

Evaluation of L-Mesitran[®] dressings in the treatment of minor burns and scalds at a paediatric emergency department

KEY WORDS

- ▶ Burns
- ▶ L-Mesitran
- ▶ Pain

Minor burns and scalds are common, painful injuries among children. In this evaluation, the author sought to establish if L-Mesitran[®] dressings (Aspen Medical Europe Ltd) – a range of honey enriched advanced wound dressings – provided positive patient experiences and outcomes in the management of minor burns and scalds in a paediatric population. L-Mesitran Hydro and Border were found to reduce erythema and pain. Feedback from clinicians, parents, and children was positive overall.

Some 250000 burns occur annually in the UK, with approximately 50% of burns and scalds occur in the kitchen (Khan et al, 2007). Approximately 90% of these are minor and can be safely managed in primary care. The majority will heal regardless of treatment, but initial care can have a considerable influence on the cosmetic outcome, particularly in children (Enoch et al, 2009).

BACKGROUND

The Paediatric Emergency Department, Queen Elizabeth Hospital, Woolwich, treats all minor burns in accordance with the National Network for Burn Care (NNBC; 2012) Referral Criteria. Traditionally, the treatment for minor burns / scalds at the Paediatric Emergency Department was paraffin gauze dressings with gauze bandage for retention. An evaluation of L-Mesitran[®] Hydro and Border (Aspen Medical Europe Ltd) – a range of honey enriched advanced wound dressings – on a series of minor burns / scalds that presented to the Paediatric Emergency Department was undertaken.

AIMS

The aim of this evaluation was to establish if L-Mesitran dressings provided positive patient experiences and outcomes in the management of minor burns and scalds in a paediatric population. L-Mesitran Hydro and Border (a honey impregnated hydrogel in nonadhesive and adhesive bordered formats) was selected for evaluation by qualified nurses based on the following characteristics that were deemed to make a positive

addition to the management regimen:

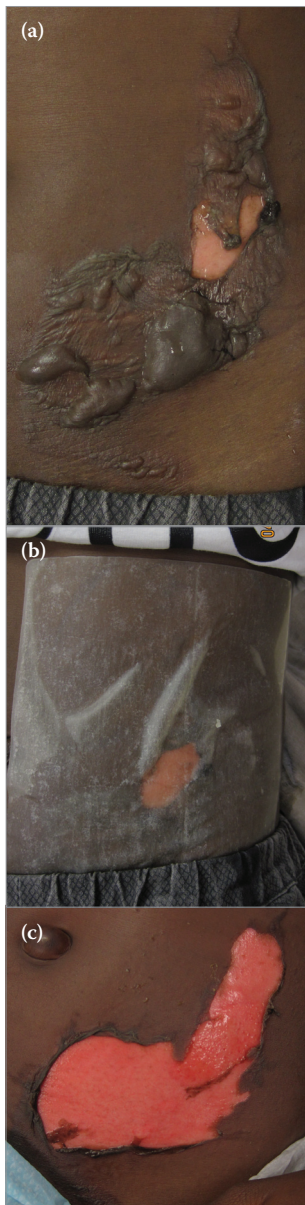
- ▶ Hydrogels maintain a moist wound environment (Jones et al, 2006).
- ▶ Both dressings have a cooling, soothing effect, particularly on minor burns that have exposed nerve endings (Patel and Shah, 2007)
- ▶ Both dressings are transparent, allowing visual inspection of the wound and so reducing the need for painful dressing changes.
- ▶ The adhesive version of the product negates the need to apply additional bandages or tape to keep the dressings in place, which is particularly useful for dressing the arms and legs of small children who do not usually tolerate bulky dressings.
- ▶ L-Mesitran has antimicrobial actions (Wesgate and Cutting, 2013).

METHODS

Following consultation with the author and colleagues, a bespoke evaluation form was designed (with the support of Aspen Medical Europe Ltd). The evaluation consisted of two parts. First, clinicians were asked to complete baseline information on each recruited child's age, sex, cause of injury, wound location and size (percent of total body surface area) at presentation to the Paediatric Emergency Department. Analgesia was offered and, as part of a holistic care package, the wound was dressed with the test dressing. The parents, in consultation with the evaluators, sought to obtain a pain score from each child using the Wong-Baker (1988) FACES Pain Rating Scale (a visual scale to assist in the communication of the degree of pain, where 0 = no

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Figure 1. A burn (a) at presentation to Paediatric Emergency Department, (b) with the L-Mesitran® Hydro (AspenMedical Europe Ltd) adhesive dressing *in situ*, and (c) at 48-hour review.



pain, 1 = “hurts a little bit” through to 10 = “hurts worst”) for both the injury at presentation and in relation to dressing change.

Second, all patients were reviewed 48 hours after the initial assessment. At this review, the wound was inspected, and overall dressing performance and pain were assessed. Parents or carers were encouraged to make comments during the evaluation.

Six paediatric nursing staff carried out the evaluations. Prior to the commencement of the evaluations, training was given to all staff relating to the criteria for dressing size selection and application and removal techniques.

Permissions

Full written consent was obtained from all parents in line with current trust protocol. Any child was able to withdraw at any time during the study. Two children were documented as requiring special needs support and special attention was given to the children and their parents during the study to ensure that they had a clear understanding of how and why the dressing was chosen. Queen Elizabeth Hospital granted permission for the authors to undertake this in-market dressing evaluation.

RESULTS

Eleven children (six girls, five boys) presented to the Paediatric Emergency Department between March–September 2013 with minor burns and scalds (superficial wounds of <2% total body surface area) were recruited. These 11 children were selected based on clinical appropriateness of the test dressing for their wound. The age range was 2–15 years (mean age, 7.6 years). A total of 22 evaluations were submitted (11 pre- and 11 post-dressing application).

The most common injuries (6/11) were scalds (fluid-filled blisters with surrounding erythema), followed by minor burns (4/11), and one chemical burn. Four children under the age of 5 all sustained scalds to hands, forearm and shoulders. The 6–10 year olds sustained a mixture of scalds and burns. For the two patients aged between 11 and 15 years, burns were sustained from a microwave oven and car exhaust.

A 7-year-old girl sustaining the largest (16cm) scald (from hair straighteners), with the average wound size being 5.3cm. An example of one child’s

wound at presentation, with the dressing *in situ*, and at 48-hour review is shown in *Figure 1*.

Time to seeking medical advice varied, from ≤30 minutes to 6 days. Three of the children were in the department within 30 minutes of injury; two did not receive professional medical attention until 3–6 days following injury.

The majority (10/11) of dressings selected by the paediatric nursing staff in this evaluation were the 10cm × 10cm format (the other formats being 15cm × 15cm and 20cm × 15cm). The adhesive border dressing was used more than the nonadhesive dressing, which was attributed to its ability to stay in place without the need for secondary fixation.

All evaluations documented that there was no sign of clinical infection and a marked reduction in erythema at 48 hours. Dressings were changed depending on exudate levels with the majority of dressings being changed 3–5 days after initial application.

Pain

On arrival at the Paediatric Emergency Department, two children reported a pain score of 10, one reported a pain score of 6, four reported a pain score of 4, one each reported pain scores of 1, and 2, and two reported no pain. In the two cases where children reported no pain, this was attributed in both cases to the blister being intact.

All children were offered analgesia; two took no analgesia, five took paracetamol and ibuprofen, two took paracetamol alone, and two took ibuprofen alone. Pain at application of the test dressing was recorded in six of the 11 cases: one child reported a pain score of 8, one a pain score of 6, two a pain score of 2, one a pain score of 1, and one child reported no pain.

At the 48-hour assessment, the two children with the highest pain score (10) on primary assessment, had both reduced scores of 6. Pain scores for two children were not documented, four reported a pain score of 2, and three reported no pain.

In the six cases for which pain on removal of the L-Mesitran Border was recorded, all but one rated the pain as 0 on the pain scale. It was found that, in the case where the child reported pain on removal, the dressing adhesive had been placed directly on an area of erythema due to clinician error. The dressing size selected was too small, and highlighted the need for additional training.

Dressing evaluation

Clinicians, parents, and those children who were able to contribute agreed on a rating that reflected the overall performance of the dressing (poor, good, very good). In 8 of the 9 cases for which a rating was provided, the dressing’s performance was “very good” or “good” (Figure 2).

Comments from clinicians, parents, and those children who were able to contribute highlighted the reduction in pain and erythema following the application of L-Mesitran Border and Hydro. Parents’ comments suggested that they were surprised by how quickly the dressing reduced pain. Children kept the dressing on, with little or no interference. Comments from paediatric nursing staff included:

“[The wound was] very clean when patient returned at 48-hour check”

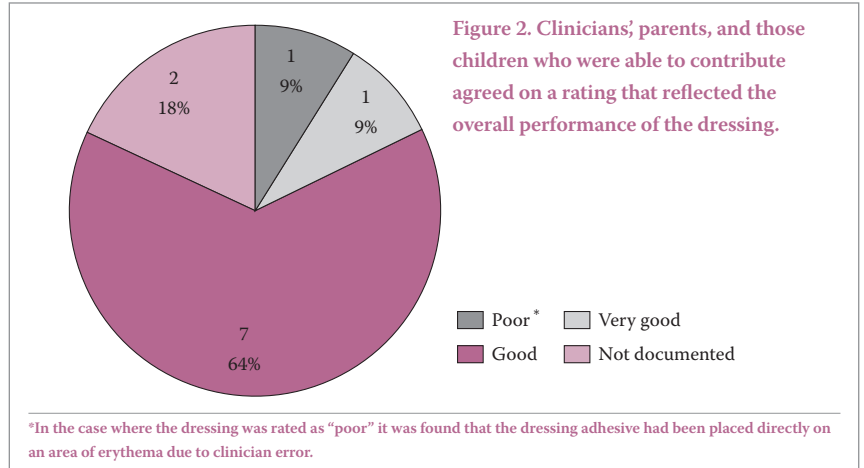
“[It was] easy to see wound, easy to remove [the dressing], easy to clean [the wound].”

Several clinicians commented that the honey impregnated hydrogel appeared to reduce surrounding erythema when compared to previous standard care.

DISCUSSION

First aid and seeking urgent medical advice are fundamental in achieving positive outcomes following burns (The National Network for Burn Care 2012). It was concerning to see that two children in this evaluation did not receive medical attention until 3–6 days following their injury. This could be associated with distance to medical services, awareness about seeking medical advice, or family culture. Despite some delays to presentation, none of the children had any clinical signs of infection. The need to raise public awareness about urgent treatment of burns has been highlighted by Hettiaratchy and Dziewulski (2004) and the NNBC (2012).

Pain is subjective but should not be ignored. Burns and scalds in children are notoriously painful and addressing pain is one of the key elements of good burn management (Cuttle and Kimble, 2010). It was not possible to determine whether the test dressing or the prescribed analgesia reduced the children’s experience of pain. It is likely to be a combination of the two. It was disappointing that in five of the 11 evaluations forms pain during



dressing application was not recorded. Where pain had been recorded using an adhesive dressing, removal of the adhesive bordered L-Mesitran dressings was rated as 0 on the pain scale in all but one case.

Training staff on correct dressing size, application, and removal was shown to be important to ensure the dressings were suitable for the wound size and to avoid pain associated with incorrect placement or removal of the dressing.

Prior to this evaluation, the standard treatment for minor burns at the Paediatric Emergency Department was paraffin gauze dressings with gauze bandage for retention. Following this evaluation, the Paediatric Emergency Department have listed L-Mesitran on their dressing formulary for the treatment of minor burns and scalds.

CONCLUSION

This study of the treatment of minor burns and scalds using L-Mesitran suggested that the dressing was a useful addition to holistic management of these wounds. Erythema was reduced, none of the children developed signs of wound infection, and pain reduced over time. Feedback from clinicians, parents, and children was overall positive.

This evaluation of L-Mesitran hydrogel and hydrogel bordered dressings was carried out in a small number of children, but the types of injuries and management problems are consistent with those usually seen in paediatric accident and emergency settings. Further studies are needed to demonstrate reliability.

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