

FLAMINAL® FOR THE TREATMENT OF AN INFECTED WOUND

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Introduction

Once the integrity and protective function of the skin has been compromised, large quantities of microbes will enter a wound and initiate an inflammatory response. The classic signs of infection are pain, erythema, heat, oedema and purulent exudate. If the host is unable to control the growth of microorganisms localized wound infection results. Uncontrolled localized infection of a wound can rapidly lead to more severe infections such as extensive cellulitis, osteomyelitis, bacteraemia and sepsis.

Whilst there is an impressive armamentarium of antimicrobial dressings available to healthcare professionals for the treatment of infected wounds, the much sought after antimicrobial properties of these dressings are accompanied by cellular cytotoxicity. Flaminal® (Crawford Healthcare, UK) is an antimicrobial enzyme alginogel with a unique mode of action. It maintains a moist wound healing environment whilst continuously debriding the wound and it restores the bacterial balance. As the enzyme system kills only the bacteria absorbed inside its alginogel structure, it does not affect those cells responsible for wound healing.^{1,2}

Case study

A 62 year old lady, who was otherwise in good health, was bitten on her foot by an unknown insect. Within 24 hours she felt unwell and was pyrexial and after 72 hours her condition had deteriorated: she suffered emesis and her foot and leg were swollen and blistered. She was admitted to hospital and IV antibiotics commenced. The leg continued to deteriorate with substantial tissue damage evident under the blistered skin. She was moved to ITU as she was considered at risk of necrotising fasciitis.

Once her condition had stabilised she was transferred to the plastic surgery ward. Her wound was dressed with Flamazine®, Jelonet® and gauze. The wound improved and the patient was transferred to the Plastic Surgery Outpatients Clinic for wound dressing. The surrounding skin was discoloured and swollen and there were large deep necrotic areas that required debridement. At each visit the leg and foot were washed with water and moisturised with Vaseline® whilst the wound was cleaned with saline. Sheet hydrogel was selected as the wound dressing for comfort, ease of application and its ability to hydrate the area, thus facilitating debridement. Unfortunately, the area quickly became infected again. Oral antibiotics were administered and the dressing regime was changed to Flaminal® Hydro.

Figure 1.



Flaminal® Day 0

Dressing changes were three times a week for the first two weeks and then twice a week until the wound healed.

Figure 2.



Flaminal® Day 21

The wound is clean and granulating.

Figure 3.



Flaminal® Day 28

The wound shows further improvement greatly reduced in size, necrotic tissue now lifted exposing a much cleaner healthier wound with a small amount of slough.

Figure 4.



Flaminal® Day 56

Once the wound had healed, the lower leg and foot appeared dry and scaly. A dermatologist prescribed a moisturiser which improved the quality of the skin.

Discussion

Control of an infected wound requires a multi-faceted approach including wound cleaning, debridement, initiation of antibiotics and application of an antimicrobial dressing. Necrotic tissue provides an excellent breeding ground for bacteria and so debridement is an essential first step in the treatment of an infected wound. Wound cleaning can remove non-adherent bacteria although there is a risk of mechanical trauma to the wound bed, therefore a gentle method is typically selected.

In this patient, Flaminal® Hydro facilitated wound healing by removing necrotic tissue and controlling the wound bioburden. Within one week of Flaminal® Hydro treatment a significant improvement was noted in the wound bed. Unlike other antimicrobial dressings, Flaminal® is non cytotoxic to those cells involved in wound healing, such as keratinocytes and fibroblasts. Keratinocytes are key cells involved in wound healing and migrate from the wound edges to cover the wound, thus reducing the surface area of the wound. Fibroblasts help form granulation tissue, which results in a decreased wound volume. Flaminal® has previously been shown to be active against a range of Gram negative bacilli, Gram positive cocci, yeasts and fungi.³

Conclusion

Infected wounds may rapidly become life-threatening without appropriate treatment. Flaminal® is a novel antimicrobial dressing that controls the wound bioburden without damaging cells central to wound healing.

Key points

- Flaminal® Hydro facilitated wound healing by removing necrotic tissue and controlling the wound bioburden
- Flaminal® is non-cytotoxic to those cells involved in wound healing