

The development of an algorithm to support nurses choosing dressings for chronic exudate

KEY WORDS

- ▶ Decision-making
- ▶ Dressing choice
- ▶ Exudate management
- ▶ Questionnaire

Exudate management in complex wounds is challenging. On the Isle of Wight it had been observed that there was a high spend on hydrofiber and foam dressings, but limited use of calcium alginates. A simple, short, visual questionnaire was devised and given to wound care link nurses on the Isle of Wight. The aim was to establish nurses' understanding of the different types of exudate and to collect data on the subsequent decision-making by nurses when undertaking an holistic assessment of a wound. Based on the results, a dressing choice algorithm tool was developed for nurses to use when matching the clinical performance of a dressing with their assessment of the wound bed presentation.

Each wound requires a treatment plan that is appropriate for its specific characteristics, e.g. shape, location, tissue type present and exudate type. This paper focuses on the nature of wound exudate and how determination of the type of exudate can inform the subsequent choice of an appropriate dressing.

The management of wound exudate requires the clinician to have an understanding of what it is, why it is present and how to monitor and assess it accurately (White and Cutting, 2006). The authors suggest that haemostasis has a key role in the wound healing continuum. The understanding of complexities of wound exudate, particularly in the case of haemo-serous or haemo-purulent discharges, could mean the use of dressings with haemostatic properties are the appropriate management choice as they can support the healing process at a bio-interactive level in addition to the basic exudate handling method of absorption.

The use of alginate dressings for wound care including burns, lacerations, trophic ulcers and amputations was described by Blaine (1947). Numerous formulations and presentations were investigated, including films, wool and gauzes. Clots were formed *in situ* by mixing sterile solutions of calcium chloride and sodium alginate. Despite these early successes, the use of alginates in wound management declined

until, in the mid-1980s, interest was reawakened by a number of papers that described the use of a new alginate dressing, Sorbsan® (Aspen Medical Europe Ltd), in the treatment of diabetic ulcers and other problem wounds (Fraser and Gilchrist, 1983; Groves and Lawrence, 1986). Blood loss from burns and donor sites treated with Sorbsan was almost half that recorded from comparable wounds treated with gauze (Groves and Lawrence, 1986). The haemostatic properties of calcium alginates and their role in management of bleeding wounds have been well documented since Blaine in 1947 (Thomas, 1992; Timmons, 2009; Allymamod, 2011; Okushi et al, 2012).

AIM

Wound care link nurses are a key support for the tissue viability service. Exudate management in complex wounds continues to be a challenge on the Isle of Wight. It was noted that there was a high spend on hydrofiber and foam dressings. While calcium alginates were listed on the trust formulary, their use was limited. It was felt that the nurses were unaware of the potential benefits of alginates where blood is present in the exudate or bleeding friable wounds.

The wound care link nurses were asked to complete a questionnaire in order to establish their knowledge and use of dressings available. The questionnaire highlighted the need for

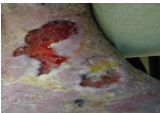
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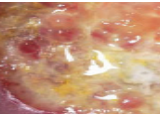
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further training so an algorithm was developed to guide staff in the appropriate use of products and reduce overall costs.

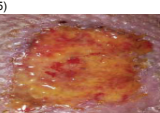
Quiz for exudate June 2011
 This questionnaire is to help me understand what decisions are taken by you when managing wounds with various degrees of exudate.

1) In your experience what type of wounds are commonly associated with high levels of exudate
A Diabetic foot **B** Leg ulcers **C** Pressure Ulcers **D** Surgical Wounds
E Burns **F** Traumatic Wounds **G** all of the above
 Answer: _____

2) The World Union of Wound Healing document (2007) describes exudate types. Can you match the pictures to the correct description:
 **A** Clear, serous exudate
B Thick haemopurulent exudate
C Bloody exudate, friable granulation tissue that bleeds easily
D Foul Purulent exudate
 Answer: _____
 b) What dressing would you choose here ?

3)
 **A** Clear, serous exudate
B Thick haemopurulent exudate
C Bloody exudate, friable granulation tissue that bleeds easily
D Foul Purulent exudate
 Answer: _____
 b) What dressing would you choose here ?

4)
 **A** Clear, serous exudate
B Thick haemopurulent exudate
C Bloody exudate, friable granulation tissue that bleeds easily
D Foul Purulent exudate
 Answer: _____
 b) What dressing would you choose here?

5)
 **A** Clear, serous exudate
B Thick haemopurulent exudate
C Bloody exudate, friable granulation tissue that bleeds easily
D Foul Purulent exudate
 Answer: _____
 b) What dressing would you choose here?

All pictures sourced from the EWMA Consensus Document (2007)

Figure 1. The quiz document given to wound care link nurses on the Isle of Wight.

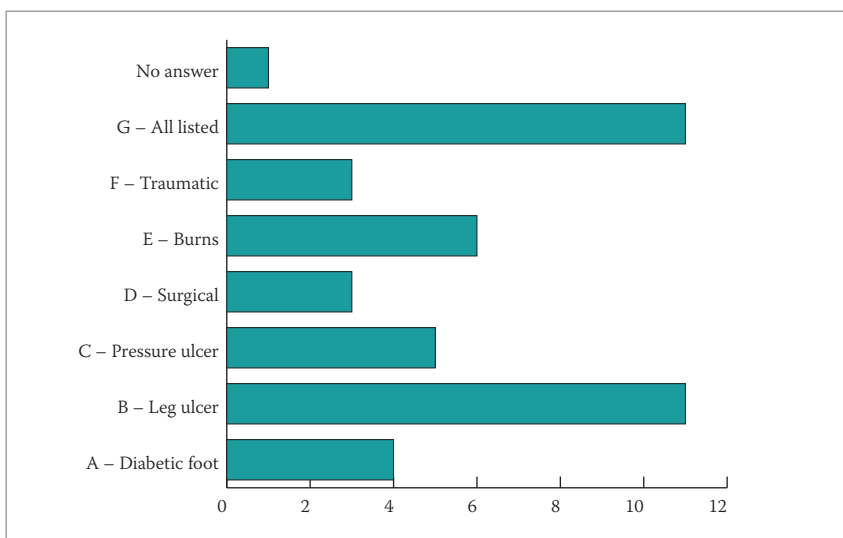


Figure 2. Answers to question 1: "In your experience what type of wounds are commonly associated with high levels of exudate?" The correct answer was G.

METHOD

A simple, short and visual questionnaire was devised and given to link nurses on the Isle of Wight (Figure 1). The aim was to:

- ▶ Establish nurses' understanding of the different types of exudate as described in the best practice statement from the World Union of Wound Healing Societies (2007).
- ▶ Collect data on the subsequent decision-making by nurses when undertaking an holistic assessment of a wound.

Based on the results, a dressing choice algorithm tool was developed for nurses to use when matching the clinical performance of a dressing with the assessment of the wound bed presentation.

RESULTS

A total of 24 nurses from two sites completed the questionnaire. The majority worked in hospital settings (n=15), and the remaining staff were community nurses (n=9). The Isle of Wight covers both primary and secondary care.

The answers were varied, particularly when it came to describing different types of wound associated with high levels of exudate, as shown in Figure 2.

Using pictures to assess knowledge does not give nurses the full history, or allow them to see the wound in its entirety as they would in clinical practice. Only qualified staff were asked to complete the questionnaire. We did not capture the grade and experience of each nurse. This may account for the ambiguity in the answers given.

Of the four wounds shown, there was a general trend for the use of Aquacel® (ConvaTec) and Allevyn® (Smith & Nephew) brand dressings. Despite the presence of blood in the exudate in some examples, alginates were poorly represented. From these results, assessment and consideration of the exudate type present does not appear to direct the choice of treatment (Figure 3).

DISCUSSION

Alginates and hydrofiber dressings are often compared like for like when in fact they are very different products and different chemistry (White and Cutting, 2006). The best practice statement from the World Union of Wound Healing Societies (2007) suggests that dressings

are interchangeable, but actually decisions are more complex in the clinical environment. We are asking nurses to assess wounds on a number of different factors – smell, pain, quality of exudate, quantity of exudate, and exudate viscosity – the questionnaire did not capture.

We never asked the nurses why they selected those particular dressings. These results lead us to question if they understand what the dressings do.

CONCLUSION

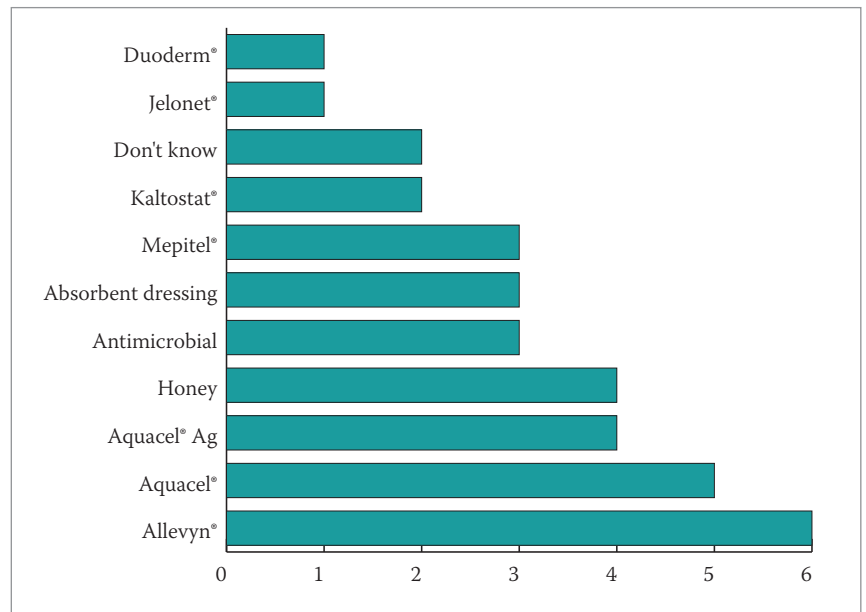
The questionnaire has given us a better understanding of the nurses’ knowledge and skills in this area. However, it has raised more questions than it has answered.

The authors intend to use the algorithm in the clinical area to see how it performs in clinical practice. We hope that nurses will have a better understanding of how, when choosing dressings, they need to understand their various properties and how these may influence the wound healing environment when linked to the various stages of wound exudate management.

Since the implementation of the algorithm Sorbsan and Sorbsan silver (Aspen Medical) are listed on our formulary for bleeding, bleeding friable, and bleeding infected wounds.



Figure 3. Response to question 5b, “Which dressing would you choose?” when shown an image of a wound with thick haemopurulent exudate.



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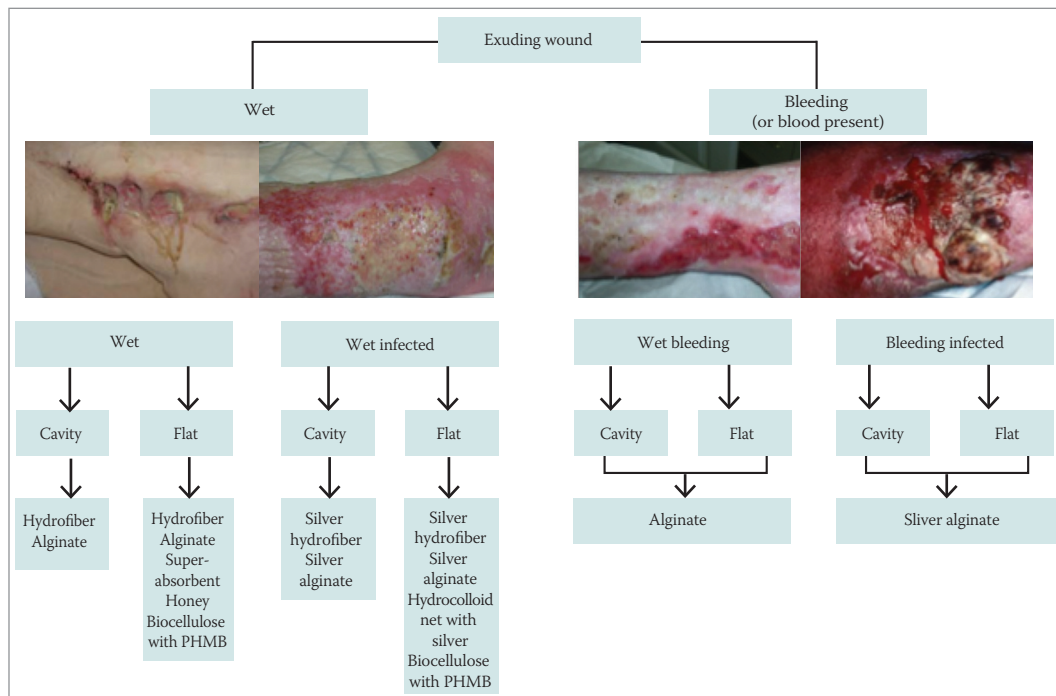


Figure 4. The wound exudate dressing choice algorithm.