

Is it time to review how we clean leg ulcers?

KEY WORDS

- ▶ Leg ulcer
- ▶ Cleaning
- ▶ Skin care
- ▶ Buckets

Wound cleansing should be seen as an integral part of wound bed preparation to optimise the wound environment by removing debris, reducing bacterial load and preventing biofilm activity. Clinicians have a number of options to choose from when selecting an appropriate wound irrigation solution. One factor to consider includes the ability to mount a rapid antimicrobial response to microbial contamination, while avoiding damage to human cells important for wound healing.

The cleaning of chronic wounds such as leg ulcers is an important part of a patient's management plan. Leg ulcers are often covered in debris such as exudate, residue from dressings and build-up of creams or moisturisers. The surrounding skin can also be dry and encrusted. Wound cleaning allows clearer visualisation of the wound bed and enables a full assessment of the wound (Leaper et al, 2012). It also promotes hygiene and provides an opportunity to fully examine the surrounding skin.

The practice of wound cleansing was previously a much-discussed topic in healthcare, and the benefits of using tap water over saline to clean wounds was debated and researched at length. Several studies were undertaken to assess and compare efficacy and potential infection risk of both approaches, particularly in acute wounds but also in pressure ulcers (Riyat and Quinton, 1997; Betts, 2003). This research did not identify an increased risk of infection associated with use of tap water, therefore clinicians began to use tap water in chronic wound care in community settings (Griffiths, 2001; Selim et al, 2001; Patel and Beldon, 2003). This practice was widely adopted in the care of patients with leg ulcers, where the use of a lined bucket to soak and cleanse the limb became standard practice (Scottish Intercollegiate Guidelines Network, 2010; British Association of Dermatologists, 2014; Harding et al, 2015).

A search of the literature for current information on wound cleansing revealed only updates to Cochrane reviews (Fernandez and

Griffiths, 2012; Moore and Cowman, 2013), a protocol for a review on venous leg ulcers (McLain and Moore, 2015) and a single paper looking at the use of tap water foot baths as opposed to saline in patients with foot ulcers (Sano and Ichioka, 2013). The limited literature therefore suggests that this topic is currently not on research agendas, and has indeed become accepted practice.

CURRENT PRACTICE

The use of lined buckets filled with warm, potable water appears to have significant benefits for patients with leg ulcers. Patients with venous leg ulcers may have compression bandages applied for many months, and their wounds can become malodorous and wet. Failure to cleanse the leg in-between bandage applications may leave the patient feeling dirty, unclean or smelly, which can lead to or compound social isolation (McLain and Moore, 2015). Patients may rarely have the opportunity to shower or bathe to clean the rest of the lower limb; indeed many are still told that they should keep their wound dry. Lindsay (2007) describes the process of washing a patient's leg as 'a therapeutic, non-invasive, holistic intervention'. The same author describes how soaking legs in buckets of warm potable water can create a sense of normality and wellbeing for patients (Lindsay, 2007).

In addition to the beneficial hydrating effect of the soaking (particularly if an emollient is used in the water), wound cleansing softens any residual exudate that may have dried on

JACQUI FLETCHER
*Clinical Strategy Director,
Welsh Wound Innovation
Centre, Cardiff*

NICOLA IVINS
*Clinical Research Director,
Welsh Wound Innovation
Centre, Cardiff*

the skin and facilitates the safe removal of skin scales or crusts. If dressings are at all adhered to the wound they may be more easily loosened in water. The removal in water reduces aerosolisation of dried exudate and contaminated skin scale, thereby reducing the risk of infection (Kingsley, 2014). The volume of fluid in the bucket allows for the gentle cleansing of the wound either by gentle agitation of the water or the careful use of gauze to wipe the wound. Wolcott and Fletcher (2014) suggest this can help achieve the goals of wound bed preparation by assisting in the removal of loose materials, allowing better visualisation of the wound bed and creating a more optimal environment for healing.

EMERGING CHALLENGES

Recently several challenges have arisen in the practice of wound cleansing using buckets of potable water. These include manual handling problems and the reoccurrence of anxiety about the risk of cross infection from patients' own skin to their wound or vice versa (Harding et al, 2015).

Manual handling

The manual handling issue is a pragmatic challenge; in leg ulcer clinics or Leg Clubs, buckets can be safely moved using specifically designed trollies where available (*Figure 1*), however, in patients' homes the unavailability of trolleys and lack of space in some homes makes this more difficult. Lindsay (2007) highlights that it is the individual practitioner's responsibility to ensure that the weight of the filled bucket is within their organisation's guidelines. However, the Manual Handling Operations regulations 1992 do not issue specific guidance, stating that '*there is no universally safe maximum weight for any load*' (Health and Safety Executive [HSE], 2014). The HSE (2012) suggests that for a load to be lifted to knuckle height, a safe weight for women is 10kg and men 15kg. A smaller jug can be used to fill and empty the bucket to reduce the weight of water being transported, but this can be time-consuming and increases the risk of spillage, which may in turn increase the risk of slips and falls. Therefore a sensible approach should be taken to individual situations.

Cross infection

Anxiety around the infection risk in wound cleaning has arisen as a result of interest in the Aseptic No Touch technique (ANTT), and relates not to the question of whether to use water rather than saline, but to the technique itself. The epic3 guidelines (Loveday et al, 2014) state that the aseptic technique should be used for 'any procedure that breaches the body's natural defences including ... Care of wounds and surgical incisions'. However, this guidance is specifically focused on inpatient care, and it has little relevance to how care is delivered in many community settings. The guidelines state that '*we identified no clinical or economic evidence that any one approach to the aseptic technique is more clinically or cost-effective than another*'. In guidance prepared for Leg Clubs, Kingsley (2014) states that for wounds healing by secondary intention a modification of the ANTT can be used; this is commonly referred to as a clean technique. It maintains all of the essential elements of ANTT to minimise the likelihood of pathogenic transmission of microorganisms. The guidance produced for the Leg Club is based on standard infection control precautions (National Institute of Clinical Excellence, 2012; Royal College of Nursing, 2012; NHS Wales, 2014; Health Protection Scotland, 2014) and suggests that if buckets are lined and appropriately cleaned, there is no increased risk of cross infection. There has since been no additional evidence produced to indicate that washing legs in buckets of water increases the risk of cross infection to either the patient, the clinician delivering the care or any subsequent patients whom the clinician sees. Therefore this anxiety appears to be unfounded.

Equipment

Irrespective of how the wound is cleaned, a dressing pack is still required, and this can also be a challenge. The majority of packs available do not contain adequate equipment for managing a leg ulcer. The bag supplied is rarely adequate to cope with the amount of rubbish removed, which may include four layers of bandage and a dressing as well as any product used during the cleaning and redressing of the wound. Aprons



Leg ulcer buckets on a trolley.

need to be long — caring for a patient with a leg ulcer requires an apron that ends below the knees — and several pairs of gloves are required. Gloves do not need to be sterile, but depending on the size and complexity of the wound, 4 or 5 pairs can be required. The leg should be patted dry, but there is nothing in an average pack to do this. Therefore on most occasions clinicians collect a variety of equipment to carry out care. Lee (2015) identified how this lack of a standard pack could impact on care delivered; in an observational study of safe and effective intravenous cannula insertion it was demonstrated that when staff had to collect additional items to the pack they complied with guidance 40% of the time, but when new packs with all of the necessary equipment were introduced, compliance more than doubled to 90%. A specific leg ulcer pack may therefore be beneficial and help reduce the risk of cross infection, since in a patient's own home the additional items required may not be readily accessible.

An alternative to leg soaking is the use of new debridement cloths; pre-moistened wipes which can be used to cleanse both the leg and the ulcer. These cloths usually contain a surfactant that helps lift loose debris from the skin and also moisturises and softens the skin (Downe, 2014). They also apply a layer of moisturiser to the skin, which is recommended practice (Harding et al, 2015). However, they are an

additional cost and are not available in every setting.

CONCLUSION

McLain and Moore (2015) suggest that failure to cleanse a wound and limb appropriately may compound the negative effects of leg ulcers, prolonging healing time and increasing the risk of infection and associated complications. This could serve to exacerbate the adverse effect of venous leg ulceration on the individual, impacting negatively on health and social gain. A consistent approach is required to wound care that follows best practice guidelines. Cleaning the wound and surrounding limb, and ensuring the skin is clean, dry and well hydrated by use of appropriate moisturisers should be a routine part of care (Harding et al, 2015). Appropriate equipment practices and processes must be easily and equitably available to facilitate this. Any changes to practice should be based on evidence, not an 'anxiety' that cross infection may occur. Most importantly the environment in which care is delivered should be properly assessed and considered so that neither the patient nor the caregiver are placed at risk.

It appears that there is no clear evidence about which is the best way to clean a leg ulcer, however, it does appear that the methods currently available all have some shortcomings, whether that be concerns about infection and moving and handling or inadequacy of packs. Perhaps this needs to be an area of further study.

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