THE USE OF SILVERCEL® NON-ADHERENT DRESSINGS ON BURN WOUNDS: A CASE SERIES
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Introduction

The burn wound can be defined as local tissue damage caused by a burn injury with the associated resultant responses of inflammation, regeneration and repair. It is a dynamic changing milieu that is both susceptible to and responsible for the many local and systemic disturbances that characterise a burn injury. The endpoint of burn management and therapy is wound healing and epithelialisation as soon as possible in order to prevent infection and to reduce functional and aesthetic after effects (Salas et al 2005).

Burn wound infections are one of the most important and potentially serious complications that occur in the acute period following injury. The most important patient characteristics that influence morbidity and mortality from burn wound infection and sepsis include large TBSA wounds (>30%), significant amounts of full-thickness burns, prolonged open wounds or delayed initial burn wound care.

Several factors contribute to infection in burn wounds, notably the destruction of the skin barrier, the presence of necrosis and sero-sanguinous exudate, and impaired immune function. The risks are commensurate with the depth and extent of the burn, the health and age of the patient, local perfusion of the tissues, and use of systemic antibiotics. As burn eschar may be some distance from patent vasculature, systemic agents (i.e. oral and parenteral antibiotics) are unlikely to achieve therapeutic levels at the burn site, whereas topicaly-applied agents, appropriately dosed, can achieve effective bioburden control (Best Practice Statement, 2011).

Current clinical practice is to use Flamazine as the first line antimicrobial therapy, only changing to Acticoat if the wound becomes infected or patients are referred with cellulitic wounds. However, the problem with Acticoat in all its formats is that it adheres to the wound bed making removal painful and traumatic.

Case One

Mrs X is an 88 year old lady who lives in a nursing home. In June 2011 she fell against a radiator and sustained a deep burn to her right lower back (See Fig 1). This was initially treated conventionally by using Flamazine and Mepilex Border.

However by September 2011, the wound remained unhealed. It was decided to try Silvercel Non-Adherent (See Fig 2).

The wound responded well after one week of treatment (See Fig 3).

By October the wound was almost healed (fig 4). The patient experienced no problems with the dressing, she found it comfortable to wear and it did not adhere or cause trauma on removal.

After 7 days treatment

Case Two

Mrs Y is a 42 year old lady who is epileptic. She initially burned both feet after spilling boiling water on them during a fit in March 2010. Most of the areas healed but she was left with chronic ulceration under her left foot. This was treated with a variety of dressings but healing was never achieved so in June 2011 she was re grafted using Matriderm, a dermal skin replacement and a split thickness skin graft. Initially there was good graft take, but this then broke down (See Fig 5).

After 1 week treatment with Silvercel Non-Adherent fig 6

Fig 5

After 3 weeks Treatment fig 7

After 5 weeks (fig 8) Treatment, wound almost healed.

Fig 7

Mrs Y, found the dressing comfortable to wear, it allowed her to mobilise and was easily removed without causing her pain or trauma to the wound.

Fig 8

Case Three

Mr Z is a 43 year old male with a flame burn to his left forearm in June 2011. This happened when he was using an angle grinder on a mat soaked with petrol. A spark ignited the mat and Mr Z’s clothes caught fire, causing a deep burn to his arm (See Fig 9). Initially Mr Z was treated conservatively with the usual dressings of Flamazine and Atrauman, however unfortunately the wound became infected with Staphylococcus aureus after 2 weeks and the dressing was changed to Silvercel Non-Adherent.

Fig 9

Commeenced with Silvercel Non-Adherent

Fig 6

After 1 week treatment

After 7 days treatment

After 10 days treatment

Mr Z. found that the dressing reduced pain, was comfortable to wear and was removed easily without causing pain or trauma.

Fig 10

Method

Silvercel® Non-Adherent (Systagenix) is a new generation of absorbent antimicrobial dressings which has been specifically designed to minimise the pain and trauma often associated with wound dressing changes. Silvercel contains elemental silver at 111mg/100cm² and is designed for the management of infected wounds or wounds in which there is an increased risk of infection. Specifically, it is a non-woven pad composed of a high G (guluronic acid) alginate, carboxymethylcellulose (CMC) and silver-coated nylon fibres, laminated to a perforated, non-adherent ethylene methyl acrylate (EMA) wound contact layer. The dressing was evaluated in a number of case studies.

Discussion

The use of topical antimicrobials is fundamental to prevent infections in deep and superficial burns as bacterial colonisation may delay healing. Hemdon (2007) suggests that maintaining wounds at low colonisation levels diminishes the frequency and duration of septic episodes caused by wound flora. Given the increasing microbial resistance to antibiotics, the use of antimicrobial dressings to prevent progression of infection or re-infection could significantly decrease the need for treatment with systemic antibiotics.

Conclusion

Silvercel Non-Adherent seems to give us the same properties of other elemental silver dressings in terms of its efficacy but is without the problems of drying out and adherence, which is common in other silver alginate dressings. We have seen resolution of infection in acute burn wounds and improvement in appearance of some static burn wounds, and this case series demonstrates that this dressing has the potential to replace our existing practice of using Acticoat. However a more structured analysis of the efficacy of the dressing will be required before this can be introduced as first line management for cellulitic burn wounds.

References

