Optimising Wound Bed Conditions in Diabetic Foot Ulcers Using Hydroconductive Debridement Dressings

Ian Wilson[1], Terrence Gorvett[2], [1]Podiatrist, [2]Diabetes Specialist Podiatrist [1]University Hospitals Birmingham NHS Foundation Trust, [2]Abertawe Bro Morgannwg University Health Board. Contact: Ian.Wilson@uhb.nhs.uk

Introduction:

- Diabetic Foot Ulcers (DFU) are complex, often chronic, wounds which can have potential long-term effects on morbidity, mortality and life quality
- DFU are multi-factorial and particularly up one to non-healing and episodes of infection which are difficult to diagnose due to abnormal presentation[1]
- Provision of an optimal wound healing environment is vital to achieve wound closure and minimise complications
- Debridement is a key component of optimising wound bed conditions alongside reduction in bioburden and excess matrix metalloproteinases (MMPs) and management of moisture levels to achieve effective wound bed preparation (WBP) and promote healing[1]
- Alternative methods to sharp debridement for maintenance debridement and WBP need to be utilised in between specialist appointments by non-trained clinicians[2]
- Drawtex Hydroconductive Debridement dressings utilise LevaFiber technology which allows the dressing to absorb many times its own weight in fluid, wicking exudate, microbes and MMPs into and across the dressing and loosening devitalised tissue to remove all the barriers to healing
- This multi-centre evaluation aimed to appraise the ability of Drawtex dressings to optimise the wound beds of DFU to achieve maintenance debridement and support epithelialisation

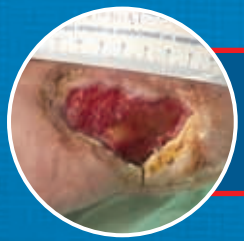
Method:

- Four patients with sloughy, moderate to highly exuding DFU with signs of delayed healing were included from 2 specialist podiatry clinics
- Drawtex was cut to the size of the wound and applied in 2-3 layers with a suitable secondary dressing or bandage used to secure
- Patients received appropriate pressure relief/offloading as indicated
- Wound assessment, measurements and photographs were taken weekly for up to 4 weeks or until the wound bed was adequately prepared and showing signs of healing

Case Study 1 - Week 0
Wound Duration: 24 Weeks
Wound Size: 4 x 3 x 0.4cm
20% Slough
Highly Exuding

Case Study 1 - Week 6
Wound Size: 2.5 x 1.7 x 0.3cm
100% Granulation
Moderately Exuding

Case Study 2 - Week 0
Neuro-Ischaemic DFU
Wound Duration: 18 Weeks
Wound Size: 8.3 x 6.5 x 2cm
65% Slough Highly Exuding



Case Study 2 - Week 7
Wound bed now 100% Granulation with evidence of good epithelialisation

Case Study 2 - Week 15
Complete epithelialisation

Results:

- All four wounds showed evidence of increasing granulation tissue and epithelialisation, demonstrating removal of devitalised tissue and reduction in wound size and depth
- Exudate levels were well-controlled and integrity of the surrounding skin was improved and maintained
- There were no reported incidences of infection
- Clinicians reported the dressing was easy to use and apply, finding the ability to cut the dressing to various shapes and sizes useful when applying to sometimes difficult anatomical positions
- The dressing remained intact, even when saturated, which was particularly useful on plantar ulcers where walking and pressure from footwear can often cause movement and shredding of other dressing types
- Patients found the dressing comfortable when in-situ

Discussion and Conclusion:

- Drawtex Hydroconductive Debridement dressings exhibited effective WBP of DFU through debridement of devitalised tissue, achievement of good moisture balance and control of bioburden
- Necrotic, cellular and bacterial burden affect wound healing[2] – the multiple modes of action of Drawtex Hydroconductive Debridement dressings provide a straightforward way of addressing these burdens which can be utilised by any clinician caring for DFU
- Hydroconductive debridement can potentially reduce the negative effects on patients and hence on the health service and the economy through availability of a probable cost-saving method of managing difficult and challenging wounds like DFU, although this would require formal cost-effectiveness studies

This different dressing technology can be used as a first line treatment strategy for efficient and simple maintenance debridement of DFU, removing the barriers to healing and minimising the risk of infection, allowing the wound to begin to progress through the normal stages of healing

References: 1. International Best Practice Guidelines: Wound Management in Diabetic Foot Ulcers.Wounds International, 2013. Available from: www.woundsinternational.com Accessed 28/10/14 2. Falanga V, Brem H, Ennis WJ et al. (2008) Maintenance Debridement in the Treatment of Difficult-to-Heal Chronic Wounds:Recommendations of an Expert Panel OWM 54 (6 Suppl): 1-20 3. Bullough L (2014) Hydroconductive Debridement Made Easy. Wounds UK 10(2). Available at www.wounds-uk.com Accessed Oct. 2014

CRIT/10/2014/304 Date of Preparation: October 2014 Supported by Martindale Pharma