# EVALUATION OF MEDIHONEY<sup>®</sup> HCS IN THE TREATMENT OF SUPERFICIAL AND SUPERFICIAL DERMAL BURNS

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### INTRODUCTION

Management of the superficial/superficial dermal burn is aimed at providing dressings that deliver pain-free wound care, protect the wound and encourage re-epithelialization. Hydro-colloid dressings meet these aims, although where there is a high risk of infection or suspicion of colonization, an antimicrobial dressing should be considered instead (Ousey et al 2012). The dressing in the evaluation is MEDIHONEY<sup>®</sup> HCS, it is a hydrogel absorbent sheet that combines medical grade Manuka honey with superabsorbent polymer technology. It allows cooling and soothing with increased absorbency and provides a moist environment (Simon et al 2006). MEDIHONEY<sup>®</sup> is a medical grade honey derived from the *Leptospermum scoparium* (MANUKA) species of the tea tree bush with properties that are beneficial throughout the phases of the healing process.

The use of honey for healing goes back thousands of years, to ancient Egypt and Greece. Honey has unique methods of action of antibacterial (Gethin et al 2008, Chaiken 2010). These methods of action include pH modulation, with a pH of 3.5-4.5, which is a more acidic environment conducive to healing (Milne and Connolly 2014), and a high osmotic effect, non-peroxide activity, immune stimulation and anti-inflammatory actions. Seckham and Cooper (2013) state that honey inhibits cell division of organisms such as *Staphylococcus* aureus and *Escherichia* coli, and Cooper et al (2002) found that there is lysis of Pseudomonas aeruginosa.

The results show that MEDIHONEY<sup>®</sup> HCS was rated low for pain on application, removal and in-situ. (Fig. 1) Consideration needs to be given to patient comfort when the dressing is in place. MEDIHONEY<sup>®</sup> HCS scored a mean of 1.5 for pain in-situ, one patient did report some discomfort. MEDIHONEY<sup>®</sup> HCS scored well on conformability with a mean score of 8.7 (Fig. 2) and was also easy to apply, scoring a mean of 8.2 on ease of application. Six of the fifteen patients had no organisms identified on the wound swab, the others had various, either *Staphylococcus aureus*, or mix coagulase negative *Staphylococcus*. No patients had any clinical sighs of infection prior to application or during treatment, and went on to heal as expected. Eleven patients were healed on the first review, three were almost healed but fragile and one took a further week to heal.

## **CASE STUDY 1**

Mrs. A is a 57 year old lady who sustained a scald to her left hand due to an accident with hot water, she did initial first aid of cling film only. She was assessed as having a mainly superficial, with a small superficial dermal injury to the left hand and wrist, with TBSA 1%, once the blister had been debrided. On examination there was no swelling or clinical signs of infection. The dressing was applied without trimming and secured with tape and a tubular bandage. Mrs. A was reviewed at 7 days, and the wound had healed, (Fig 5). She found the dressing to be comfortable, had no problems of slippage, and was removed with minimal discomfort on day 7. At 3 weeks post healing the scar was beginning to settle well



Superficial / superficial derma injury on initial assessment.



Dressing in situ, it remained in place for 7 days



Picture of the wound at 7 days, was fully healed

References: 1 Banks V, Bale SE, Harding KG. (1994) Comparing two dressings for exuding pressure sores in community patients. J Wound Care; 3(4): 175-8. 2 Bale S, Hagelstein S, Banks V, Harding KG. (1998) Costs of dressings in the community. J Wound Care; 7(7): 327-30. 3 Chaiken, N. (2010). Pressure ulceration and the use of Active Leptospermum honey for debridement and healing. Ost Wound Manage, 56(5):12-14 4 Cooper RA, Halas E, Molan PC (2002) The efficacy of honey in inhibiting strains of *Pseudomonas Aeruginosa* from infected burns. J Burn Care Rehab. 23:366-70. 5 Fletcher J, (2005) Understanding wound dressing: Hydro-colloids. Nursing Times 101(46);51 6 Gethin G, Cowman S, Conroy RM, (2008) The impact of Manuka honey dressings on the surface pH of chronic wounds. Int Wound J, 5:185-94. 7 Jull AB, Rodgers A, Walker N. (2015) Honey as a topical treatment for wounds (Review). Cochrane Database Syst Rev; Issue 4. 8 Milne SD, Connolly P. (2014) The influence of different dressings on the pH of the wound environment. J Wound Care; 23(2):53-4. 9 Ousey K, Cook L, Young T, Fowler A, (2012) Hydro-colloids in Practice. Wounds UK:8(1) 1-6. 10 Robson MC, Smith DJ, Vanderzee AJ, Roberts L. (1992) Making the burned hand functional. Clinical Plastic Surgery; 19(3):663-71 11 Simon A, Wiscniewsky G, Bode U,(2006) Wound care with antibacterial honey (Medihoney) in paediatric haematology-oncology. Support Care Cancer 14:91-7. 12 Seckham A and Cooper R (2013) Understanding how honey impacts on wounds: an update on recent research findings. Wounds international 4(1):20-24.

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The primary objective was to assess the performance of the MEDIHONEY<sup>®</sup> HCS on superficial and superficial dermal burns without the use of a topical agent. The dressing was applied to 15 patients; all patients were identified as Femal having superficial or superficial dermal wounds on initial assessment with a mean TBSA of 0.3 % (See Table 1). The majority of the injuries were hot liquid scalds, but some

were from contact with hot surfaces. A 10-point Likert scale was used to assess issues such as; ease of application, conformability, control of exudate, and ease of removal, with 1 being poor and 10 excellent. Pain was assessed as well, with 1 being no pain and 10 being extreme pain. Patients had an average of one dressing application. Wounds were assessed and photographed on return to the clinic. Length of time the wounds took to epithelialise were also recorded.

## RESULTS



## Fig. 1 Mean Pain Scores 1.7 1.6 1.5 Pain in situ Pain on removal Pain on application

## DISCUSSION



Wound three weeks post healing

Correct selection of dressings can speed up functional rehabilitation and the healing process (Robson et al 1992). The ability of a dressing to conform to the contours of a wound is important to reduce areas of non-contact where micro-organisms may proliferate (Banks et al 1994). Dressing wear time is of importance to both patients and clinicians. The cost of this product is higher than the usual dressing used and this may prohibit its use in the wider burns community. However, increased wear times are associated with; fewer dressing changes, decreased procedure-related pain, and reduced wound care costs in relation to nursing time and improved healing rates (Bale et al 1998). MEDIHONEY® HCS was able to remain in place for 7 days, a significant factor, when looking at the wear time. MEDIHONEY<sup>®</sup> HCS is a transparent dressing which allowed the patient and clinician to see the burn without having to remove or unpeel during wear time. It is imperative that, in providing an optimum moist wound healing environment, dressings are used that achieve the delicate balance between an excess of wound exudate (which may lead to maceration) and the drying out of the wound (which could lead to cell and tissue death). While the dressing from the evaluation was able to manage exudate, hydrocolloids should be considered 3-5 days post burn injury, following initial assessment and treatment, once the acute traumatic inflammatory phase subsides, a thin hydro-colloid can prove useful, thinner versions are generally used on burns that are dry or have low levels of exudate (Fletcher, 2005). Importantly, obtaining the product in the community was not an issue. It was evident that the type of wound and location of the wound was important, because the dressing could become sticky when used on the hands, leading it to be changed sooner than 7 days. Jull et al (2015) found that honey might improve healing times in some types of burn (thin burns which are mild to moderate, superficial and of partial thickness) compared with some conventional dressings. MEDIHONEY<sup>®</sup> HCS has shown with correct burn wound selection this dressing can be effective in managing superficial to superficial dermal burn injuries. Exudate levels and location of the burn need to be considered when selecting the dressing.





## METHODS

#### Table 1 – Mean Age and TBSA

	Count	Age range	Mean age	TBSA range	Mean TBSA
Male	6	24-72	41.3	0.1-0.5	0.21
Female	9	22-57	39.7	0.1-1	0.28
Total	15	22-72	40.4	0.1-1	0.3

