

Use of Honey in Managing Burn Wounds

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Introduction

With the current backlash against silver dressings meaning that often burn professionals are being at best challenged about their silver product use, and in some instances unable to access these products, there is a need to perhaps look at alternative antimicrobial dressings. One of these is potentially honey based dressings. Honey has been used for 2000 years to treat wounds, and whilst having a recent resurgence in popularity, it may still not be given its deserved recognition.

Several factors contribute to burn wound infection, notably, the destruction of the skin barrier, the presence of necrosis and sero-sanquinous exudate and impaired immune function (Desanti 2005). 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 (Best Practice Statement 2011). Traditionally burn wounds have been managed with topical silver based dressings, but a Cochrane Review suggests that there is evidence that Honey may have a role to play (Jull et al 2008). White and Molan (2005) identified a number of properties for honey:

- Antimicrobial properties
- Promotion of autolytic debridement
- Deodorising of malodorous wounds
- Stimulation of non healing wounds
- Promote moist wound healing
- Stimulation of anti-inflammatory activity

Methods

Honey dressings now come in many forms, including, ointments, non-adherent dressings and alginates. There is a need to understand the efficacy of these products in terms of preventing infection in burn wounds as well as the acceptability/usability of the product on clinical practice.

Case Study 1

Mr. D was a 28 year old male who sustained flash burns to his face and right arm after putting petrol on a bonfire (see figs: 1 & 2). He was initially treated with arachis oil application, but once crust began to form he was dressed with Algivon® (see figs: 3 & 4).

Algivon® is an alginate dressing impregnated with 100% medical grade manuka honey. The alginate fibres enable a sustained, slower release of honey. Algivon® is an ideal choice for wetter wounds as the alginate has a small capacity to absorb, meaning the honey isn't washed away with exudate therefore staying at the wound site for longer.

The Algivon® was applied and changed every 48 hours, 2 applications were required and then full healing was achieved. Fig 5 shows Mr. D's face at 20 days post injury and fig 6 at 41 days post injury with some residual scarring due to sun exposure and failure of Mr. D to apply sun protection adequately.

Mr. D found the dressing comfortable to wear, the staff found the dressing easy to remove and apply and time to healing and quality of healing were good.

Case Study 2

Mr. T is a 63 year old man who has a history of Parkinson's, hypertension, acute renal failure and a previous left calf DVT. He collapsed at home against a radiator for 8 hours before he was found and taken to hospital. He sustained full thickness burns to his left hand and shoulder in February 2012 (see fig: 1). He was initially treated conservatively as he was being investigated for the reason for his fall in a local DGH. The wound to the shoulder was initially treated with Flamazine and then Actiform Cool and healing was achieved in June 2012.

The wound broke down however a few weeks later and initially it was treated with Terra Cortril as it was overgranulated and then Flamazine but with little improvement over a period of 6 weeks (see fig: 2).

It was decided to try honey as this had not been utilised previously. Activon Tube® contains 100% Manuka honey with no additives. Manuka honey will de-bride and de-slough, eliminate odours and provides a moist wound healing environment. Activon®

was applied to the wound with Advazorb Silflo® to ensure the honey was in contact with the wound and to prevent slipping. Fig 3 shows the wound after 7 days application and fig 4 shows the wound almost healed after 10 days application.

Mr. T found the dressing comfortable to wear and staff found the dressing easy, to apply and remove. The staff felt there was a good rate of healing compared to other products tried on this non healing wound.

Case Study 3

Mr. A, was a 33 year old man who initially sustained 30% burns to his face, hands, arms, legs and genitalia in February 2011 from an electrical flash. His only previous history was of epilepsy which was moderately controlled. He sustained deep burns to both hands and genitalia which have required numerous subsequent reconstructive events. In June 2012 he received a full thickness graft to the palmar aspect of his left hand (see fig: 1). Unfortunately Mr. A was not prepared to refrain from sport and work and he suffered a number of infections to the grafted area, resulting in loss of graft (see fig: 2).

During this time the wound was treated with a range of topical antimicrobials; Flamazine, Acticoat Absorbent, Aquacel Ag and a range of oral antibiotics. As these were not improving the wound appearance it was decided to treat the wound with honey. Actilite® is a light viscose net dressing coated with antibacterial Manuka honey & Manuka oil. The antibacterial effect of Actilite® has been enhanced

by combining high grade antibacterial Manuka oil with Manuka honey. The combination of Manuka honey and Manuka oil has been demonstrated in-vitro to be effective against a number of major wound infecting organisms including MRSA, VRE and *Providentia stuartii*. This dressing proved to be very effective and figs: 3 & 4 show the wound improvement. The Actilite® dressing was found to be easy to apply and remove, conformable around digits and painless for the patient.

Results

These case studies demonstrate the positive benefits of applying honey to burn wounds. There were no instances of infection in any of the wounds treated and acceptability by both patients and staff was good.

Conclusion

Further more detailed assessment of these products needs to be carried out but these case studies demonstrate that there is potential to use Honey as an alternative to silver as an antimicrobial to prevent wound infection in burns. Within our burns service we have a structured process to evaluate dressings and this will be taken forward following these case studies.

References

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- Desanti, L. (2005) Pathophysiology and Current Management of Burn Injury *Advances in Skin & Wound Care*. 18:6, 323- 332.
- Jull AB, Rodgers A, Walker N. Honey as a topical treatment for wounds. *Cochrane Database of Systematic Reviews* 2008, Issue 4. Art. No.: CD005083. DOI: 10.1002/14651858.CD005083.pub2
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Fig: 1 initial injury Fig: 2 prior to Algivon® application



Figs: 3 & 4



Fig: 1 1st graft check Fig: 2 4 weeks post surgery



Fig: 3 After 8 days of Actilite® Fig: 4 After 17 days of Actilite®



Figs: 1 & 2 initial injury



Figs: 3 & 4 pre Algivon® application



Figs 5 & 6