A Clinical Evaluation of Iodozyme Dressings for the Management of Patients with Diabetic Foot Ulceration

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Introduction
Diabetic foot complications result from two broad pathologies-neuropathic and neuro-ischaemic feet (Turns, 2013), diabetic foot ulcers that occurs as a result of these may be difficult to heal (Papanas et al., 2012) and prone to infection (Armstrong, 2011). Furthermore the practical aspects of healing wounds in patients with diabetes can be a challenge due to the number of complications that can affect the healing process (Basu and Shukla, 2012), whether neuropathic, ischaemic, acute or chronic all require effective wound management. Therefore the clinician has to consider what dressings/treatments provide the best options to aid treatment of both aspects. A unique dressing that provides such a treatment is the dressing lodozyme™, which incorporates an advanced biochemical system which produces a low level of hydrogen peroxide, to generate iodine within the dressing. The dressings consist of two hydrogel layers which when brought together at point of use initiate a biochemical reaction which generates a low level of hydrogen peroxide with subsequent release of both iodine and oxygen. These components provide an antibacterial activity (Fournel et al., 2010; Tschudin-Sutter et al., 2012) and enhance healing (Al-Waili and Butler, 2006; Chambers and Leaper, 2012) respectively.

Method
Following assessment, two patients were identified who had Diabetic Foot Ulceration (DFU). First wound was large and neuropathic in origin (chronic wound) and the second wound also large and ischemic (acute surgical wound). A clinical decision was made to dress their wounds with Iodozyme as part of their management plan. Sharp debridement and pressure relief measures were implemented along with antibiotic therapy when required according to the presentation of the clinical signs of infection. Lodozyme was applied as a two layer application; primary layer was cut to fit the wound and second layer cut to fit within the edges of the primary layer. A secondary foam/absorbent dressing was applied. Dressings were changed in accordance with clinical need, on average 2–3 times per week initially. For the purpose of the study each wound was followed up until healed (primary outcome).

Secondary outcomes considered were:
• Condition of surrounding skin
• Patient comfort whilst dressing in-situ
• Patient comfort on dressing removal
• Wound progression towards healing
• Frequency of dressing change
• Resultant scarring once healing achieved

Discussion
In this study patients with DFU treated with the lodozyme dressing demonstrated an excellent wound healing response, an improvement in peri-wound skin and importantly no issues relating to infection. In order to aid this healing progression lodozyme provided rapid debridement and appeared to stimulate angiogenesis during the proliferative wound healing phase. It was clear that the dual action (via an active enzyme system) of providing oxygen to stimulate healing and iodine to prevent topical infection was successful in overcoming challenges seen in the treatment of DFU. Currently no other dressing application offers this unique inclusive system and also positively addresses the patient outcomes.

Case Study 1
A male patient that lived with his family and fully employed he was 52 yrs old, with poorly controlled diabetes, renal disease on APD, neuropathy and Charcot Foot. Wound features: Extensive diabetic foot ulcer located on the left heel (caused by a blister) that presented with plugs of slough, exudate level 4 +, dark granulation tissue and had been present for 2–3 months. The only previous medical treatment/intervention included self-care following GP advice.

Case Study 2
A 60 year old male (smoker) with, neuropathy, PAD and poorly controlled Type 2 diabetes. He was admitted with deteriorating wound to his right foot that was infected, necrotic + gangrenous. Treatment at this time was revasculisation (angioplasty + stent) and amputation of R/5th with surgical debridement and IV antibiotics. Further vascular surgery was required in April 2013 to the right limb. Healing rate of this wound was very slow and likely to be linked with continued smoking and poor diabetes control. lodozyme was used to aid healing, reduce infection and clean the wound. The dressing was able to be cut to fit extensive and awkward wound areas. There were no concerns about applying over tendons as the dressing helped to keep them moist. When wound size had reduced considerably (September 2013) lodozyme application ceased as it was impossible to cut and apply to such a small wound.

Results
In both patients the wounds healed and the condition of the surrounding skin improved.
• Comfort whilst the dressing was in-situ, was reported as excellent or good
• Patient comfort on dressing removal was reported as excellent or good
• Both foot ulcerations progressed to healing.
• Frequency of dressing changes reduced with improvement of wound.
• Resultant scarring was minimal

Conclusion
Iodozyme dressing was deemed to be effective and beneficial for managing DFU. The dressing provides a unique approach to wound healing and produces positive patient outcome. In both patients the chronic and acute surgical wounds healed.

References: