Demystifying debridement and wound cleansing

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Any effective leg ulcer management model involves both care of the wound itself and the skin of the lower limb. Effective skin management and wound cleansing is a key component of managing bacterial bioburden and ensuring that the periwound margins are in an optimum condition to promote healing at the wound edges and maintain overall skin integrity. Where ulceration is erosive and edges unclear, it can be difficult to know how extensive the actual ulcer is.

Skin changes are commonly seen around venous leg ulcers as a result of venous changes. In addition to the thickening of the subcutaneous tissue (lipodermatosclerosis) it is common to see redness, scaling, weeping and crusting around a wound; these are all features of dermatitis or eczema (interchangeable terms). In some patients the top layers of the skin become very thickened with scale or covered with adherent old keratin (hyperkeratosis).

Skin barrier function
Maintaining skin barrier function is an important part of skin care. The skin has many functions, importantly as a barrier and an immunosurveillance organ (Ryan, 2013). Loss of the barrier function results in an inability to control transepidermal fluid loss, leading to inflammation, dryness and potentially infection.

Wound fluid
Wound fluid (exudate) can also be very irritant to healthy skin, especially under some dressings. Effective skin cleansing regimens, together with more frequent dressing changes can be helpful in treating very irritated skin.

Clinicians may often concentrate upon the dressing change at the expense of effective skin hygiene. There may be a number of historic reasons for this, such as the time and effort required for a traditional wash with bucket and water.

Debridement
On occasions the objective may be to debride the tissue. Debridement is different to cleansing, which is simply the removal of dirt from a wound (Kamolz and Wild, 2016). Debridement can be defined as the removal of devitalised tissue, infected tissue, hyperkeratosis, slough, pus, debris or any other type of bioburden from a wound to promote healing (Strohal et al, 2013).

Chronic wounds such as leg ulcers or pressure ulcers often contain dead tissue and bacteria. This can be either dry and ‘leathery’ in appearance, which is known as eschar; or soft and coloured brown, grey or yellow, which is known as slough. Slough is made up of white blood cells, bacteria and debris, as well as dead tissue, and is easily confused with pus, which is often present in an infected wound.

Chronic wounds are likely to need repeated debridement as part of ongoing wound care to remove slough, a gel-like mass of dead or living bacteria, fibrin and tissue-destroying enzymes at the base of a chronic wound. Slough prevents normal healing (Mooney, 2009).

While debridement is a process that occurs naturally in some wounds,
KEY POINTS

- In the community setting, leg ulcer management involves both care of the wound itself and the skin of the lower limb.
- Cleansing is vital to ensure that infection does not develop in the wound itself and that the integrity of the periwound skin is maintained.
- Maintaining the skin’s barrier function is also vital, as, without this, fluid loss, inflammation, dryness and infection can develop.
- Wound exudate can also act as an irritant to healthy skin, particularly when permitted to accumulate under wound dressings.
- Keeping the skin clean and free of debris, alongside more frequent dressing changes can help in the treatment of irritated skin.
- This article highlights the use of an innovative cleansing product (UCS; medi UK), which is designed as a pre-moistened cloth that safely and efficiently cleanses the wound of slough and debris, while rehydrating periwound skin.

There are a number of debridement techniques available from surgical to physical/mechanical methods (Foot in Diabetes UK [FDUK] expert working group, 2014), and clinicians should be aware of the options available.

It is not necessary for all community nurses to be able to perform all types of debridement, however, they should have sufficient understanding to recognise which treatment is the most appropriate for the individual person and their wound (Vowden and Vowden, 2011).

WOUND ASSESSMENT

The decision whether to debride a patient’s wound must be based on a comprehensive wound assessment performed by a competent and trained practitioner (Ousey and Cook, 2012). The assessment must be fully documented. Effective debridement of the wound allows the clinician to make a detailed assessment of the wound bed and surrounding area.

Traditional practice

The treatment of leg ulcers has traditionally involved debridement and cleansing with a bucket wash or similar, often incorporating a bath oil or emollient. This allows the gentle removal of hyperkeratosis and can be soothing for many patients. However, some patients such as those with diabetes-associated neuropathy for example may experience increased pain and thus refuse this cleansing regimen.

This practice is also physically demanding for the clinician or healthcare assistant as each bucket of water is likely to contain approximately four litres of water (weighing 4kg) and is therefore heavy to carry from the tap to the patient and back again. The whole process of filling and moving buckets of water is time consuming and physically demanding, in some cases leading to musculoskeletal issues for clinicians who have to repeat the task regularly.

Cleansing and Debriding with a Pre-Moistened Cloth

UCS® (medi UK) is a premoistened debridement device — the fluid used to premoisten the cloth helps to soften unwanted tissue in preparation for gentle and effective removal by the UCS cloth.

UCS is a class IIb medical device and is therefore safe for use in deep wounds where there may be exposed tissue and bone etc. UCS was approved for registration on the Drug Tariff in England, Scotland and Wales in May 2014.

The ingredients contained in the debridement cloth are:
- Poloxamer 188: a surfactant.
- Surfactants are able to provide a ‘deep clean’ of tissues and wounds by breaking down the

Figure 1. UCS softness and durability.

Figure 2. UCS ease of use.
CASE STUDY

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Mr M was a 89-year-old man with dominant dystrophic epidermolysis bullosa (EB) who had a chronic wound on his left lower leg. The wound bed was partially occluded by a large scab which made it difficult to fully assess (Figure 1).

A UCS wipe was applied gently over the area to help soften the scab. After five minutes the UCS wipe was removed. The scab had softened enough for it to be removed without trauma or pain for the patient (Figure 2). This enabled the wound to be assessed more effectively.

Biopsies were later taken and the scab was found to be due to squamous cell carcinoma. The photos show the benefits of UCS for wound assessment as well as improvement of the surrounding skin.

interface between water and oils and/or bacteria. They ‘hold’ the oil/bacteria in suspension, allowing them to be removed more easily. This action allows for deeper cleaning than that provided by water

- Allantoin: a moisturising and mild keratolytic, which causes the skin’s keratin layer to soften. This property helps skin to heal quickly and to bind moisture effectively, benefitting dry skin and helping to heal wounds, burns and scars
- Aloe vera barbadensis leaf extract: this comprises ingredients derived from the various species of aloe vera for a soothing and moisturising effect. It has no known side effects.

A study of the efficacy and tolerability of UCS in Finland in 2010 showed that all of 60 patients in the evaluation rated ‘ease of use’ and ‘softness and durability’ as either ‘excellent’ (67%) or ‘good’ (33%) (Figures 1 and 2).

Alternative uses

The moisture contained within the UCS sachet helps to soften necrotic tissue, slough and exudate in the wound. The same fluid has been successfully used as an eye wash and to treat acute mouth ulcers by removing biofilm and therefore aiding rapid healing.

EASE OF USE AND PATIENT PERSPECTIVE

Hughes (2015) ran a qualitative study to evaluate the UCS debridement cloths, and feedback allowed evaluation of the effectiveness of UCS in practice from both a patient and a nurse point of view:

- One-hundred percent of staff found UCS easy to use
- Ninety-four percent said UCS made a visible improvement to the wound
- Six percent saw no noticeable difference
- Ninety-one percent of patients said it was comfortable treatment
- Nine percent experienced some discomfort
- Ninety-six percent said they would use UCS again; 4% said they would not use it again, but no rationale for this was recorded at the time.

Hughes’ (2015) evaluation concluded that patients and staff were happy to use UCS, which demonstrated visible improvements in the skin condition of patients, so much so that local clinical leaders changed the practice and policies for washing limbs to include UCS following the evaluation period.

UCS has also been found to be effective in the treatment of hyperkeratosis as well as cleansing and hydrating the surrounding skin (Downe, 2014; Hughes, 2015). After debridement and cleansing with UCS the skin will dry naturally; there is no need for mechanical towel drying.

A COMMUNITY PERSPECTIVE

In the authors’ experience, UCS wipes can be successfully used as part of lower limb ulcer management within a clinic and home environment where bucket usage can be reduced. Some of the considerations of using UCS are:

- Productive clinical environment: nurses spending time on direct clinical care instead of bucket management. Cleansing time is also reduced. This can benefit both patients and staff
- Pain management facilitated: the UCS wipes provide a good cleansing alternative where pain was experienced. This is especially useful where patients have neuropathic pain that increases on wound exposure or exposure to water
- Ease of skin cleansing: the wipes are easy to use and the oils enable gentle clearance of dry and hyperkeratotic skin. Patients report that their limbs feel rehydrated and supple
- Wound cleansing enhanced: cleansing the wound with the wipe targets bacterial burden so removal of slough and debris is enhanced
- Infection control: wipes are individually wrapped so are...
specific to a single patient (single-patient use), while being easy to dispose of. Bucket spillage and cross infection is negated.

- Reduction in manual handling: risk relating to manual-handling issues, especially within the home, are addressed.
- Cost-effective alternative: where the wipes are used appropriately the cost of leg ulcer management can be impacted as less nursing time is required for providing care leading to greater productivity.
- For patients who may miss having their limbs washed with a bucket, a compromise can be reached where both techniques are used so that they feel clean and refreshed.

It is important with any product to consult the manufacturer’s instructions and to consider the needs of the individual patient. As with all topical applications, some patients may experience skin sensitivity following the use of UCS and unmonitored use may be costly if practitioners do not use the wipes appropriately.

CONCLUSION

Skin care and ulcer bed management is critical in lower limb ulcer management. Within a framework of value-based care and productive working, UCS wipes are an effective addition to the management regimen for patients with lower limb ulceration especially within a busy clinic or community team.

REFERENCES


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