# ACHIEVING CLINICAL OUTCOMES: THE USE OF HONEY

This article outlines the action of honey and its use in wound care, focusing on its key characteristics to assist the clinician. Case studies on the use of honey dressings including Activon Tulle® (Advancis Medical), Mesitran® (Aspen Medical) and Medihoney™ (Derma Sciences) will be highlighted to show how clinicians can use them appropriately and apply an evidence-based approach to care.

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## Objectives of wound management

Tissue viability is a challenging area of care and relates to the prevention, healing or management of symptoms of a variety of wounds (White, 2008).

The key to the appropriate management of wounds is accurate assessment and the development of clear objectives, which are agreed upon by both the patient and clinician (Stephen-Haynes, 2010). Assessment is defined as 'information obtained via observation, questioning, physical examination and clinical investigation in order to establish a baseline' (Collins et al, 2002). Objectives are the steps taken to achieve the overall aim.

The objectives of wound management are as follows:

- Promotion of granulation tissue
- Promotion of epithelialisation
- Debridement
- Reduction in patients' pain
- Reduction in malodour
- Reduction in the frequency of dressing changes required
- Reduction in the volume of exudates at the wound bed
- Reduction in the signs of infection
- Control of any bleeding
- Prevention of deterioration in the wound (Thomas, 2008).

Successful wound management requires an informed approach to the selection and use of products, based on an understanding of the healing process and acknowledgment of the properties of the various dressings. Without such knowledge and careful consideration, dressing selection is likely to be arbitrary and potentially ineffective, as well as wasteful both in terms of time and physical resources (Thomas, 1997).

No single dressing is suitable for the management of all types of wounds, and few are ideally suited for the treatment of a single wound during all stages of the healing cycle. Therefore, the patient is reliant on the clinician to ensure that any wound care is based upon an assessment that follows an evidence-based approach and is appropriate for his or her needs. This is complex and multifaceted due to several factors, as outlined by The World Union of Wound Healing Societies [WUWHS] (2008):

- Diverse aetiology of wounds
- The complexity of the healing process
- Multiplicity of factors that affect healing
- Extensive widening of the range of dressings/devices/drugs/surgery and advanced wound therapies.

The assessment and management of wounds needs to relate clinical observations and interventions to the cellular level, with the aim of promoting a systematic and rational approach (Dowsett and Ayello, 2004).
A clinician should be able to identify the objective and why any dressing or technique is used or not used, continued or discontinued, in each wound of each specific patient.

The diagnostic process should determine the cause of the wound, identify factors that may delay healing, assess the status of the wound and help to develop the management plan (European Wound Management Association [EWMA], 2008). Several factors should be considered:

- Wound aetiology
- Site of the wound
- Pain
- Continence status

- Known sensitivity to medicated dressings
- Wound aetiology
- Condition of peril-wound skin
- The need to bathe or shower frequently
- Compliance.

## Honey dressings

Honey dressings contain medical-grade honey and have been available in the UK for the past 10 years.

Molan (1999) identifies the therapeutic mechanisms of honey as:

- Antimicrobial
- Deodorising
- Debriding
- Anti-inflammatory
- Stimulating new tissue growth.

Stephen-Haynes (2005) also notes the following benefits:

- Pain management
- Reduction in scarring.

The honey dressings currently available in the UK are listed in *Table 1*.

## Discussion

The assessment of infection (EWMA, 2005) and management of infection (EWMA, 2006) is a key consideration when using honey dressings. Medical grade honey has antimicrobial and anti-inflammatory properties and has been used clinically for both acute and chronic wounds.

Medical grade honey also has osmotic properties and produces an environment that promotes autolytic debridement and can help control wound malodour (Molan, 1999).

**Table 1**

Honey dressings available in the UK

| Honey product | Treatment use/outcome | Wound description |
|---|---|---|
| Actibalm® (Advancis Medical) | Cold sores<br>Insect bites<br>Dry chapped lips | Superficial broken areas, specifically lips |
| Activon Tulle® (Advancis Medical) | Debride, reduce odour | For sloughy, dry necrotic, malodorous wounds |
| Activon tube® (Advancis Medical) | Debride, reduce odour | For sloughy, dry necrotic, malodorous wounds |
| Actilite® ( Advancis Medical) | Primary wound dressing allows the passage of exudate | Cuts, abrasions, superficial wounds where primary layer needed |
| Algivon® (Advancis Medical) | Debride, reduce odour | Alginate component allows honey dressing to last longer |
| Medihoney Antibacterial 100% Honey (Derma Sciences) | Debride, Reduce odour | For sloughy, dry necrotic, infected, malodourous wounds |
| Medihoney Antibacterial Wound Gel (Derma Sciences) | Debride, Reduce odour. Contains plant waxes to increase viscosity and ease application | For sloughy, dry necrotic, infected, malodourous wounds |
| Medihoney Tulle (Derma Sciences) | Debride, Reduce odour | For sloughy, dry necrotic, infected, malodourous wounds |
| Medihoney Apinate (Derma Sciences) | Debride, Reduce odour | Calcium Alginate dressing with honey for higher exuding wounds |
| Medihoney Gel Sheet (Derma Sciences) | Debride, Reduce odour | For sloughy, dry necrotic, infected, malodourous wounds |
| Medihoney Barrier Cream (Derma Sciences) | Helps maintains the skins barrier properties and maintains skins moisture and pH. Contains 30% Medihoney | Intact skin at risk of breakdown from moisture or body fluids, peri-wound edges, skin folds, and skin at risk from incontinence |
| Melladerm® (SanoSkin®) Bulgarian flower honey | Debride, reduce odour | For sloughy, dry necrotic, malodorous wounds |
| MelladermTulle® (SanoSkin®) | Debride, reduce odour | For sloughy, dry necrotic, malodorous wounds |
| Mesitran® (Aspen Medical) | Rehydration, debride, reduce odour | For sloughy, dry necrotic, malodorous wounds |
| Mesitran Border® (Aspen Medical) | Rehydration, debride, reduce odour | For sloughy, dry necrotic, malodorous wounds<br>With film border |
| Mesitran Ointment® (Aspen Medical) | Debride, reduce odour<br>Softening yellow/brown eschar | 48% ointment Indicated for autolytic debridement, and malodour |
| Mesitran Ointment S® (Aspen Medical) | Softening yellow/brown eschar | 40% Ointment Indicated for autolytic debridement, and malodour |
| Mesitran Mesh® (Aspen Medical) | Allows passage of exudates | Pressure, venous, arterial and diabetic ulcers; superficial wounds; superficial and partial thickness burns; fungating wounds |

*Figure 1. Irritation secondary to possible insect bite.*

All antimicrobials, including honey, should be used in an appropriate and structured manner for limited periods (Best Practice Statement, 2010). The wound management product should be appropriate for the tissue type present, the level of exudate and patient comfort (Best Practice Statement, 2010).

If the wound is unchanged after 14 days, it is recommended that an alternative antimicrobial dressing should be utilised. If the wound shows signs of further infection a systemic antibiotic should be used (Best Practice Statement, 2010). Patients who are considered high risk or immunocomprimised (which may lead to the masking of infection) may be given systemic antibiotics (Best Practice Statement, 2010).

## Caution

Honey dressings should not be used on patients with extreme sensitivity to honey, bee stings

*Figure 2. Irritation three days after insect bite.*

*Figure 3. Pressure ulcer with a 'core' of necrotic tissue.*

or bee products. Patients with diabetes should be monitored for changes in blood glucose concentrations during treatment with topical honey or honey.

## Clinical application of honey

### Insect bite

Ms A was a 45-year-old woman who presented with an area of redness secondary to a suspected insect bite on the left lower leg (*Figure 1*).

Mesitran® Ointment (Aspen Medical) was applied to the area twice daily. Ms A's pain rating was moderate and the area was described as irritating.

There was a significant anti-inflammatory effect and within three days the irritation resolved quickly (*Figure 2*).

### Burn

Ms B, an 88-year-old woman, sustained a burn on her left upper arm, which was unsuitable for skin grafting (*Figure 4*). Activon Tulle (Advancis Medical) was applied to debride the wound as this was the only honey dressing available in 2003. Softening of the eschar was seen within one week and the wound was visibly debriding at three weeks. The patient found that the

*Figure 4. Initial wound following a burn.*

dressing was comfortable to wear and minimal scarring was present post-healing.

### Cellulitis

In another case study, Ms C, a 72-year-old diabetic female, presented to hospital in 2008 with a rapid onset reddened area on the dorsal surface of her foot, which was diagnosed as cellulitis.

The wound bed was covered with thick slough (*Figure 5*) but due to her diabetes Ms C could not feel any pain in the foot (neuropathy). The wound was also exhibiting periwound oedema and erythema and was warm to the touch.

Medihoney Apinate (calcium alginate) dressings (Derma Sciences) were initiated to provide antimicrobial action and promote gentle yet rapid autolytic and osmotic-driven debridement in a moist wound healing environment.

The dressings were applied with an absorbent cover dressing and

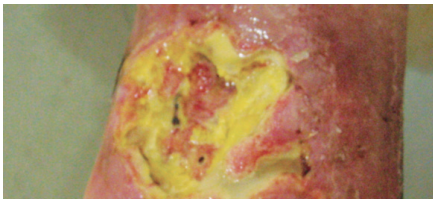

*Figure 5. Wound bed covered with thick adherent slough.*

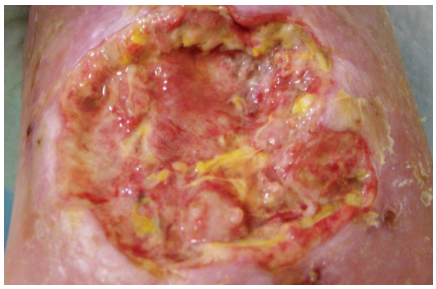

*Figure 6. Decreasing slough as a result of honey's debriding properties.*

changed daily. Rapid liquification of devitalised tissue was noted within several days of initiating Medihoney (*Figure 6*) and the wound bed was clean within a month (*Figure 7*).

This patient, whose wound initially meant that her foot was in danger of amputation experienced a swift reduction in oedema, erythema, warmth and necrotic slough. The dressings prepared the wound bed for healing and were versatile and easy to use throughout several phases of the wound healing process.

## Conclusion

This article has reviewed the use of honey dressings and their contribution to achieving appropriate clinical outcomes. The range of honey dressings and their clinical applications are outlined in *Table 1*.

Wound care is complex and the practitioner must have 'an understanding of wound healing, dressing products, asepsis, microbiology, pharmacology, psychosocial factors and ethics … and possess good communication skills' (Flanagan, 2008). Honey dressings offer a number of properties and, therefore, clinicians may utilise the dressings to achieve several clinical outcomes.

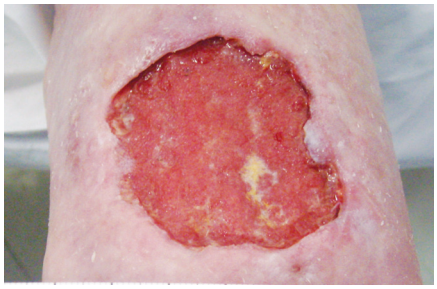

*Figure 7. A clean wound bed*


## Acknowledgements

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### Websites and useful resources

For all aspects of wound care as well as free education: http://www.woundsinternational.com

Particularly useful for position statements: http://www.ewma.org

Provides reviews of the current evidence: www.cochrane.org

Includes dressing information and recent technical reviews: www.dressings.org