

Conference Report: LINK for Wound Balance Congress 2023

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The fourth LINK for Wound Balance Congress, powered by HARTMANN in partnership with Wounds International, took place in Barcelona, Spain on October 17–18, 2023. The main theme of the congress was ‘Wound Balance’, a concept that describes how regaining balance of the wound microenvironment can normalise healing to improve the patient’s experience and their quality of life. The objectives of LINK Congress 2023 were to present updates on new medical concepts, to give speakers and delegates the opportunity to discuss best clinical practices in wound care, and to provide an advanced educational experience to all participants. The focus of the congress was on two key areas: advanced wound healing and negative pressure wound therapy.

The Wound Balance plenary session opened with Dr Alison Garten who presented the Wound Balance concept (Wounds International, 2023; *Figure 1*). She described the three main components of Wound Balance and how implementation of the concept in her daily practice helps drive appropriate wound care, to ultimately improve the patient’s quality of life (QoL) and heal their wound. She emphasised that aiming for Wound Balance constitutes a shift in focus, from managing wounds to leveraging the healing process, and induction of advanced modalities wherever possible and as early as possible. Dr Alison described how patients tend to feel embarrassment and shame, especially if they experience odour and leakage, and she highlighted the need to consider the patient experience and how living with a wound impacts on patients’ QoL. She went on to discuss the success of using superabsorbent polymer (SAP) dressings in practice and outlined several case studies that used Zetuvit Plus Silicone Border (HARTMANN) dressings.

Next, Professor Dr Hans Smola discussed the factors that prevent a wound from progressing, as well as the critical role of wound biomarkers. He emphasised how the diagnostic process is highly individualised to the patient, which subsequently determines which clinical pathways are followed in practice. Focus was placed on the biomarkers that affect Wound



Figure 1. Wound Balance concept (Wounds International, 2023).

Balance and prevent wounds from healing. Excessive levels of matrix metalloproteinases (MMPs), interleukin (IL)-1 β and tumour necrosis factor alpha (TNF- α) are elevated in chronic wounds, and it was discussed that when SAP-containing dressings are applied to wounds, the pattern of these excessive biomarkers can be shifted towards a trajectory resembling acute wound healing.

Sharon Truth went on to discuss how the concept of Wound Balance can be adopted in conjunction with the National Wound Care Strategy Programme (NWCSP) Leg Ulcer Recommendations (NWCSP, 2023). The aim is

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to challenge the mindset of the clinician away from ritualistic practice that delivers paternalistic care, to encourage a transition in clinicians' focus from managing wounds to healing wounds through early implementation of immediate and necessary care. Sharon emphasised the need for a standardised approach – as every chronic wound starts as a small wound – and she presented two case studies where patients achieved improvements to their lower limb wounds, following incorporation of early evidence-based intervention. It was stressed that education and communication are of utmost importance, and she urged clinicians to seek help from industry where appropriate – e.g. to help with running educational events.

Dr Christine Blome and John Schäfer presented in tandem the different aspects of QoL that are relevant to working-age patients, why it should be a major treatment goal, how it can be measured and how clinicians can help improve it. Dr Christine emphasised that by measuring QoL, clinicians can target treatments to individual patients more effectively. Use of the Wound-QoL patient questionnaire (Blome et al, 2014) and the accompanying praxis tool Wound-Act was encouraged, rather than simply asking the patient questions, as it is a valid and reliable tool that can be tested statistically, save time and overcome language barriers. John Schäfer presented several case studies showing how chronic wounds can limit the patient's ability to work and take part in social activities, as well as cause them to worry about their finances. He described how clinicians should frame questions around specific points of the Wound-QoL questionnaire that relate to the patient's specific concerns and needs. A key take-home message was the importance of considering the working-age patient's occupation, and how understanding their unique problems can help bring about wound healing.

The therapeutic alliance between patient and clinician was explored by Dr Florian Dumas. Dr Florian expressed the need to consider the patient as a partner in their care and to involve them right from the start at the initial consultation, by listening to them, giving them an opportunity to talk and discuss their concerns, evaluating their understanding about their health condition and giving them the necessary explanations in relation to their care plan. He stressed that part of the caregiver's role is knowing when to step back, and that there is no such thing as a small wound, so clinicians need to keep up-to-date with their knowledge.

Advanced wound care

The following session on advanced wound care opened with a discussion on the challenges that cancerous wounds present, which develop when cancerous cells infiltrate and proliferate within the skin. Tabatha Rando explained that there is no perfect wound dressing for all cancerous wounds, and in palliative care, focus needs to be on providing comfort to the patient. Tabatha provided an overview of a quality improvement project that is currently underway and aims to evaluate the performance of silicone superabsorbent polymer (SSAP; Zetuvit Plus Silicone Border) dressings in patients with cancerous wounds. Nursing staff were asked to complete product evaluation forms post-dressing procedure in patients with cancerous wounds. Of the evaluations that have been completed, it was found that 92% of nurses stated that SSAP dressings contained exudate within the dressing, 87% rated the dressing's atraumatic application and removal as good or excellent, and 82% scored patient wound comfort during dressing wear time as good or excellent. Tabatha concluded that Zetuvit Plus Silicone Border achieved the expected clinical outcomes, and that it was the preferred treatment option by nurses and patients due to advantages over other dressings.

Next, Astrid Probst spoke about how SSAP-containing dressings are used in her practice to help control symptoms, such as pain and malodour, protect the surrounding skin and prevent complications. Astrid discussed the importance of talking with patients about their therapy goals and identifying ways in which the multidisciplinary team can fulfil these. She presented two case studies in which Zetuvit Plus Silicone Border Heel and Sacrum were used in combination with HydroClean (HARTMANN) to successfully remove bacteria and help wounds heal. Astrid emphasised the psychosocial impact that highly exuding wounds can have on the patient, and highlighted how SSAP-containing dressings can be used for the treatment of chronic wounds with positive effects on patient QoL.

Helena Vicente went on to look at the challenges of exudate management in the case of malignant wounds. She outlined four clinical case studies that considered the exudate management performance of polyacrylate dressings in highly exuding wounds, in complex anatomical sites and in malignant wounds with exophytic mass. It was found that all patients felt comfortable with the malleability and adaptability of the RespoSorb Super dressing (HARTMANN). There was also

no leakage of exudate and use of the dressing reduced perception of odour. The evaluation concluded that the structure of polyacrylate-containing dressings can help fill a gap in the care of complex wounds. However, Helena emphasised that it is up to the clinician to make an appropriate decision regarding treatment for the individual patient.

Dr Alton Johnson spoke about effective exudate management and how lower extremity wounds are often highly exudative, which results in a variety of different challenges in clinical practice. Dr Alton shared his experience of switching dressings to Zetuvit Plus and presented multiple cases involving wound types of the lower extremity, including cases of graft-versus-host, venous stasis and scleroderma. Through implementing a new protocol, Dr Alton found that patients' experiences improved alongside noticeable changes in odour control and wound base appearance, as well as reduced frequency of daily dressing changes. A key take-home message was that superabsorbent dressings should be the standard of care in all wound types of the lower extremity with moderate to heavy exudate, to aid with wound healing, infection control, odour control and management. It was noted that early use of superabsorbent dressings should be combined with some form of compression therapy for the most optimal outcomes.

Recent work that has highlighted the value of using multilayer dressings, to help prevent and reduce the risk of pressure ulcers, was explored by Dr Emmanuelle Candas. She discussed the findings of a study in which an experimental and computation analysis framework was developed to show that multilayer dressings, such as RespoSorb Silicone Border (also known as Zetuvit Plus Silicone Border), may have major technological advantages in preventing pressure ulcers (Gefen et al, 2020).

Next, Carsten Hampel-Kalthoff discussed the challenges in practice when treating obese patients. Carsten highlighted the case of a 61-year-old obese patient with swollen lower legs, chronic venous insufficiency and numerous ulcerations. Previous therapy was changed to multilayer compression therapy, lymphatic drainage and introduction of Zetuvit Plus dressings. The patient was also given targeted education on why there were copious amounts of exudate, how important movement is and how to sit down in a way that improves leg reflux. As a result, a reduction in oedema was observed alongside complete healing of the venous leg ulcer and an improvement to the patient's QoL. Carsten concluded that incorporating the Wound

Balance concept and improving knowledge transfer between the clinician and the patient is vital to ensure success.

Jodi Edge and Ellen Davies explored the importance of a patient-centred approach in wound care. They emphasised that living with a wound can have a significant impact upon the patient, affecting their mental health, overall wellbeing and lifestyle. Two case studies were presented, which showed how implementing the right wound management plan with engagement from the multidisciplinary team, families and carers improved patient outcomes.

Dr Cornelia Erfurt Berge elaborated on the subject of inadequate exudate management and excessive exudation. She spoke about the need for a structured approach to wound exudate assessment, and to focus on the patient's individual needs. Dr Cornelia presented various cases showing how causes of increased exudation are multifaceted, and can be due to severe oedema, wound infection or inflammation. She emphasised that care for patients with highly exuding wounds not only involves local wound therapy (e.g. cleansing, debridement, selection of an appropriate dressing and initiating compression where necessary), but also requires classification of the underlying cause of excessive exudation (e.g. patients with inflammatory disorders) and determining treatment goals with the patient.

Next, Donna Ashton presented a case of a patient who had pyoderma gangrenosum (PG) for over two years, and how changing treatment to a Hydro Responsive Wound Dressing (HRWD; HydroClean) enabled the wound to progress towards healing. The dressing was chosen as previous attempts to achieve wound healing were unsuccessful. Within the first few weeks of using the dressing, a vast improvement was observed alongside a reduction in pain, infection and exudate. After 3 months, the wound had progressed to healing and steroid treatment was discontinued. It was concluded that use of a HRWD in a complex PG case helped improve the patient's QoL and allowed nurses to regain confidence in their ability to manage complex wounds.

Dr Stephan Eder introduced the topic of diabetic foot infection (DFI) and gave an overview of the International Working Group Diabetic Foot guidelines (Schaper et al, 2023), which present several recommendations for the diagnosis and treatment of DFI. Dr Stephan spoke about 'diabetic foot attack', which is considered to be one of the most devastating presentations of diabetic foot (Vas et al, 2018), and he discussed

several case studies in which patients with diabetic foot presented as an emergency. Dr Stephan stressed that early and timely diagnosis of DFI and prompt treatment is crucial for leg preservation.

Gilian Dixon concentrated on the prevention of hospital admission in the management of haematomas. Treatment of haematoma usually requires hospital admission for surgical debridement and skin grafting. This can have cost implications for healthcare systems and can negatively impact the patient's health and wellbeing. HRWD was proposed as an alternative treatment option, and Gilian presented a case study in which an 81-year-old female who was self-caring for an extremely painful wound had seen no improvement after 5 weeks. The wound was reassessed and treatment with the HRWD HydroClean Advance (HARTMANN) was commenced, which has a specific mechanism of action that supports the softening and autolytic debridement of devitalised tissue.

Professor Amit Gefen explained in detail about how cell deformation is the main factor causing pressure ulcers. He shone a light on how the risk of developing device-related pressure ulcers, due to breathing/continuous positive airway pressure (CPAP) masks, can be reduced through suitable cushioning materials at the mask-skin interface. Professor Amit outlined the results of a study which determined the facial tissue loading state under an oral-nasal mask while using hydrogel-based dressing cuts (HydroTac transparent dressing [HARTMANN]) for prophylaxis for medical device-related pressure ulcers (MDRPUs; Grigatti and Gefen, 2022). The study found that hydrogel-based dressing cuts reduced tissue exposure to loads, by at least 30% at the nasal bridge and by up to 99% at the cheeks, across tissue depth. These dressings demonstrated protected efficacy at all the tested facial sites but performed best at the nasal bridge and cheeks, which are at risk of the greatest injury.

The topic of choosing the right dressing, despite the growing availability of wound care products, was explored by Norbert Kolbig. He discussed the results of an evaluation which found that the products clinicians most frequently use are foam wound dressings, alginates/hydrofibers, superabsorbents, wound contact layers and HRWDs. Norbert termed these dressings 'the big 5', highlighting that they are sufficient for the care of most chronic wounds. Further take-home messages from his talk were to not change products too frequently and to always reevaluate the treatment plan after 14 days.

Jo Constant described the positive impact that designing a community-based pathway for haematoma management had on the lives of patients and clinicians at Medway Community Healthcare in the United Kingdom. It was underlined how the nurse-led team had identified variations in practice and a lack of knowledge and confidence in haematoma management among clinicians, depending on where patients presented. They noticed a gap in knowledge of the diagnosis of haematomas and the ability to differentiate haematomas from bruises, which led to a delay in effective wound bed preparation. As a result, her team designed a new community-based pathway in April 2022 (Constant and Reed, 2022). They also trialled a HRWD (HydroClean Advance) on patients with a haematoma to their lower limbs. It was found that the dressing softened the haematoma, reduced pain and helped prepare the wound bed for conservative sharp debridement. Since its implementation, the pathway has been utilised with effect, and Jo's team have been able to diagnose and treat complex wounds in the community, which previously would have required a hospital admission.

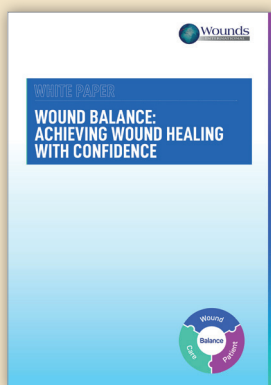
Negative pressure wound therapy

Running alongside the advanced wound care programme was one that focused on negative pressure wound therapy (NPWT), co-chaired by Professor Dr Tomasz Banasiewicz and Professor Dr Lenka Veverková. First, Professor Dr Tomasz spoke about the complex nature of the wound healing process, and how NPWT has been shown to effectively support and improve each stage of the healing trajectory. He explained that in postoperative wounds, NPWT can reduce the number of complications, particularly surgical site infection, make the wound smaller and reduce the patient's pain. He concluded by stressing that clinicians need to familiarise themselves with how to use NPWT effectively to heal wounds and reduce the likelihood of complications developing.

Associate professor Dr Marek Smolár elaborated on the increasingly widespread use of NPWT in breast surgery. It was explained that extensive mastectomies and breast reconstruction operations are two surgery types that can be associated with a high risk of developing complications. Dr Marek emphasised that in the context of breast surgery, NPWT can be used prophylactically, to reduce the formation of postoperative seroma, and therapeutically, in the healing of surgical complications. Several case studies were presented concerning the



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therapeutic use of NPWT in complications after extensive procedures for breast cancer. Patients were treated with Vivano NPWT system (HARTMANN), and in two of the cases, NPWT promoted a gradual reduction in wound size, making the case for this therapy as a key element in managing complicated breast operations.

Dr Marie-Christine Plancq introduced the topic of purpura fulminans, which is a rare and serious disease involving haemorrhagic and necrotic skin lesions with septic shock that may lead to death in 30% of cases. Dr Marie-Christine spoke about how survivors present with skin necrosis, which is managed with debridement. It was discussed that NPWT is useful following debridement to optimise soft tissue before reconstruction with skin graft, flap or artificial dermis. Case studies were presented in which all the patients were children under age 1 with deep, severe and extensive skin necrosis. Management with NPWT in all the patients helped prepare and optimise the skin for surgical reconstruction, and it was concluded that NPWT is a safe and efficient adjunctive therapy for the treatment of purpura fulminans.

The use of NPWT for the management of complications following extensive oncological resection in the head and neck region, and reconstructions with free flaps, was explored by Dr Dominik Walczak. He described an investigation that aimed to evaluate the usefulness of NPWT in the treatment of oral cutaneous fistulas, pharyngocutaneous fistulas or salivary contamination of head and neck wounds. Twenty-five cases of fistulas in head and neck wounds were retrospectively analysed. All fistulas were treated with NPWT and the therapy was compared to standard care of wounds with fistula. It was found that in 24 patients (96%), fistula closure was completed only by NPWT, and the mean period to fistula closure was 10 days. The time to fistula closure, length of hospital stays, and associated costs were reduced for patients treated with NPWT, as compared to standard therapy. Therefore, Dr Dominik concluded by emphasising that NPWT is effective for the treatment of fistulas in the head and neck region following extensive oncological resection and reconstructions with free flaps.

Dr Balázs Bánky explored the use of NPWT as a tool to prevent or postpone major amputation. He emphasised that chronic wounds of the lower limb require a complex and multidisciplinary approach. Dr Balázs outlined the results of a prospective clinical study that was performed in Hungary in 2018, in which 24 patients with foot ulcers secondary to micro- or macro-angiopathy,

or peripheral arterial disease who received NPWT were followed up postoperatively. Short- and long-term effectiveness of NPWT was assessed, and it was found that in 95% of cases, complete healing or partial healing was achieved. Over the median 4-year follow up period, healing was permanent in half of the patients, and only 4 out of the total 24 patients required major amputation. Dr Balázs highlighted that NPWT is effective in terms of limb salvage, but it was stressed that further prospective and comparative studies with a larger sample size of patients is needed.

Next up was Dr Adam Bobkiewicz, who introduced the topic of enterocutaneous fistula (ECF), which is a pathological communication between the gastrointestinal tract and skin. Dr Adam emphasised that in order to optimise the patient's condition, a comprehensive treatment approach is needed, including sepsis control, nutrition support, assessment of anatomy and a plan of definitive treatment. It was discussed that NPWT can be used to achieve effective skin care and control fistula output, and Dr Adam spoke about how an individualised approach needs to be taken for each patient. He concluded by stressing that patients with ECF should be treated by a centre with significant experience in managing ECFs, and that a multidisciplinary approach is vital.

Dr Emilie Raimond discussed a study that aimed to investigate the impact of NPWT (prophylactic and therapeutic) on postoperative complications in vulvar cancer surgery. Eighty-three female patients that underwent surgery for vulvar cancer between April 2007 and December 2022 were included in the study. It was found that complication rates (disunion and infection) were higher in the group of patients treated with systemic vacuum-assisted closure (VAC) therapy without impacting the recurrence rate, as compared to the group of patients receiving conventional care. It was concluded that the study did not show any benefit of using systemic VAC therapy in reducing postoperative complications of vulvar cancer surgery. However, Dr Emilie emphasised that NPWT is an essential tool for the therapeutic and prophylactic treatment of wound breakdown following surgery, and can help in delicate areas such as in the treatment of vulvar diseases.

Professor Dr Lenka Veverková shone a light on the early initiation of open abdomen treatment using NPWT for better patient outcomes. Professor Dr Lenka discussed an evaluation that involved analysing data gained from a hospital information system related to patients treated

with NPWT. The following were evaluated using a case mix: length of treatment, mortality and effectiveness of treatment. It was found that an increasing trend exists for the use of NPWT for open abdomen treatment between 2012 and 2022, and there was evidence for the therapy's effectiveness. Professor Dr Lenka emphasised the importance of referring to the 2020 World Society of Emergency Surgery updated guidelines for guidance on when to use NPWT. She concluded that due to population ageing and a rising number of individuals with comorbidities, there is a need for the increased uptake of advanced technologies, such as NPWT, to treat these patients.

The session concluded with Dr Máté Jancsó, who spoke about how treating complicated soft tissue defects in various anatomical regions is a major challenge for all surgical specialties, including plastic surgeons. Dr Máté presented various case studies in which NPWT was used for both surgical preparation – to provide the ideal wound bed for reconstruction – and postoperative care to facilitate healing. The case studies demonstrated the therapeutic use of NPWT and how the therapy is complemented by the synergistic effect of modern intelligent dressings. Dr Máté concluded by stressing that NPWT has a role to play in plastic reconstruction

and in limb salvage, as well as in the preparation of potentially septic surgical sites, to ultimately accelerate wound healing and improve outcomes for patients. **WINT**

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