INTRODUCTION

- Exudate is derived from fluid that leaks from blood vessels in the wound bed; it first appears during the inflammatory phase of wound healing.
- It contains a variety of substances, i.e. water, electrolytes, nutrients, inflammatory mediators, white cells, protein-digesting enzymes, growth factors and waste products.

AIMS

- This article summarises the proceedings of a symposium held at the Foot in Diabetes UK conference (November 2014).
- It outlines the role that excessive exudate production can have on the healing of diabetic foot ulcers (DFUs), and describes how the effective absorption and retention of exudate using Exufiber® may promote healing.

KEY FINDINGS

Role of exudate in wound healing

- Exudate promotes healing by maintaining a moist wound environment, aiding the migration of tissue-repairing cells, enabling the diffusion of nutrients and immune and growth factors, and assisting with autolysis.
- The amount and composition of exudate depends on wound aetiology, wound healing stage, underlying pathology, and wound environment.
- As a wound heals, the amount of exudate produced usually decreases.

Problems associated with high exudate levels

- Chronic wounds (e.g. DFUs) may produce increased levels of exudate due to prolongation of the inflammatory phase of healing.
- If high levels of exudate are not managed appropriately, leakage onto the peri-wound region may occur, thus increasing the risk of skin damage (e.g. maceration and excoriation) and wound enlargement. This can also impact negatively on the patient by causing distress, social isolation and reduced quality of life.
- High levels of wound exudate may increase healthcare burden by extending healing times, increasing the risk of complications (e.g. infection) and increasing the required frequency of dressing changes that impact heavily on clinician time and resource usage.
- Compared to that of healing wounds, chronic wound exudate contains higher levels of inflammatory mediators and activated protein-digesting enzymes that may delay healing by breaking down extracellular matrix in the wound bed and damaging peri-wound skin.
- Effective exudate management may aid healing, reduce the negative impact on the patient, and make more efficient use of healthcare resources.

Assessment and management of exuding DFUs

- Assessment of high exudation in a DFU should be part of a full assessment of the patient, the wound and surrounding area (Figure 1).
- Dressings are the mainstay of local management for high exudation, aimed at removing excess exudate (to protect the wound and peri-wound skin) whilst maintaining a moist environment.
- Retention of exudate within the dressing is important in order to prevent leakage and to prevent contact of the peri-wound skin with potentially damaging exudate.
- Dressings that contain substances which form gels on contact with exudate hold the exudate within their structure. Even when these dressings are put under pressure, once absorbed the exudate cannot leak out of the gel so reducing the risk of maceration and excoriation.

Exudate management using Exufiber

- Exufiber is a new gelling fibre dressing for the management of moderately-to-highly exuding wounds (Box 1).
Box 1. Features and benefits of Exufiber

Case study 1

Patient history:
- Male, aged 68 years;
- Current medical history: non-insulin-dependent diabetes; peripheral neuropathy;
- Previous history of ulceration on both feet.

Wound history:
- 5-month old DFU on plantar aspect of left foot at 5th metatarsal head;
- Area 0.55cm²; depth 4mm;
- Granulation tissue and slough present;
- Moderate levels of exudation; moderate-to-severe maceration of peri-wound region;

Treatment regime:
- Cleansing and sharp debridement;
- Exufiber applied (dressing changes 2-3 times weekly); offloading.

Outcome:
- After 3 weeks of treatment with Exufiber, exudate levels were much reduced, there was no evidence of maceration or skin stripping and the wound had reduced in size;
- The wound was closed after 6 weeks and completely healed after 8 weeks of treatment with Exufiber (Figure 2);
- Exufiber was easy to apply, comfortable to wear, stayed securely in place, and was easy to remove (non-traumatic).

Figure 2: Case study 1 at beginning of treatment with Exufiber (a) and after 8 weeks (b)

Case study 2

Patient history:
- Male, aged 59 years;
- Current medical history: insulin-dependent diabetes; peripheral neuropathy; gastro-oesophageal reflux;
- Multiple digital and metatarsal amputations on both feet over 15-year period;

Wound history:
- 14-month old DFU on plantar aspect of left foot at 5th metatarsal head;
- Length 4cm; depth 2cm;
- Probing to tendon; slight odour;
- Moderate-to-high levels of exudation; maceration around wound edges.

Treatment regime:
- Cleansing and sharp debridement;
- Exufiber applied as primary dressing (dressing changes 2-3 times weekly);
- Foam dressing used as secondary dressing; offloading.

Outcome:
- After 1 week of treatment with Exufiber, the wound was probing to about 8mm, appeared to be slightly improved with only mild maceration observed, exudate levels had decreased to moderate levels, and odour was no longer present;
- After 4 weeks of treatment with Exufiber, the wound had further improved and had reduced in size (area 0.32cm² and depth 0.4cm) (59% reduction in area; 92% reduction in depth) (Figure 3);
- Exufiber was easy to apply and remove. No leakage was observed. The patient requested continuation of treatment with Exufiber.

Figure 3: Case study 2 at beginning of treatment with Exufiber (a) and after 4 weeks (b)

CONCLUSIONS

- DFU care should include strategies to ensure that excessive exudate is managed optimally to prevent exudate-related problems and maintain a moist wound environment.
- Exufiber is a new gelling fibre dressing for the management of moderately-to-highly exuding wounds that is currently being investigated in the management of DFUs.

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