

Clinical acceptability of a dressing with matrix technology: a multisite evaluation of acute and chronic wounds

Objective: This article will describe the findings of an evaluation on the performance and clinical acceptability of Urgotul Absorb Border (Urgo Medical), a silicone border adhesive foam dressing containing technology lipidocolloid (TLC) healing matrix technology, as either a primary or secondary dressing in the management of acute and chronic wounds in a multisite evaluation. The purpose of the evaluation was to establish the effectiveness of the silicone border dressing for managing exudate, ease of use, patient comfort and acceptability of the clinician for the dressing to meet with treatment objectives

Method: The patient experiences given through verbal or written feedback were also documented. Local Health Board evaluation forms were used to capture data and the authors of this article

created a data evaluation tool to collate and subsequently report all study findings.

Results: A total of 100 patients with wounds considered suitable for the application of the dressing were selected to take part in the study. In less than a four week period, 38 patients achieved wound healing with a further 36 patients demonstrating wound improvements within the same time period.

Conclusion: The dressing was found to have met both the clinicians and patients aims when used as either a primary or secondary dressing and was considered suitable for use in both acute and chronic wounds of varying duration.

Declaration of interest: The authors have no conflict of interest.

TLC healing matrix • silicone border • comfort • acceptability

Treating the underlying aetiology of a wound is not the only consideration it is also essential to select a wound product that aids healing and is acceptable to the patient.¹ Dressing choice must be able to accommodate the tissue type and exudate level, manage any odour and protect the periwound edge. The dressing choice should also take into account pain at change and the area to be dressed.²

Soft silicone dressings have been shown to prevent trauma to the wound bed and periwound skin and have been described as 'atraumatic' for this reason.³ Some foam dressings contain a soft silicone layer that covers the entire surface of the dressing. The Urgotul Absorb Border dressing comprises a soft silicone border and polyurethane foam pad with an absorbent layer covered with a non-adherent technology lipidocolloid (TLC) healing matrix.⁴ When in contact with wound exudate, the hydrocolloid particles become hydrated, swell and interact with the lipophilic substances to form a lipidocolloid gel.⁵ This helps to support and maintain a moist environment, promoting wound healing.¹ *In vitro* studies have demonstrated the TLC healing matrix enhances fibroblast proliferation, and this proliferative effect was noted when the dressing was in direct contact with the cells and also with sub-millimetre distance from the cells.⁶

Our aim was to evaluate the efficacy and suitability of

silicone dressing and healing matrix¹ when used as either a primary or secondary dressing. Although it is understood that the benefits of the matrix would only be obtained when the dressing was used as a primary dressing and in direct contact with the wound bed. However, as many foams are used as secondary dressings it was agreed to include this as an acceptable criteria for assessment. This assessment as a secondary dressing would take into account, patient comfort, ease of application and removal, adherence and ability to manage exudate.

Method

The evaluation took place after seeking health board governance approval during a six-month period. District, treatment room and practice nurses from nine health centres and general practice surgeries from across the health board were recruited to undertake wound assessments, dressing changes and data capture for the purposes of the evaluation. Informed consent was given by each patient actively involved in the evaluation process. All clinicians completed a local health board evaluation form as part of the study. Each patient involved in the study was selected for a maximum period

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Table 1. Summary of wound characteristics and outcomes

Type of wound	Number of patients
Pressure ulcer	31
Leg ulcer	8
Surgical	13
Trauma	34
Fungating tumour	2
Other	12
Wound duration (weeks)	
<4	22
4-8	17
9-12	16
13-20	6
21-36	7
37-52	7
>52	3
Missing	22
Foam dressing used before change	
Allevyn gentle border	51
Mepilex border	11
Tielle plus	9
Tagaderm foam	17
Polymen	5
Activheal adhesive	7
Outcomes after 4 weeks treatment	
Healed	38
Improving	36
Static	5
Deteriorated	6
Discontinued	12
Maintaining wound	3

of 4 weeks as the authors felt this allowed enough time for product evaluation and data collection without being too time-consuming for the supporting clinicians participating in the evaluation. However, if a wound was continuing to improve use of the product was continued but further data not captured. Before treating any patient with the new dressing, the clinical teams received education on the product features and benefits by the tissue viability nurse, supported by Urgo Medical representatives to ensure consistency in appropriate selection of wounds suitable for inclusion and for ensuring reliability in expectations and clarity of wound healing outcomes.

Criteria for inclusion was patients over the age of 18 who were using an absorbent foam dressing with a silicone adhesive border as part of their dressing choice as either a primary or secondary dressing and either a acute or chronic wound of any duration or location on the body. To provide consistency with regard to tissue type, and as the evaluation was not capturing data with regards to the debridement ability of the dressing, wounds that had greater than 20% slough or necrosis to the wound bed were excluded in the evaluation until debridement or desloughing of the wound bed had taken place. In addition to this all wounds demonstrating signs or symptoms of clinical infection were also excluded. Only patients with written or verbal consent were included in the evaluation.

While the initial evaluation was a direct switch with the existing silicone adhesive foam dressings for silicone lipidocolloid dressing, it was recognised that other foam dressings were being used by the clinical teams. Based on their positive experiences with silicone lipidocolloid, the decision to switch some of these dressings over to silicone lipidocolloid dressing was made by the participating clinicians with the informed consent of the patient if their wounds also met the other inclusion criteria.

Dressing change regimes remained the same as with the previous dressing used, however, following assessment of the wound, dressings were changed according to improvement or deterioration to the wound bed. Outcomes after four weeks were to evaluate wound progression by recording any reduction in wound bed surface area, any reduction in exudate. Visual changes including level of slough, granulation tissue or epithelial tissue evident were also recorded. The performance of the dressing in managing expectations, ease of application, ease of removal and an overall rating of product using an ordinal scale were captured. Patient comfort was measured using a visual analogue scale with 0 being no pain and 10 being extremely painful.

Both the clinicians and the patient feedback on the evaluation parameters of the silicone lipidocolloid dressing were captured using an ordinal score along with a free text box within the data capture tool for any additional comments the patient or clinician wished to make. Parameters collected:

- How well did the product meet the aims
- How easy was the product to apply
- How easy was the product to remove
- Overall how do you rate the product
- Patient comfort rating
- Would you use the product again.

Results

A total of 107 patients participated in the evaluation, however, due to missing data on seven forms, 100 were involved in the data capture for the study. Of these, 53 were female and 43 male, gender was not specified for four patients and 70% of the patients involved in the study were over the age of 61 years. Of this, 27% of the patients were between 81-100 years old and 14% of patients were between 31-60 years old. Age was not specified in 15% of patients.

The silicone lipidocolloid dressing was used as a primary dressing in 83% of wounds. In the remaining 17% it was used as a secondary dressing for cavity wounds that required a primary dressing before the application of a foam.

Within the study 22% of wounds were considered acute with an average duration of less than four weeks (Table 1). Acute wounds were defined as postsurgical, traumatic injuries and skin tears all of which had a duration of under four weeks. Chronic wounds included pressure ulcers (PUs), leg ulcers, fungating tumours and any wound that had failed to progress along the

expected wound healing trajectory within 4 weeks. Chronic wounds accounted for 56% of wounds involved within the study (n=56). Of these chronic wounds duration ranged from greater than 4 weeks to beyond one year (Table 1). Acute wound accounted for 22% and in 22% this data was missing.

Wound healing has been achieved in less than four weeks for 38 patients (Fig 1), healing was measured by total wound surface area presenting with epithelial tissue (Table 1). A further 36 patients showed improvements measured by reduction in wound surface area, reduction in slough and increase in level of granulation or epithelial tissue evident. These wounds had been present for 10 weeks or more in most cases (Fig 2).

Of the 38 wounds that healed within 4 weeks, 45% of these were acute and 32% were chronic. There was no specific wound aetiology identified as healing faster, although it was noted that with the majority of wounds that healed the product was used as a primary dressing and had direct contact with the wound bed.

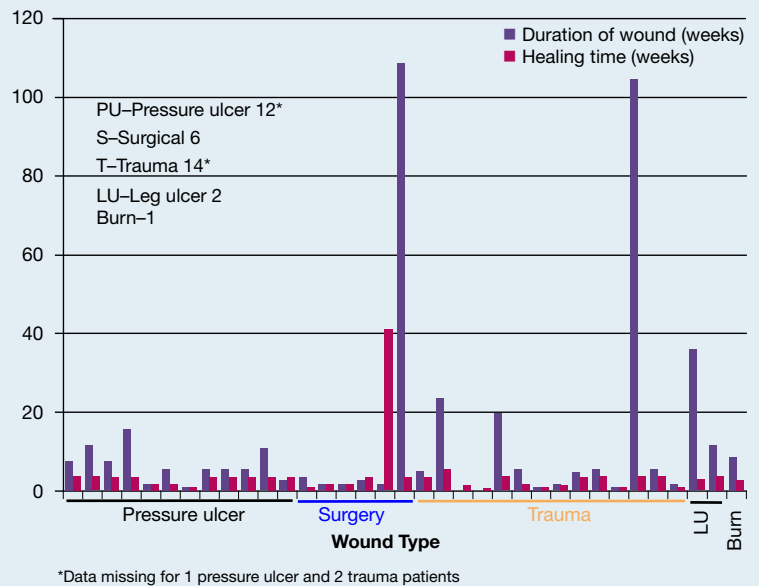
There were five wounds that remained static and six deteriorated. Of the six wounds that deteriorated, one was due to non-adherence by the patient two due to acute infection leading to hospital admission, for two no cause was found and for the last wound overgranulation was expected with possible local infection.

Discontinuation occurred in 12 patients some for multiple reasons:

- Itching at the border (n=3)
- Admission to hospital (n=1)
- Maceration of the wound (n=1)
- The dressing not adhering (n=5)
- Erythema beneath adhesive layer (n=4)
- Contact layer adhering to wound bed (n=3).

Peri wound maceration appeared to be due to exudate not being managed by the foam and clinical assessment

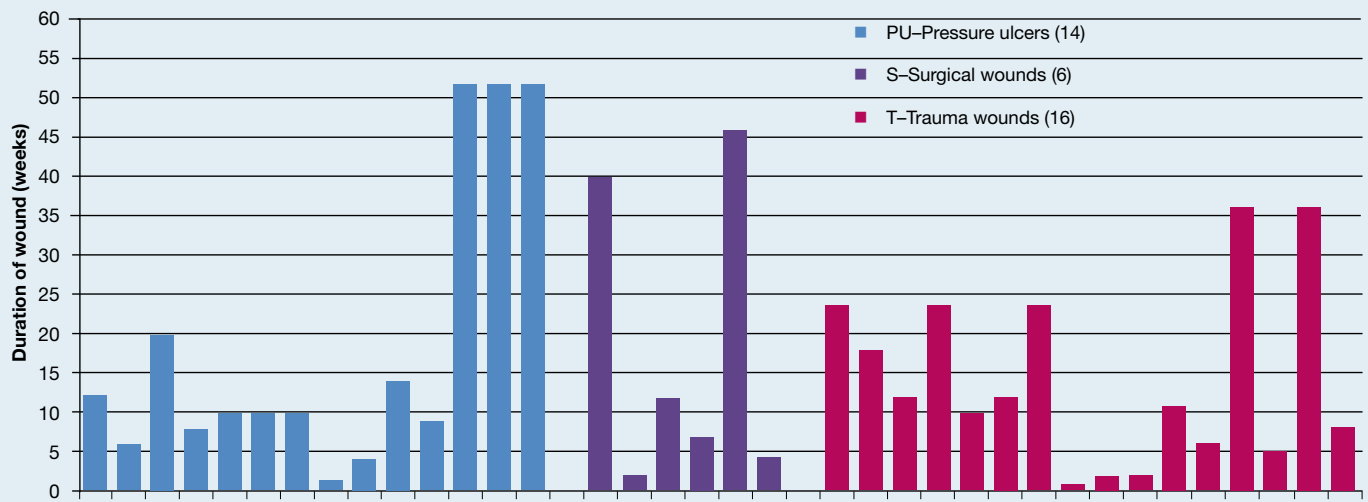
Fig 1. Type and duration of the wounds which healed within 4 weeks of beginning treatment with the silicone lipidocolloid dressing (38 in total)



should have led to a more absorbent wound product being applied. For the patients where the dressing was not adhering these wounds were situated over the sacrum or buttocks and the same adherence issues were noted with all the previous foams used in these instances.

Each clinician was asked to evaluate how well the product met their aims in comparison to other silicone foams previously used with 27% rating the product as very good (n=27) and 36% rating the product as excellent (n=36). The dressing was rated as good or fair in meeting their aims by 16% of clinicians feedback (good, n=4; fair, n=11) Only 9% of clinicians rated the dressing as poor (n=9). There were 12 forms having data missing.

Fig 2. Data displaying type and duration of wounds before evaluation, all of which showed improvement within four weeks of starting treatment with the silicone lipidocolloid dressing (36 in total)



For ease of application 88% of clinicians evaluated the dressing as very good or excellent (very good n=28; excellent n=60). For ease of removal 82% of clinicians rated the product as good, very good or excellent (good n=2; very good n=36; excellent n=46), 6% had documented not applicable as dressing had been discontinued. For both ease of application and ease of removal data was missing on 12 forms.

Clinicians were then asked to rate the product overall, with 68% of clinicians rating the product as very good or excellent (very good, n=32; excellent, n=36). Clinicians who rated the product as fair to good account for 17% of responses (fair, n=10; good, n=7) only 3 clinicians responded as poor. Data was missing on 12 forms.

When clinicians were asked if they would use the dressing again 75% of respondents recorded 'yes' they would use the dressing again. For patient comfort 73% of responses rated the dressing as either very good or excellent (very good n=34; excellent n=39), 12% of responses rated the dressing as fair or good (fair, n=4; good, n=4) 4% of responses rated the dressing as poor (n=4) with data missing from 11 forms.

There was one report of part of the wound contact layer separating from the dressing and adhering to the wound bed. This was fully investigated but no cause could be found. For this patient the dressing was discontinued immediately.

Discussion

This study has shown encouraging results in the effective use of silicone lipidocolloid dressing in both acute and chronic wounds. While this study has been able to demonstrate positive outcomes for the majority of patients, the authors also recognise that there have been some limitations in product

performance for a small number of patients involved in the evaluation. Minor skin sensitivities occurred in seven patients and included itching or erythema beneath the adhesive layer, dressings in these patients were discontinued. It is unclear from the data capture whether these sensitivities had also occurred when the patients were using other foam dressings containing a silicone adhesive border. Three clinicians have reported a significant reduction in dressing change rates for their chronic wounds as a result of using silicone lipidocolloid dressing, identifying a total number of 36 visits in the four week period preevaluation, reduced to a total of 16 visits within the 4 week evaluation period. Thus suggesting a reduction in nurse visits can also be seen as a financial benefit.

Limitations

The authors acknowledge that the evaluation did have limitations, data collection was only for four weeks, though if wound showed evidence of healing treatment was not discontinued. The silicone lipidocolloid dressing was only compared with products that were on the local wound formulary and the authors are aware that there may be other products available on the market that will manage specific wounds as effectively. There was no data collected with regard to wound bed preparation before application of silicone lipidocolloid dressing.

Conclusion

Based on the patients experiences and the clinicians assessments, this evaluation demonstrates that the silicone lipidocolloid dressing is an acceptable dressing choice in order to improve wound healing outcomes when used as either a primary or secondary dressing in the management of acute and chronic wounds of varying duration. **JWC**