

Case studies series: ManukaDress IG and ManukaDress IG Max for the management of burns

KEY WORDS

- ▶ Acute wound
- ▶ Burns
- ▶ Honey
- ▶ ManukaDress

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Over 13,000 people seek hospital attention for burns each year in the UK. Prompt, appropriate treatment reduces the risk of negative outcomes and optimises healing. Destruction of the skin barrier and the presence of necrosis, slough and exudate increase the risk of infection and the chances of delayed healing. It is important that burns are debrided and covered with a dressing to reduce this risk. ManukaDress IG and ManukaDress IG Max contain Manuka honey, which has antimicrobial properties and promotes autolytic debridement. This case series reviews the efficacy of these dressings in the treatment of superficial and partial-thickness burns.

During 2003–2011, 81,181 patients attended the specialised burn service for assessment in England and Wales, with 71% being admitted (Stylianou et al, 2015). Burns are a considerable burden on NHS clinical and financial resources. It costs £108–141 to treat a burns patient in A&E, £1,850 for inpatient treatment of a minor scald, and £63,157 to treat a major burn requiring high dependency unit care (Department of Health, 2011). There are additional costs associated with managing patients in the community.

There are two classification systems for burns (Table 1). Traditionally, they have been classified by degree, with third-degree burns being the

most serious. The newer, more precise, system refers to the thickness of the burn.

The presence of necrosis and serosanguinous exudate and the destruction of the skin barrier, e.g. if blisters burst, increase the risk of infection (Edwards, 2013a). Depending on the severity and site of the burn, patients may experience a number of physical symptoms (pain, itching, limited endurance and decrease in function due to contracture), social impacts (changes in roles at work and at home, body image issues and sexual dysfunction) and psychological effects (depression and anxiety) (Wiechman and Patterson, 2004). Prompt and appropriate treatment reduces the risk of many complications.

Table 1. Types of burn (NICE, 2017; Wound Source, 2018)

| Thickness | Degree | Depth | Characteristics |
|---------------------|--------|----------------------------------|--|
| Superficial | First | Epidermis | <ul style="list-style-type: none"> ▶ Erythema ▶ Pain ▶ Absence of blisters ▶ Mild swelling |
| Superficial partial | Second | Dermis: papillary region | <ul style="list-style-type: none"> ▶ Pain ▶ Blisters ▶ Mottled skin ▶ Severe swelling |
| Deep partial | Second | Dermis: reticular region | <ul style="list-style-type: none"> ▶ White ▶ Leathery ▶ Relatively painless |
| Full | Third | Hypodermis (subcutaneous tissue) | <ul style="list-style-type: none"> ▶ Charred ▶ Insensate ▶ Eschar formation |

Box 1. Aims of a burn wound dressing (Douglas and Wood, 2017)

- ▶▶ Prevent conversion to a deeper burn
- ▶▶ Prevent or resolve infection
- ▶▶ Promote moist wound healing
- ▶▶ Reduce pain
- ▶▶ Allow for movement and function
- ▶▶ Assist in decreasing swelling.

Minor or superficial burns can be managed with simple analgesia, e.g. paracetamol, and the application of a cold compress to provide symptom relief (NICE, 2017). Once healed, an emollient, such as an emulsifying ointment, should be regularly applied until the burn is no longer itchy or dry (NICE, 2017). Superficial dermal burns usually heal within 7–10 days (Edwards, 2013b), the risk of infection is low and scarring is likely to be minimal.

Superficial partial thickness burns result in blistering and swelling. Deep partial thickness burns may not blister, instead the skin will typically be blotchy red or waxy. They should be fully assessed, cleaned, debrided and dressed to aid healing and minimise the risk of infection. Pain can be managed with simple analgesia or, if more severe, codeine (NICE, 2017). The wound should be reassessed after 48 hours to check for signs of infection and the dressings changed every 3–5 days according to manufacturer’s instructions. The choice of dressing will depend on the type of burn, the site, size, level of exudate, infection risk, and local formulary availability (NICE, 2017). Superficial partial thickness burns often heal in 3 weeks (Saeidinia et al, 2017). If the wound does not improve as expected or infection is present, patients should be referred to a specialist burn team. The overall aims of any burn wound dressings are shown in *Box 1*.

HONEY IN BURN TREATMENT: MANUKADRESS (MEDICAREPLUS INTERNATIONAL)

Honey has antimicrobial properties and promotes autolytic debridement by providing a moist wound-healing environment (Edwards, 2013a; Bradbury et al, 2014). It has been postulated that honey activates proteases that aid the debridement process and also causes an enzymatic action leading to the breakdown of blood clots that bind necrotic tissue to the wound bed (Molan 2005; 2009). Some patients may experience momentary stinging or a drawing sensation when using honey therapies due to its autolytic debriding properties and drawing of fluids by osmosis away from the wound (Zbuckea, 2014).

Studies of adults and children have found that honey and honey-enriched dressings are effective in the treatment of superficial and partial-thickness burns (Smaropoulous et al, 2011;

Boggust, 2013; Edwards, 2013a). A Cochrane review found moderate-certainty evidence that burns treated with honey heal more quickly than those treated with topical antibiotics (Norman et al, 2017). This could be due to the multi-modal properties of honey, specifically its anti-infectious, anti-inflammatory, anti-exudative, antioxidant, wound debriding and nutritional properties (Zbuckea, 2014).

ManukaDress IG and ManukaDress IG Max are indicated for the autolytic debridement of superficial (first-degree) and partial thickness (second-degree) burns. ManukaDress has been shown to be both safe and effective in the treatment of difficult-to-debride wounds (Bradbury et al, 2014; Callaghan, 2014). The high osmolarity of the medical-grade Manuka honey contained in these dressings assists in wound cleansing and autolytic debridement (Bradbury et al, 2014). The dressings also promote a moist wound environment, reduce malodour and create an acidic environment conducive to healing (Bradbury et al, 2014).

Both ManukaDress IG and ManukaDress IG Max are non-adherent gauze dressings impregnated with 100% Manuka honey. ManukaDress IG Max has the added benefit of containing double the amount of honey of ManukaDress IG, enabling more rapid debridement of larger necrotic and sloughy wounds. ManukaDress IG Max also has a more open-weave structure, allowing passage of exudate through the dressing into a secondary absorbent dressing. This helps prevent pooling of exudate in the wound bed and damage to the surrounding tissues, even when used on more highly exuding wounds.

ManukaDress IG dressings are recommended for use on smaller wounds with partial slough, for prophylaxis from infection or for maintenance debridement where clinically indicated. It is recommended that both dressings are used with a step-up/step-down approach, depending on the treatment aims and changes in wound condition.

Case studies

This series of case studies examines the efficacy of ManukaDress IG and IG Max in the management of superficial thickness, superficial partial thickness and deep partial thickness burns. Ten cases were completed at two different

Table 2. Summary of burns, rationale for selecting ManukaDress IG and ManukaDress IG Max and key observations/outcomes

| Case | Sex, ages (years) | Cause of burn | Type of burn | Dressing selected | Rationale for dressing selection | Key observations/outcomes |
|------|-------------------|--------------------------------|------------------------------------|---------------------------------------|---|--|
| 1 | Male, 79 | Fire, accident | Deep partial thickness | ManukaDress IG | <ul style="list-style-type: none"> ▶▶ Reduce infection risk ▶▶ Promote autolytic debridement | <ul style="list-style-type: none"> ▶▶ Inpatient due to wound size ▶▶ Autolytic debridement achieved by day 15 ▶▶ Some pain during and shortly after dressing change |
| 2 | Male, 56 | Dry heat, accident | Deep partial/full thickness eschar | ManukaDress IG Max | <ul style="list-style-type: none"> ▶▶ Reduce infection risk ▶▶ Promote autolytic debridement | <ul style="list-style-type: none"> ▶▶ No pain on dressing changes (possibly due to neuropathy) ▶▶ Eschar tissue continued to soften and lift ▶▶ Patient did not attend appointments after day 9 but was satisfied with treatment progress |
| 3 | Male, 82 | Hot plastic, accident | Deep partial/full thickness | ManukaDress IG | <ul style="list-style-type: none"> ▶▶ Reduce infection risk ▶▶ Promote autolytic debridement | <ul style="list-style-type: none"> ▶▶ Inpatient due to infection, where IV antibiotics prescribed ▶▶ No pain on or between dressing changes ▶▶ Lifted eschar ▶▶ Healing started by day 9 ▶▶ Produced a wound bed suitable for grafting |
| 4 | Male, 41 | Dry heat, deliberate self-harm | Deep partial/full thickness eschar | ManukaDress IG Max and ManukaDress IG | <ul style="list-style-type: none"> ▶▶ Reduce risk of recurrent infection ▶▶ Debridement of remaining eschar | <ul style="list-style-type: none"> ▶▶ Stung for 2–3 hours after dressing application ▶▶ Full-thickness eschar lifted by day 9 ▶▶ Treatment stepped down from ManukaDress IG Max to ManukaDress IG on day 9 |
| 5 | Female, 54 | Scald, accident | Superficial partial thickness | ManukaDress IG | <ul style="list-style-type: none"> ▶▶ Reduce infection risk ▶▶ Patient comfort | <ul style="list-style-type: none"> ▶▶ First aid administered ▶▶ Pain at dressing change reduced from 4 (days 2 and 8) to 2 (day 12) out of 10 ▶▶ Pain between dressing changes reduced from 4 (day 2) to 2 (day 12) out of 10 ▶▶ Honey maintained a moist wound environment ▶▶ Healed on day 14 |
| 6 | Male, 10 | Scald, accident | Superficial partial thickness | ManukaDress IG | <ul style="list-style-type: none"> ▶▶ Reduce risk of infection ▶▶ Keep the area moist ▶▶ Reduce risk of scarring ▶▶ Aid healing | <ul style="list-style-type: none"> ▶▶ First aid: cold-water soaks ▶▶ Discomfort on dressing change on day 1; no pain on day 18 ▶▶ Saline-soaked gauze aided removal of crystallised honey ▶▶ Discharged on day 18 |
| 7 | Male, 24 | Hot oil, accident | Superficial partial thickness | ManukaDress IG Max | <ul style="list-style-type: none"> ▶▶ Reduce infection risk ▶▶ Debridement ▶▶ Desloughing ▶▶ Reduce risk of scarring | <ul style="list-style-type: none"> ▶▶ Blisters had burst on presentation ▶▶ Dressing application uncomfortable on day 1; no pain on removal ▶▶ Saline and monofilament pad aided removal of crystallised honey |
| 8 | Female, 56 | Scald, accident | Superficial thickness | ManukaDress IG | <ul style="list-style-type: none"> ▶▶ Reduce erythema ▶▶ Reduce risk of blister breakdown | <ul style="list-style-type: none"> ▶▶ Diabetes and blisters increased risk of delayed healing and infection ▶▶ Patient found ManukaDress IG cool and comfortable ▶▶ Pain between dressing changes reduced from 4 (day 1) to 1 (day 14) ▶▶ Healed on day 14 |
| 9 | Female, 47 | Hot oil, accident (at work) | Superficial thickness | ManukaDress IG | <ul style="list-style-type: none"> ▶▶ Reduce risk of infection due to blistering ▶▶ Low-exudate burn | <ul style="list-style-type: none"> ▶▶ First aid: immersing the hand in cold water and taking analgesia ▶▶ ManukaDress IG was easy to apply to the fingers and was held in place with Telfa-type dressing ▶▶ Analgesia prescribed ▶▶ No pain before or during dressing change on day 7 ▶▶ Patient and clinician satisfied with treatment |
| 10 | Male, 40 | Gas, accident (at work) | Superficial thickness | ManukaDress IG | <ul style="list-style-type: none"> ▶▶ Patient comfort ▶▶ Aid healing | <ul style="list-style-type: none"> ▶▶ First aid: tea-tree gel ▶▶ No pain during ManukaDress IG application and comfortable when in place ▶▶ Healed on day 7 ▶▶ Advised to moisturise regularly |

Case 9 courtesy of JT and JSH; Case 10 courtesy of HE and JSH. Pain scale: 1–10 (1=no pain; 10=unbearable pain).



Figure 1. Case 1: Day 1 (admission to burns unit)



Figure 2. Case 1: Day 7



Figure 3. Case 2: Day 1



Figure 4. Case 2: Day 9

centres, an overview of which can be seen in *Table 2*. Cases 1–8, where ManukaDress IG or ManukaDress IG Max were used for at least 2 weeks, are presented in detail. Cases 9 and 10 were superficial burns and the dressings used only for a week as the wounds healed. They are presented in *Table 2*.

Case 1: Lower leg burn acquired at work (AS and JP)

A man in his late 70s sustained a burn to his left lower leg when his overalls ignited while using a gas torch. No first aid was administered, but he attended A&E on the same day. A non-adherent silicone dressing was applied over the blisters and he was admitted to the burns unit as an inpatient.

The 19 cm (length) × 5 cm (width) deep partial thickness burn (*Figure 1*) was producing a small amount of thick, clear exudate. The burn was sensate, but altered in places. ManukaDress IG was selected to promote autolytic debridement and reduce infection risk.

Following cleansing with saline, gauze was used to keep ManukaDress IG in place and absorb exudate. Twice weekly dressing changes were advised and the patient was encouraged to elevate his leg and mobilise.

On day 7 the wound measured 16 cm (length) × 4 cm (width), there was increased vascularisation, improved blanching and no exudate (*Figure 2*). The patient reported no pain on dressing removal. The wound was partially healed, with granulated tissue and islands of epithelisation in unhealed areas, and the sloughy necrotic tissue was lifting.

The dressing was soaked with saline before removal on day 8 and the patient experienced some pain (4 out of 10 on a visual analogue scale [VAS]) during the dressing change and a mild stinging sensation for a short period afterward. However, this was acceptable for the patient and some degree of pain was expected with such a large burn.

One week later, there was considerable improvement, with areas of epithelisation on the wound bed. As autolytic debridement had been achieved and the wound was not displaying any signs of infection, ManukaDress IG was discontinued after 15 days of treatment.

Case 2: Left knee burn associated with diabetic neuropathy (AS and TC)

A 56-year-old man attended the outpatient burns clinic 3 weeks after kneeling on a hot water tank. Up until now, the burn had been managed at home, and no first aid was given. He had diabetic neuropathy to his mid-thigh, so had been unaware of sustaining the burn, which had not been painful.

The deep partial/full-thickness burn was 10 cm (length) × 8.5 cm (width), with central full-thickness eschar that was lifting at the edges (*Figure 3*). Thick, yellow/brown fibrinous exudate was present, but the surrounding skin was healthy and there was no odour.

The wound was cleansed with dilute 10% povidone-iodine solution and rinsed with saline. Areas of dry tissue and eschar were lifted and cut away. ManukaDress IG Max was selected to encourage autolytic debridement, to soften the eschar, and to reduce risk of infection. Gauze and gauze roll were used to absorb exudate and keep the dressing in place. It was recommended that the dressings be changed two to three times a week, and the patient was advised to elevate the limb and monitor for signs of infection.

Nine days later, two pain-free dressing changes had occurred. The dressing was easy to remove and had not adhered to the wound bed. The eschar continued to soften and lift. Epithelisation and granulation tissue were visible at the wound edges (*Figure 4*).

The patient did not attend subsequent appointments; however, for the period of evaluation the patient and clinician were both satisfied with the progress of treatment.

Case 3: Full-thickness burn to the right medial thigh (AS and JP)

An 82-year-old man sustained a burn to the right medial thigh when molten plastic was ejected from a bonfire. The mixed-depth burn measured 9 cm (length) × 7 cm (width). Much of the wound was deep dermal (*Figure 5*) with blanching and altered sensation. Eschar was limiting the patient's mobility. There was low-level thin, clear and serous exudate, and the surrounding skin was healthy. The burn was painful between and at dressing changes (3 out of 10 on the VAS).



Figure 5. Case 3: Day 1



Figure 6. Case 3: Day 9



Figure 7. Case 3: Day 25

The patient had a significant vascular comorbidity and was undecided about surgery on first presentation when it was offered. Conservative management was agreed and the option of surgery would be approached further along the treatment pathway.

He was initially treated as an outpatient but was admitted 8 days later due to infection. As an inpatient, the wound was lightly debrided with a debridement pad, cleansed with dilute chlorhexidine, soaked with saline and then dressed with paraffin gauze and povidone-iodine-soaked gauze. Analgesics and intravenous antibiotics were prescribed. Once the cellulitis had receded, ManukaDress IG, gauze swabs and roll were applied. The patient was discharged 2 days later.

The practice nurse changed the dressings every other day. The dressings did not adhere to the wound and the patient did not experience pain on removal or while wearing them. On day 9, the necrotic area was beginning to detach and there was no exudate or odour. The wound was healing from the edges, with areas of healthy granulated tissue and islands of epithelisation (Figure 6). On day 25, the eschar had lifted and the wound bed was considered suitable for grafting (Figure 7). Surgery was discussed with the patient again, and this time he agreed. The patient reported no discomfort or pain on removal or between dressing changes.

A month after the injury, the patient was admitted as planned for tangential excision and skin grafting. Five days later, the wound was 95% healed.

Case 4: Deliberate self-harm burns to the arm (AS and CE)

A man in his 40s with mental health issues had deliberately burned his left arm with a hot knife

and soldering iron 4 days before being admitted with cellulitis. He was admitted as an inpatient, given intravenous antibiotics, daily showers, and the burns dressed with povidone-iodine-soaked and paraffin gauze dressings. The burns specialist assessed the 12 wounds 3 days later. The burns were 2–5 cm long, 1–2 cm wide and uniformly deep partial to full thickness (Figure 8). The wounds had been slightly painful during (2 out of 10 on the VAS) but not between dressing changes.

The wounds were cleansed using dilute chlorhexidine solution, rinsed with saline and debrided. ManukaDress IG Max was used to assist debridement of the remaining eschar and reduce the likelihood of recurrent infection. Gauze roll, crepe bandage and an elasticated tubular bandage were applied to protect the area, hold the dressings in place, absorb exudate and allow movement.

The patient experienced a stinging sensation (5 out of 10) for 2–3 hours after dressing application, which then subsided. Dressing changes were planned for every 2 days, and high doses of oral antibiotics continued for 5 days. The patient was discharged with advice on the signs of infection.

Nine days later, the thicker eschar had lifted and the other areas were partly or completely debrided (Figure 9). Vascularisation and sensation was returning. ManukaDress IG was applied to the two distal wounds at the wrist, which required further debridement. An alternative dressing was applied to the debrided wounds to continue the wound healing process. Two weeks after stepping down to ManukaDress IG, the wrist wounds were healing from the edges, with small islands of epithelialisation on the wound bed and vascularisation visible (Figure 10).



Figure 8. Case 4: Day 1 (7 days after sustaining burns)



Figure 9. Case 4: Day 9



Figure 10. Case 4: Day 22



Figure 11. Case 5: Day 1 (initial assessment)



Figure 12. Case 5: Day 6



Figure 13. Case 5: Day 10



Figure 14. Case 5: Day 14

Case 5: Superficial partial scald to the wrist (RC and JSH)

A 54-year-old female patient presented 48 hours after burning her left inner wrist when filling a hot water bottle. She had initially immersed her arm in cold water for 20 minutes and then covered with an ice pack for 30 minutes, before covering it with a first aid dressing. Two days later the 7 cm (length) × 7.5 cm (width) burn wound had blistered (Figure 11), was hot, red, painful and 'tight'. The surrounding skin was healthy and there was no odour or sign of biofilm; however, there was a high risk of infection.

The blister was aspirated by the clinician and ManukaDress IG was selected as it would be non-traumatic to the surrounding skin, stay in place, and reduce infection risk.

Six days and one dressing change later, the patient was taking paracetamol but the burn continued to be painful between and at dressing change (both 4 out of 10 on the VAS). The burn was the same size and inflamed, but the blistered area was showing signs of healing (Figure 12). ManukaDress IG was continued to prevent infection and encourage autolytic debridement.

After 10 days of treatment, the wound bed was moist and comprised 90% epithelialised and 10% granulation tissue, and there were some areas of blistering (Figure 13). The patient no longer found dressing removal painful, and pain between dressing changes was 2 out of 10.

On day 14 the wound had healed (Figure 14). The patient and clinician were satisfied with the treatment, and the patient decided to apply honey ointment to the scar.

Case 6: Scalds to both upper thighs (ST and JSH)

A 10-year-old boy presented less than 4 hours after spilling a hot drink and sustaining large superficial partial-thickness burns to both upper inner thighs. First aid included cold-water soaks. On arrival, he was given paracetamol and the wounds were cleansed using an aseptic technique and normal saline. The sterile gauze used to clean the wounds removed the loose, dead skin.

The wounds measured 1 cm (length) × 8 cm (width) and 13 cm (length) × 10 cm (width) (Figure 15). ManukaDress IG was selected to aid healing, keep the area moist, and reduce scarring and the risk of infection. A thin film secondary dressing was applied to allow as much movement as possible. Tape and a bandage were used to secure the dressings.

Dressing changes occurred approximately twice a week, and saline-soaked gauze was used to aid removal of the dressing as some of the honey crystallised. Pain on dressing change reduced from 3 (mild) to 1 (none) on the VAS during this period.

On day 8, the tissue was pink, well vascularised and granulation tissue was present (Figure 16). There was no swelling, discharge or signs of infection. ManukaDress IG was continued and reviewed on days 13 and 18. On day 18, the patient was discharged and advised to leave the wounds open, as they were dry and showing signs of good healing, and to use a non-perfumed moisturiser.

Case 7: Hot oil burn to left ring finger (ST and JSH)

Mr J is 24 years old and sustained a hot oil burn to his left ring finger 4 days before attending the minor injuries unit. On the day of the injury,



Figure 15. Case 6: Day 1



Figure 16. Case 6: Day 8



Figure 17. Case 7: Day 1 (pre-cleaning, 4 days after injury)



Figure 18. Case 7: Day 7 (pre-debridement and cleaning)

he applied over-the-counter antiseptic cream and gauze. The superficial partial burn was uncomfortable (2 out of 10 on the VAS). There was healthy pink tissue, blistering and – prior to cleaning – low levels of thick, yellow/brown fibrinous exudate (Figure 17). The blisters had burst due to friction and although the wound was not odorous, it was at high risk of infection.

The wounds were debrided with a monofilament fibre pad to remove discharge and cleansed with saline. Cleaning revealed signs of recovery and healing. ManukaDress IG Max was selected to rehydrate the tissue, to debride and deslough, and to reduce the risk of scarring and infection. An absorbent secondary dressing was applied. Dressing application was slightly painful (2 out of 10) but the patient found the dressing itself comfortable.

A week later (Figure 18), the area was less swollen and there was no exudate, infection or pain. The dressings were soaked with saline to aid dressing removal and a monofilament pad used to remove the crystallised honey; the process was not painful. Granulation was present and epithelialised tissue was developing at the wound edges.

ManukaDress IG Max was continued to assist with healing and absorb exudate. Mr J was then discharged as it was felt he could manage the dressing himself. He was advised to apply topical moisturiser once the wound was sufficiently healed and to re-attend if healing was insufficient. The patient was satisfied with the treatment he had received.

Case 8: Superficial burn on the arm (RC and JSH)

A 56-year-old woman with a history of well-controlled diabetes was visited by the district nurse 2 days after receiving a superficial burn when boiling water splashed onto her left arm. The 2.5 cm (length) × 2.5 cm (width) burn had initially been treated with a cold compress and over-the-counter cream for burns. Although the skin was intact, it was erythemic and had started to blister. The area was tight and painful (4 out of 10 on the VAS), particularly when taking a warm shower. The wound was at risk of infection and delayed healing if the blisters ruptured.

ManukaDress IG was applied to reduce the erythema and infection risk, and prevent the breakdown of blistering. The dressing moulded easily to the arm, stayed in place, and the patient said it felt cool and comfortable against her skin. A non-traumatic silicone foam was selected as the secondary dressing. Both dressings were changed three times a week.

When the patient was reviewed a week later, the blisters were no longer visible and the area less red and inflamed. The patient reported less pain since the last dressing change (2 versus 4 out of 10). Dressing removal was rated as 2 out of 10 for pain.

On day 11 the burn had improved, and 2 weeks after ManukaDress IG was initially applied it had healed. The patient's pain had completely resolved and she was pleased with the outcome.

SUMMARY OF CASE STUDIES

Wound type and patient characteristics

The types of burns and characteristics of the patients included in this case series are summarised in Table 2. Seven males and three females, ranging in age from 10 to 82 years, with burns were treated with ManukaDress IG or ManukaDress IG Max as part of their treatment regimens. The series included both outpatients and inpatients, the latter being admitted due to the size of the burn (case 1) or infection (case 3).

Most of the burns ($n=9$) were the result of accidents, with three being scalds and two caused by hot oil. Three were superficial and three were partial-thickness burns, with the remaining four burns being deep partial or deep partial-thickness. ManukaDress IG and/or ManukaDress IG Max

were used prophylactically in eight cases. Two patients had confirmed infection (cases 3 and 4). In case 4, ManukaDress IG Max was stepped down to ManukaDress IG when the dressing had successfully debrided the wounds.

The rationale for selecting ManukaDress IG or IG Max are given in *Table 2*.

Dressing performance

Clinical feedback determined that the experiences of using ManukaDress were, overall, very good when considering a range of factors. Clinicians were asked to evaluate, in particular, ease of application and removal, ability to conform to the wound bed and remain *in situ*, and patient comfort during wear time and at dressing change. For each of these categories, the clinician was asked to rate ManukaDress as being 'poor', 'fair', 'good', 'very good' or 'excellent'. The majority of clinicians rated the dressing as 'very good' or 'excellent' for the parameters investigated.

While some discomfort or stinging was recorded immediately after the application of ManukaDress in several patients (cases 1 and 4), this subsided after a few hours. Most patients experienced pain during dressing change, as measured by the VAS, with pain scores generally being lower after the application of several ManukaDress dressings, as healing progressed.

In cases 6 and 7, the honey had crystallised and required soaking and/or gentle debridement to remove. Honey crystallisation is a natural phenomenon, which occurs when glucose separates from water. This is due to honey being an over-saturated sugar solution. Crystallization affects only the colour and the texture of honey, not its quality.

Two patients experienced pain between dressing changes (cases 3 and 5), which diminished or resolved over time.

ManukaDress IG and IG Max successfully removed eschar and debrided the wounds in all cases where it was selected to facilitate autolytic debridement. None of the patients developed an infection or experienced recurrent infection following the addition of ManukaDress to their treatment regimens. Many patients indicated that they found the ManukaDress IG and IG Max comfortable and were happy with the treatment outcomes.

CONCLUSION

ManukaDress IG and ManukaDress IG Max are suitable for the management of both superficial and partial thickness burns. ManukaDress IG Max can be considered for larger, wetter wounds with evidence of necrotic tissue or slough. WUK

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