A clinical evaluation of 25 patients using Kliniderm foam

This article describes the evaluation in clinical practice of Kliniderm foam bordered and non-bordered, including the heel-shaped wound dressing on 25 patients over a two-week period, with an average of four dressing changes and a minimum of two dressing changes. An evaluation form was completed at each dressing change, which aimed to elucidate particular aspects of the dressing's performance, considering: patient comfort on application, ease of application, conformability of the dressing, the dressing's ability to manage exudate, ability to stay in place, ease of removal and patient comfort on removal, the condition of the wound and the surrounding periwound skin. The ratings on evaluation forms were collated and an average rating was calculated for each category.

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KEY WORDS
- Kliniderm
- Foam dressing
- Evaluation
- Wound dressing

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While the human body has an incredible capacity for repair, there are a range of factors and issues – patient-related factors such as underlying comorbidities, or healthcare-related factors such as suboptimal wound management – that prevent a wound from progressing to healing.

This has resulted in an increasing number of chronic or hard-to-heal wounds (Guest et al, 2015; Guest et al, 2020). These may fall into the following categories:

- Wounds that are a direct result of underlying altered pathology (e.g. leg ulcers due to underlying venous or arterial issues)
- Wounds that develop as a result of an individual's risk factors (e.g. pressure ulcers)
- Acute injury on an individual with underlying altered pathology (e.g. a trauma wound on a patient with venous issues or diabetes)
- Delayed wound healing in a healthy individual (e.g. due to suboptimal care).

Therefore, it is important to ensure a full holistic assessment is undertaken, which adheres to the national minimum data set for wound assessment (Coleman et al, 2017) and secondly that the underlying aetiology is managed wherever possible, addressing any risk factors for delayed healing.

Dressing selection is also of key importance. It is essential that the dressing does not cause trauma to the wound bed, is easy to apply and remove, does not adhere to the wound bed, and protects the surrounding skin. In wounds where exudate is an issue, a dressing should be chosen that will be effective in managing chronic wound fluid and protects the surrounding skin (Harding et al, 2019).

However, as well as ensuring clinical effectiveness, in view of the burden of chronic wounds, suggested to be as high as 3.7 million, costing in the region of £8–9 billion and increasing at 11% per annum (Guest et al, 2017), then a product that is cost-effective is also essential.

KLINIDERM FOAM

Kliniderm foam is a primary wound dressing, which is made of hydrophilic, absorbent polyurethane foam. The outer layer is a waterproof polyurethane film with high permeability, to allow effective vapour transfer; this film also provides a bacterial barrier.

The dressing is indicated for moderate to heavily exuding chronic and acute wounds and is available with or without an adhesive border. The adhesive border is acrylic, providing a firmer fixation than silicone adhesion foams. The products are priced more cost-effectively than silicone foam adhesives, when there are no concerns or contraindications to using a stronger acrylic adhesive.

Kliniderm foam dressings are indicated for chronic and acute wound such as: pressure ulcers, diabetic foot ulcers, leg ulcers, post-operative wounds, skin abrasions, lacerations, superficial and partial-

thickness burns, donor sites, traumatic wounds and skin tears.

All wound types suitable to be dressed with the Kliniderm foam dressing were considered for inclusion in the evaluation.

AIMS OF THE EVALUATION

The aims of the evaluation of Kliniderm foam were to consider:

- Patient comfort both at application and at dressing removal
- Ease of application and removal of the dressing
- The conformability of the dressing to the wound
- The ability of the dressing to manage exudate
- The ability of the dressing to stay in place and the wear time of the dressing
- The condition of the wound and periwound skin.

Therefore, considering some of the attributes of an 'ideal' dressing. Patient demographic data were also collected, along with wound type and size, and the clinician's perspective on the performance of the dressing.

METHOD

The evaluation was undertaken in the community in Hull and East Riding. Ethical approval was not required, as this was an evaluation of a wound dressing that was already available. It was also considered a suitable dressing for use on the different wound aetiologies included in the evaluation.

Prior to gaining consent for the evaluation, all patients had a full wound assessment following the National Wound Care Strategy Programme minimum data set for wound assessment to ensure suitability for inclusion (Coleman et al, 2017).

Patients meeting the criteria (Box 1) were approached for their consent to be involved in the evaluation. A verbal explanation was provided to the patient; this included detail of the product to be evaluated, the rationale for the evaluation and their role within the evaluation. They also had the opportunity to look at and feel the dressing, and were reassured that, if they did not wish to participate in the evaluation, it would not affect their treatment in any way and a suitable alternative dressing would be provided.

Twenty-five patients were approached and invited to take part in the evaluation. There were no patients approached who refused to take part. The evaluation was not intended to measure outcomes in terms of wound healing, as the evaluation was aiming to assess the factors listed previously, but would report on the appearance of the wound after treatment. The evaluation was for a minimum of two weeks, with an average of four dressing changes and a minimum of two dressing changes.

All clinicians involved in the evaluation were provided with information about the dressing, how it should be used and what to assess for, and were provided with evaluation sheets for data capture, which were completed at each dressing change. Instructions were also provided on how to complete the evaluation sheet, which did not contain any patient identifiable information and thus maintained patient confidentiality.

The data captured included the patient's gender, age, wound aetiology, level of exudate, wound size and wound duration. Exudate was recorded as dry, light, moderate or heavy. Wound sizes were recorded within the ranges of <10cm^2, 10–25cm^2 and >25cm^2. Wound duration was recorded in the ranges of 0–4 weeks, 4–8 weeks, 2–6 months, 6 months–1 year, and 1 year plus.

Data were also recorded that would address the aims of evaluation. There were 10 factors considered independently (Box 2) to address the aims of the evaluation. These were all scored on a 1–5-point Likert scale where 1 equals very poor, 2 equals poor, 3 equals average, 4 equals good and 5 equals excellent. Lastly, two questions were posed asking the clinicians to rate their personal opinion of the performance of the evaluation dressing.

RESULTS

All patients were seen in primary care and the evaluation was undertaken on patients with different wound aetiologies. These included six (24%) leg ulcers of venous origin or with mixed venous and arterial disease; all were in full or reduced compression therapy, as appropriate to treat the venous hypertension. Fifteen (60%) diabetic foot ulcers (DFUs), two (8%) surgical wounds, one (4%) trauma wound, and one (4%) malignant wound were also included in the evaluation (Figure 1). Fourteen male and 11 female patients took part in the evaluation, with an average age of 71 (range 18–94).

Categorising wounds by duration, five (20%) were

Box 1. Inclusion and exclusion criteria

Inclusion criteria

- Wound suitable for inclusion as per product indication
- Over 18 years of age
- Ability to give signed informed consent

Exclusion criteria

- Not willing or unable to give consent
- Known allergy or sensitivity to the dressing products
- Age under 18
- Wound did not meet the inclusion criteria

Box 2. Evaluation criteria

1. Patient comfort on application
2. Ease of application
3. Conformability
4. Ability to manage exudate
5. Ability to stay in place
6. Ease of removal
7. Patient comfort on removal
8. Wound condition
9. Periwound condition
10. Wear time

Figure 1. Wound types included in the evaluation

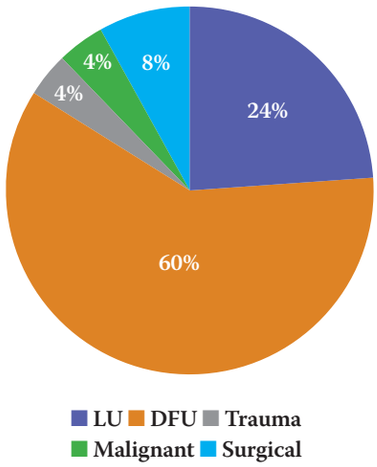


Figure 2. Wound duration

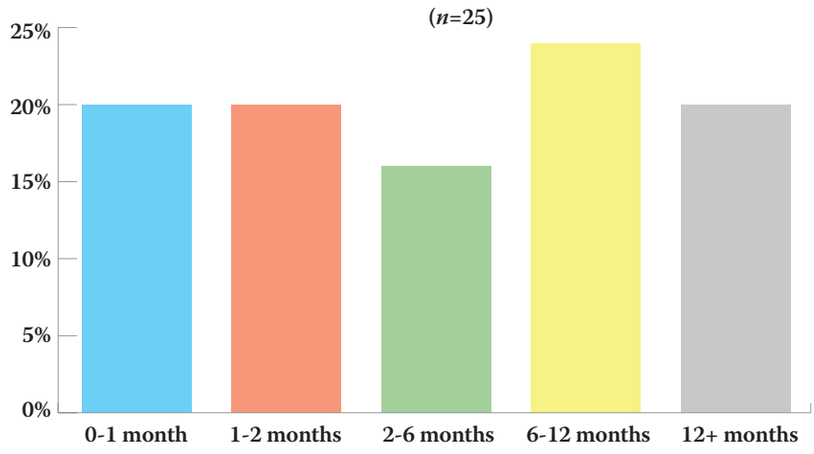


Figure 3. Exudate levels

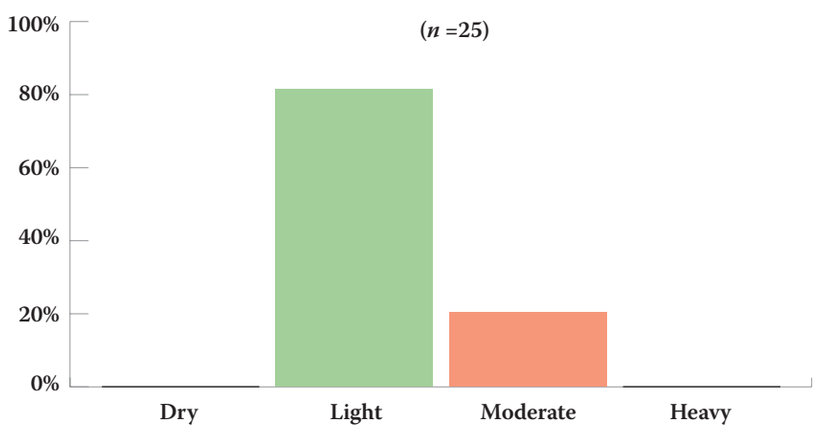


Table 1.

Parameters	Average score
Comfort on application	4.4
Ease of application	4.4
Conformability	4.2
Exudate management	4.1
Stay in place	4.1
Ease of removal	4.4
Comfort on removal	4.5
Wound condition	4.3
Periwound condition	3.9
Wear time	3.8

recorded in the 0–4 week range, five (20%) in the 4–6 week range, four (16%) in the 2–6 months range, six (24%) in the 6-months–1 year range and five (20%) in the <1 year range (Figure 2).

Twenty of the wounds were <10cm^2 (80%) and the remaining five (20%) were 10–25cm^2. There were no wounds greater than 25cm^2. 84% (21) of the wounds were recorded as 0–2mm depth and 16% (4) were recorded as 2–5mm depth. There were no cavity wounds included in the evaluation.

Exudate levels were recorded as either light (20 = 80%) or moderate (5 = 20%); there were no wounds reported as dry or having heavy levels of exudate (Figure 3).

An average rating from all the evaluation forms was calculated to give an overall rating for each category. A rating of good or above was calculated in the categories of ease of application (4.4) and comfort on application (4.4); conformability (4.2); ability to stay in place (4.1); ease of removal (4.4) and comfort on removal (4.5); and wound condition (4.3). However, in two categories, the calculated rating was at the top of the average range: the dressing's ability to manage exudate (4.1), condition of periwound area (3.9) and wear time (3.8; Table 1). On the individual evaluation sheets there were some lower ratings applied but none were consistently low.

There were 18 patients where the Kliniderm foam non-bordered dressing was used; three of these were

Box 3. Potential cost savings

Kliniderm dressings could offer potential cost savings. Previous studies (Drewery, 2015; Barrett, 2015) on the Kliniderm range (Kliniderm foam silicone and Kliniderm superabsorbent dressings) found that introducing Kliniderm could result in overall cost savings. Clinicians rated the dressings highly and cost savings were made when the dressings were added to the formulary.

the heel-shaped dressings, and seven were treated with the Kliniderm foam bordered dressing (Figure 4).

For three of the patients, the dressing was discontinued, as they were found to have a sensitivity to acrylic adhesive dressings. There was also one clinician who rated the adhesive on the bordered dressing as 'poor,' with a hard-to-dress DFU.

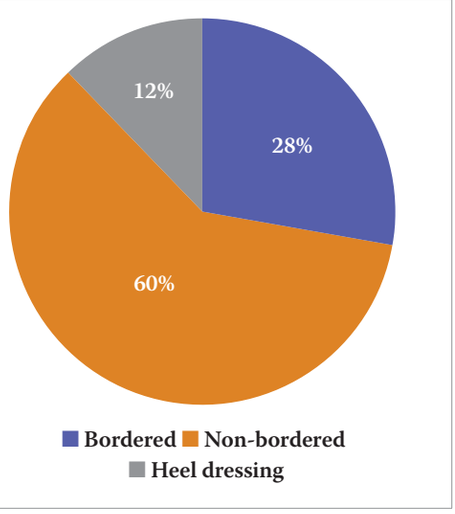
DISCUSSION

Across all categories, the dressing was rated as average (three categories) or good (seven categories). The rating for exudate management, a key factor for a foam dressing, was generally rated good, with some ratings of excellent; however, for two cases, a rating of poor was given in this category. For one of these (a DFU), light exudate was recorded and the rating for this patient's wound condition and periwound skin was also poor. This highlights the limitations of the available data, to explore the potential reasons why a foam dressing was not managing a low level of exudate, and whether the poor periwound condition was a result of this, or if this problem was present at the start of the evaluation.

Three patients were withdrawn from the evaluation, who were found to have a sensitivity to acrylic adhesive dressings. Overall, the dressing was considered to have performed equal or better than an equivalent dressing in 71% of cases.

Eighteen of the wounds were treated with the non-adhesive version of the foam, and in three cases the heel-shaped non-adhesive dressing was used. The heel-shaped dressing was only used on DFUs and in each case the clinician evaluated the dressing as 'good.' In the case where the adhesive version of the foam was reported as 'poor' in terms of adhesion, the clinician reported that the dressing did not stay in place; the wound was a DFU and the problem with the dressing's ability to stay in place may have been related to the position of the ulcer on the foot, if the area was subject to shear force on walking. However, the exact anatomical location of the foot wound was not recorded.

Figure 4. Dressing usage



CONCLUSION

This evaluation of Kliniderm foam with and without an adhesive border and including the heel-shaped version has demonstrated that, overall, Kliniderm foam could provide an effective alternative to a more expensive silicone adhesive for patients where a foam dressing is considered appropriate. WUK

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