Cleansing chronic leg ulcers with Perifoam:

GARY BAIN RN MClined BN DipApSc
Clinical Nurse Consultant
Director Wound Management Services
Sydney Adventist Hospital

ABSTRACT

Cleansing chronic wounds is a ritualistic and time honoured practice. Leg ulcers generally harbour volumes of bacteria, dressing debris, devitalised tissue and exudate. Delayed wound repair, malodour and ulcer pain are not uncommon sequelae. Washing wounds with a tea-tree oil based foam seemed to moderate these phenomena.

BACKGROUND

Debate exists as to the value of washing down obviously healing wounds\(^1\). However, the cleaning of ulcers containing devitalised tissue, dressing debris, exudate accumulation and malodour seems to be a widely accepted practice\(^2\). Since 2006, the Sydney Adventist Hospital’s Wound Clinic has utilised Perifoam (Bio-Assist Industries) in the wound cleansing of chronic lower leg ulcers.

Perifoam’s cleansing ingredients are largely derived from surfactants and complex alcohols, whilst its antibacterial actions are based on Tea-Tree Oil (Melaleuca alternifolia). Indigenous Australians recognised the antiseptic and mild anaesthetic properties of Tea-Tree Oil. Its anti-inflammatory effects were described in more recent times\(^3\).

Since commencing Perifoam, Wound Clinic patients and staff have reported the following qualitative phenomena:

1. Reduction in wound malodour.
2. Gradual decrease in peri-wound erythema.
3. Gentler wound cleansing and therefore reduced pain during this procedure.

METHOD

Permission was obtained from the Sydney Adventist Hospital’s Human Research Ethic’s Committee prior to the commencement of this study.

Incorporating the expertise of the Sydney Adventist Hospital’s Wound Clinic and Pathology Services personnel, a non-blinded, randomised, pilot study was established. The sample size of 10 patients was essentially dictated by the financial and time constraints imposed upon the investigation.
The majority of patients who attend the Wound Clinic for assistance with their leg ulcers are in fact under the care of other health professionals – general practitioner, practice nurse or community nurse. The Wound Clinic provides advice and will often act in a supervisory or monitoring role as the patient’s care proceeds. Only a diminutive number of patients go to the Clinic on a weekly basis for on-going leg ulcer management. It was from this group of patients that participants were sought for the trial. The inclusion/exclusion criteria are detailed in Table 1.

The Control Group (5 patients) had their wounds cleansed with potable tap water only. The Experimental or Test Group (5 patients) had their ulcers covered with Perifoam for a 5 minute dwell-time prior to cleansing with potable tap water. Patients in both groups did not have any aspect of their dressing, bandages or medications altered during the period of the trial – spanning two visits to the Wound Clinic.

The two groups of patients had their wounds swabbed at the commencement of the study prior to washing, again immediately after cleaning, and then again on their next visit (usually 7 days) prior to cleansing.

Patients with painful ulcers were provided with analgesia prior to the swabbing procedure or alternatively, they were requested to take their usual pain relief prior to attending the appointment.

DISCUSSION

It is acknowledged that open wounds, including leg ulcers, contain bacteria. Staphylococcus aureus (50%) and mixed coliforms (30%) were the predominant varieties isolated from the study’s patient population. However, only when either the number of bacteria or their virulence are sufficient to overwhelm the host’s immune response, is infection likely to prove problematic(1).

Wound cleansing may assist in reducing foreign matter, dressing remnants, necrotic tissue and excess exudate, all of which may act as foci for infection(2). Enhancing the cleansing process via the topical application of a known bacteriostatic and anti-fungal agent (in this instance, Tea-Tree Oil) is a logical supposition.

The study methodology dictated that in effect, testing revolved around the one cleansing event and therefore the singular application of Perifoam. The microbiologist suggested that the small changes demonstrated between the swabs [as seen in Table 3] may have been more significant had the wounds been cleansed with Perifoam daily - especially in the interval between swab 2 and 3. An alternative patient population, whether within an inpatient or a community care setting, may prove more amiable to a daily cleansing and dressing procedure and therefore be better placed to evaluate outcomes derived from regular treatment with Perifoam.

CONCLUSION

Minimising or eliminating odour, preventing infection and reducing pain are legitimate treatment outcomes irrespective of the wound healing result(7). Anecdotal evidence based on Wound Clinic / patient interactions, suggests that Perifoam provides at least short term...
relief from malodour and that it lessens the pain associated with the wound cleansing procedure for most recipients.

The methodology and sample size of this study are unable to provide any conclusive evidence as to the effect of Perifoam on the bacterial flora located on the surface of chronic leg ulcers. Alternative patient care environments, larger sample numbers and more frequent product application with subsequent analysis, may reveal a more substantial view of Perifoam’s potential anti-microbial action.

ACKNOWLEDGEMENTS

The author would like to thank the following individuals for their assistance with this study:

Mary Graham, Bio-Assist Industries
Nola Hitchick, Senior Microbiologist, Sydney Adventist Hospital [SAH]
Bevan Hokin, Manager Pathology Services, SAH
Cath Wade and Fiona De Sousa, Infection Control, SAH
Lynda Matthews and Corilda Le Rossignol-Grant, Wound Clinic, SAH

This study was sponsored by Bio-Assist Industries Pty Ltd.

REFERENCES


6. Cooper, R A review of the evidence for the use of topical antimicrobials in wound care. WORLD WIDE WOUNDS Feb 2004