosis of the skin on place of narcotic applications, 6 patients. In this group there wasn't a arterial injuries, obstruction, ischemia and amputations.

Conclusion: CWs in young population were in connection with vasculitis, hereditary thrombophilia, intravenous drug addict and vascular malformations. Diseases of the blood vessels showed faster («speed») aging of the young people, as the consequence of mechanic, chemical and toxic effects of the narcotics. For the prevention, there is a need a systematic, focused exploration of the vascular complications at drug users and to develop centralised data base on the national level.

[EP017] AN EVALUATION OF NEW SHORT STRETCH COMPRESSION SYSTEMS FOR CHRONIC LOWER LIMB CONDITIONS, IN FIVE COMMUNITY LEG ULCER CLINICS

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Aim: Evaluate a new short-stretch two-layer compression system in patients with common chronic lower-limb conditions.

Method: Patients were evaluated for 4 weeks, or until healed. Collated data: Age, underlying diseases, leg ulcer type, duration current treatment. Clinicians and patients: Quality of life, regarding wear time, slippage, strikethrough, pain using a numerical pain score 1-10. Sleep patterns. Compression was applied according to clinical need. Inclusion criteria: Non-healing wound on the lower limb for more than six weeks, suitable for compression. Exclusion: Patients with untreated peripheral disease, ABPI < 0.5 unable to consent. Staff was asked to rate performance, wear time, fluid handling and conformability.

Results / Discussion: 19 patients ranging 42-93, n15 (83%) had chronic skin conditions. Wound duration ranged from 15 years to 5 months. Wound tissue types improved significantly n16 (84%) patients. Quality of life issues pain scores reduced significantly by week 2 n11 (58%) patient's leg ulcers had improved 2 (11%) patients withdrew, n2 (11%) patients in standard compression noted a marked reduction in malodour and sloughy tissue. n16 (84%) rated the overall performance as very good to good. n13. A detailed cost analysis on one patient suggested cost savings £186.92 per month = cost efficiency 43.4%.

Conclusion: This evidence suggests patients attending leg ulcer clinics have more complex ulcers. n12 (63%) had mixed aetiology. The interesting finding in this study was the length of time patients had been treated in the community.

[EP018] AN AUDIT OF COMMUNITY NURSES VIEWS ON CURRENT AND FUTURE LEG ULCER SERVICE PROVISION

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Aim: To assess Community Nurses views about existing and future leg ulcer service provision and to develop consistent, effective patient-centred leg ulcer services in a busy health board.

Method: A mixed qualitative/quantitative approach was applied using a questionnaire which was distributed to all Community Nurses across the Health Board. Responses were collated, analysed and developed for presentation using the Microsoft Excel package and disseminated to area leads for consideration.

Results / Discussion: Leg ulcer service provision in the Health Board requires more equity and standardisation; Community Nurses carry out a large percentage of leg ulcer management in both ambulant and housebound patients; 100% of respondents believed that leg ulcer clinics were the ideal model for service provision; the majority of respondents believed leg ulcer management to be a core Community Nursing skill; and Doppler ultrasound was the biggest identified skill shortfall across all areas.

Conclusion: Optimum leg ulcer service provision should be built around equitable, standardised models of care and leg ulcer clinics embody this ideal. Clinical audit is an effective tool to assist in the improvement of service delivery and leads to an improvement in patient and clinician outcomes. Community Nurses lead in the management of leg ulcers; however the national profile of Chronic Venous Insufficiency should be raised, to ensure multidisciplinary patient centred care provision and elevation of its status to reflect those of chronic diseases.

[EP019] REGENERATIVE MEDICINE - A PRELIMINARY STUDY OF "NON HEALING" LEG ULCERS USING A NEW DEVICE

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Aim: A new device has been tested on 14 ulcers of different etiological origin. The device* is in the form of ointment.

Method: 14 patients (5 males and 9 females – a.a. 59,4 yrs) were enrolled according to the following criteria of inclusion: ulcer onset >6 months, previous ineffective treatments (including graft), pain and no clinical evidence of infection.

7 lesions in diabetic, 3 in vasculitic and 4 in venous patients. All patients underwent to an anamnestic, clinical and instrumental evaluation. Planimetric reliefs of each lesion were performed. QL index was administered to all patients.

Device was applied once two times a week. Device was covered by non adherent gauze and by idrofiber device. A multilayer bandage was applied to all patients. Size, exudation, pain and QL-index were monitored every week for 30 days. The coordinators of study all received the same training.

Results / Discussion: In all almost patients an improvement of objective data was observed. Reduction of exudation and of inflammation in the skin around the ulcers were observed since the first week of device application. Even in 8 patients exudation. These were accompanied by reduction of average wound areas and of pain, respectively of 38,1% and of 57,1% at T30.

Increase of QL-Index was reported in 44,9% of patients.

No adverse or collateral signs were reported.

Conclusion: The application of the device has demonstrated its effectiveness in the recovery of proliferative ulcers "no healing" modulating the inflammatory response. Easy handling the device represents a new approach to ulcers "no healing" helping to reduce symptoms and improve the QL-index of these patients.

*T-Lysyal (a new supramolecular aggregate)

[EP020] TREATMENT OF CHRONICAL LOWER LEG ULCERS WITH TOPICAL HEMOGLOBIN SPRAY

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Aim: Primary diseases such as peripheral arterial occlusive disease, chronic venous insufficiency, diabetic foot syndrome may lead to a long term reduction in oxygen supply to the tissue. Partial pressure of oxygen in tissue is reduced, owing to capillary degeneration, which leads to consequent necrosis and chronic wounds formation.

The healing of chronic wound is accompanied by increased energy metabolism of the skin. It requires more oxygen than normal metabolism of healthy skin. Even if sufficient amount of oxygen is available in the air, it cannot cross the bottom of the wound due to the diffusion barrier. We tested if oxygen from the air can be available for cellular activity and healing through topical application of hemoglobin spray on the wound bed.

Method: In a pilot study we treated 10 patients with chronic lower leg ulcers of different etiology, without systemic or local signs of inflammation. After flushing the wounds with local antiseptic solution, topical hemoglobin spray was used and covered with non-occlusive silicon-polyurethane modern dressing. We applied hemoglobin spray every 2-3 days for 16 weeks.

Results / Discussion: Surface area of ulcers as well as secretion rate have diminished and epithelisation of wound edges and scar formation was noted.

Conclusion: Cells need at least 20mmHg of oxygen partial pressure to survive, wound closure/granulation/epithelisation require a minimum of 40mm Hg. Consequently in the case of hypoxia, stagnation of the wound healing is present. Use of natural oxygen transporter – hemoglobin as a topical application in a form of a spray can be helpful for wound healing.

[EP021] A TECHNOLOGICAL SILVER MOUSSE IN THE TREATMENT OF PERILESIONAL SKIN

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Aim: To prove that a new technology silver mousse can be a simple and effective treatment for the healthy and wounded skin.

Method: We treated 30 patients with chronic wounds of the lower limb and dry or macerated or wounded perilesional skin using a mousse containing silicon dioxide, ionic silver and chlorexidine*. The treatment was to apply the mousse all over the skin of the leg at every dressing change. We evaluated the change of the skin in terms of humidity, the healing of microlesions, the improvement of the wound edge and the infection incidence. The observation lasted four weeks.

Results / Discussion: All patients had a good result after only two treatments. No allergy, nor adverse reactions even if we treated four patients with known allergy to metals (silver included). In every patient we had the complete healing of microlesions, the improvement of hydration in those with dry skin and a reduction of maceration damages in those with heavy exuding wounds. No infections of the wounds, no signs of inflammation on the perilesional skin.

Conclusion: This treatment showed to be effective, easy to use and safe. All patients evaluated: "Very comfortable" the treatment: the skin appears smooth and healthy. The most evaluable feature seems to be the effectiveness on both dry and macerated skin: the property of protection of the mousse is maybe the cause of the efficacy on the macerated skin; the hydration effect is due to the lenitive components of the mousse. This treatment could help to manage better the skin of the patients that use multilayer bandages for a long time.

*Kadermin Mousse (Pharmaday)

[EP022] SILVER BASED DRESSINGS (SBD) FOR LEG ULCERS

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¹Ao Sangerardo

Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Aim: To test the healing rate of silver based dressings (SBD) under compressive bandage (CB) for chronic leg ulcers.

Method: In the period 01.2014/10.2014 we observed 30 outpatients with chronic leg ulcers (venous 16 VLU / mixed 14 MLU) and tested the effect of a SBD (adsorbent anginate+Ag dressing) under a conventional "home made" tricomponent bandage (double and short extension / 30-40 mmHg applied), changing dressing 2 times in the 1st week and then once a time per week. Our protocol included biochemical exams, a swab and a systemic antibiotic approach if clinically appropriated. SBD was applied irrespective to swab or biochemical results. Rate of healing < 8 and > 8 weeks and number of dressings have been recorded as primary clinical outcomes.

Results / Discussion: All the patients healed, 4 MLU and 4 VLU patients requiring > 8 weeks, mean number of dressings needed to heal greater (t-Test 2.14, p<.05) for MLU patients (13.2 / range 4-38) than for VLU patients (7.3 / range 3-19). Swabs were +ve in 21/30 cases, and antibiotics were administered in 7 patients in the 1st week: healing rate was indifferent to swabs result and to systemic therapy.

Conclusion: SBD under compressive bandage showed excellent outcome. Healing need more dressing changes in MLU and about 30% of patients in both groups required care > 8 weeks. No correlation was observed, as expected, between swab results and outcomes. Recent data did not favor silver for elective management of VLU even if widely applied. Bandage skills are the other critical factor in managing leg ulcers and can represent the key factor.

[EP023] CHALLENGES FACED BY HEALTH CARE PROFESSIONALS IN THE PROVISION OF COMPRESSION HOSIERY TO ENHANCE COMPLIANCE IN THE PREVENTION OF VENOUS LEG ULCERATION

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Aim: To enhance the current delivery of patient information and staff training in the management of compression hosiery in an NHS Trust.

Venous leg ulceration affects 1 in 500 people in the United Kingdom, having a detrimental effect on a patient's quality of life. Prevalence increases with age and has high recurrence rates, compression hosiery is acknowledged as the mainstay of treatment and prevention although is hindered by non-concordance.

Method: A pilot questionnaire was administered to 26 in nurses exploring the current information provided to patients and their knowledge and opinions of hosiery which was amended with refinements to the questions and a second questionnaire was administered.

Results / Discussion: Application difficulties and discomfort were the main reasons given for non-compliance

70% of patients had experienced difficulties with hosiery application.

90% of staff provided verbal advice when prescribing hosiery, although less than half (46%) provided written information and felt that patients did not understand the importance of compression hosiery. This suggests inconsistencies in the information that is currently provided to patients to enable them to take sufficient responsibility for their own leg health and concern as to the appropriateness of hosiery selection and measurement.

Conclusion: To improve clinical and financial outcomes, the health care professional should focus on shared responsibility with patients being encouraged to take an active role in their care. Therefore, the provision of appropriate information and support to enable patients to comply with treatment is as important as measurement, selection and fitting the hosiery.

[EP024] COMPRESSION OF THE FOOT: CHALLENGING THE 'NO COMPRESSION' RULE

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Aim: To explore the historical context of the 'no compression to the foot' rule and provide an alternative and effective solution.

Method: Nursing staff within the UK are taught a standard application technique for compression therapy, with minimal tension being applied to the foot. The assumed rationale for this is comfort and risk reduction, set in a context of the the fear of causing harm. This paper presents 3 key adverse consequences of this approach:

- Oedematous and unmanaged foot
- Oedematous toes
- Footwear problems

Results / Discussion: A lack of compression to the foot can lead to a lack of tolerance of much needed compression therapy. Solutions to this are presented with a focus on critiquing the historical context and current practice, safe techniques for compressing the foot and risk management. The use of inelastic compression applied in a firm weave to the foot is demonstrated. The impact on oedema management is significant, tolerance is increased and this is further illustrated through the views of the patients who find this technique preferable and supportive.

Conclusion: This paper challenges the commonly held belief that no compression should be applied to the foot. Safe techniques for therapeutic compression are provided and improved outcomes and patient tolerance are demonstrated.

[EP025] INFLUENCE OF FOAM DRESSING WITH IONS ON BACTERIAL ISOLATED IN PATIENTS VENOUS LEG ULCER

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Wednesday, May 13, 2015

E-poster session: Leg Ulcer

Aim: The aim of the study was analysis of dynamics of bacterial flora isolated from leg ulcers treated with foam dressing with silver ions.

Method: Fourty four patients were qualified to the study and divided randomly into two groups. In patients from group I foam dressing* with silver ions was used. In patients from group II hydrocolloid dressing** was applicated. For both groups of patients, microbiologic diagnostics was performed before treatment and after 5 and 10 weeks after beginning of treatment.

Results / Discussion: All ulcerations were microbiologically positive before beginning of treatment. After 5 weeks of treatment, in patients of group I and in patients of group II, 7 and 20 bacterial isolates were cultured, respectively. After 10 weeks of treatment, no bacterial isolates were cultured in group I, whereas 7 bacterial species were isolated from the ulcerations of patients of group II. Use of silver dressings significantly improves local treatment of critically colonized and infected wounds.

Conclusion: Obtained results show ability of foam dressing* with silver ions to decrease bacterial count in venous ulcerations, thereby improving wound healing.

*Biatain® Ag, Coloplast

** Unna's boot