

# Leg ulcer care: should we be washing the legs and taking time for effective skin care?

## CONTRIBUTORS

RICHARD WHITE

*Scientific Editor, Wounds UK, Professor of Tissue Viability, University of Worcester and Director of DDRC Wound Care, Plymouth*

ELLIE T. LINDSAY OBE (ETL)

*Independent Specialist Practitioner; Visiting Fellow, Queensland University of Technology*

JACQUI FLETCHER (JF)

*Clinical Editor, Wounds UK*

KIM DREWERY (KD)

*Tissue Viability Nurse, Sheffield Teaching Hospitals NHS Foundation Trust, UK*

ROSE COOPER (RC) (Question 4)

*Professor of Microbiology, Cardiff Metropolitan University, UK*

The effective skin care of patients with ulceration of the lower limb involves washing (Lindsay, 2007; Stephens and Lindsay, 2008). This is not new information having been widely recommended in the literature for decades (David, 1986; Hampton and Collins, 2004; White, 2014). The advocated method of washing is as follows:

- ▶ Soak the leg in a clean (plastic-lined) bucket of warm water at each treatment
- ▶ Remove dry scales and wound edge encrustations to allow emollients to moisturise the skin
- ▶ Gently cleanse the leg using soap substitutes (Nix, 2006; Nix and Haugen, 2010)
- ▶ Thoroughly dry the limb, particularly between the toes.

This whole process can be time-consuming, especially if the patient has a lot of scale to remove and oedema of the toes, making drying difficult. Nevertheless it should be done as it is of considerable clinical benefit insofar as it affords the clinician time to observe the whole limb in detail

(Hodgkinson and Nay, 2005), soften dry skin and scale, and most important, is valued by patients for the 'feel good' or wellbeing factor.

Such practices are not widely employed in leg and foot ulcer management in the UK. Reasons cited include 'time consuming', 'infection risks' and issues related to buckets and liners. However, these concerns have been addressed and should not prove any deterrent to the delivery of quality care (Lindsay, 2007). These objections cannot be accepted as they are not valid. The practice of washing is 'sporadic' throughout the NHS. Some Trusts have seen fit to write a clinical guideline for the procedure (Wirral, 2012), yet others do not (White et al, 2012). There are, as yet, no UK national guidelines although NHS Wales states: *"The first stage is to clean your ulcer this can be done by gentle washing with warm tap water. Sometimes saline (salt water solution) is used instead. The aim of this is to remove debris and dead tissue that accumulates on the surface of the ulcer between dressing changes. Removal of this helps ulcer healing"* (NHS Wales, 2014). Additionally, the Scottish Intercollegiate Guidelines Network (SIGN) Guideline 120 does acknowledge the value of, and need for, leg washing in this statement: *"Encourage patients to wash their leg gently in warm tap water when bandages are being changed"* (SIGN, 2013); and the British Association of Dermatology (BAD) issue similar advice in a patient information leaflet (BAD, 2014). However, as not all patients are capable of doing this, nursing staff will have to undertake it for them. Anecdotally, very few podiatrists will wash the leg/feet of their patients with diabetic foot ulcers: as there are no contraindications, why is this the case?

Why then is leg washing and skin care not practised widely on all leg and foot ulcer

patients? Should we seek to increase the degree of washing and skin care, and if so, how may it be achieved? These are the issues that form the basis of the current debate.

*Richard White*

## 1. To what degree is routine leg washing the accepted practice for leg and foot ulcer patients in your area?

**ETL:** The holistic psychosocial Leg Club approach to wound care advocates that clinicians treats the whole person, including the person's mental and social wellbeing, rather than just managing the leg ulcer. This psychosocial approach encourages the practitioner to see the procedure of washing a patient's leg as a therapeutic, non-invasive, holistic intervention designed to promote healing. There have been numerous papers and literature reviews written on the subject of washing and/or cleansing when undertaking leg ulcer management. Guidelines within the psychosocial Leg Club model (Hampton et al, 2014) strongly recommend that members (patients) are provided with the opportunity to soak their legs in a plastic-lined bucket of warm water, and to those who have been many years without washing their feet, this has a huge impact on their wellbeing. Especially as being unable to maintain total personal hygiene has both a direct and indirect impact on an individual's quality of life. Nursing functions have broadened, and nurses' skills need to keep pace with rapid scientific advances in wound management. However, the simple act of washing the lower limb regardless of the settings should be considered a very reasonable component in raising quality of life and wellbeing issues.

**JF:** Leg washing depends on the environment of care, it is much easier in some areas than others, it tends to be more common with patients with leg ulcers than patients with diabetic foot ulcers. Where possible we wash legs in a bucket or sometimes use a bowl and a jug to pour water over the leg, however, these are not always available or there may not be suitable space to do this safely. Patients generally value the washing as it may be the only time they get their leg washed particularly if they are in compression for a week and they perceive that the leg is slightly smelly from being encased in the bandages.

**KD:** At the Sheffield Teaching Hospital Foundation Trust Community Leg Ulcer Clinics, leg washing is indeed very much part of the whole lower leg care. Patients attend either weekly or twice weekly and the leg is washed on each visit. If for some reason it isn't possible, the patients do express dissatisfaction. Many express how much they look forward to the emersion of the limb in the clean warm water.

In the community, time constraints very much limit the ability to offer this service on every visit. Washing the legs of patients with bilateral oedema and limited mobility can be time-consuming and challenging for district nurses. However, care plans do state that legs should be washed at least once a week. This obviously also depends on patients providing a clean bowl whose sole purpose is for the leg washing. There are some environments where washing with a bucket just isn't realistic and in these cases saline sprays are used.

The tissue viability service advocates the use of an ointment to wash the legs. Hydromol® is the formulary choice at present.

## 2. Do your local clinical guidelines include detailed instructions on the

### methods of, and value of leg and foot washing and moisturisation?

**ETL:** At Leg Clubs, staff recognise that prevention and treatment of common skin ailments by the care team is an essential component to the fundamental care of the individual. Everyone who attends the Leg Club should be provided with good skin management, hygiene and preventive measures as this can greatly improve the clinical condition and quality of life of those experiencing skin-related problems.

Protocol-based care for washing of the lower limb is an integral part of leg ulcer management and practice; guidelines include how to wash the lower limb, test the temperature of water, lift and carry the water bucket, care for skin and foot and select appropriate dressings. To aid and enhance good, safe working practice, the Leg Club Clinician's Handbook provides informative, educational material that is underpinned by evidence-based practice. It outlines a rationale for a holistic approach to wound and skin care and the use of emollients.

**JF:** There is more guidance around the health and safety aspects of washing, for instance handling the weight of the buckets when filled with water or the safe disposal of the water. Moisturisation tends to be a little hit and miss, although it is widely accepted as good practice and is hugely beneficial for the patient (just think about the snow storm effect of dry skin when bandages are removed). Moisturising seems to depend on a product being easily available/accessible when carrying out the washing. The focus on the health and safety aspects when using buckets as a method of cleaning patients limbs has resulted in many organisations seeking alternative approaches, which they believe have lower risk for their staff.

**KD:** The Sheffield Leg Ulcer guidelines advocate leg washing, and the tissue

viability nurse service has written care plans with detailed instructions. However, I believe the understanding around the rationale is poor and that community nurses find the management of skin conditions challenging. The compliance with care plans has not been audited so it is not possible to say how accurately the care plans are followed. In the leg ulcer clinic we have a hydraulic chair that lifts the patient, so the nurses can wash the leg while sat on a stool. This very much reduces the challenge of the task, However, in a patient's home this is very much an 'on your knees' task. I also see a better provision of skin care around the pre-tibial area than the post-tibial area.

Even though the legs are washed with Hydromol ointment, 50% liquid paraffin with 50% soft white paraffin is still used as an emollient on the skin to the lower leg when compression bandaging is applied. The formulary recommends Zerobase® under compression hosiery, although patients choice is encouraged. Once in compression hosiery patients are encouraged to get discharged, relying either on themselves or a carer for lower leg management. Personally, I feel lower leg management should be a long-term condition with skin care very much a part of care long after the ulcer has healed and maintained in compression hosiery. I do feel the incidence of re-occurrence would decrease if nurses could continue to see patients for some time after healing rather than the emphasis being on discharge.

## 3. In your opinion, what more can be done locally and nationally to increase the degree of leg washing?

**ETL:** The research findings available regarding the safe use of tap water to cleanse legs affected by ulceration remain inconclusive (Lindsay, 2007). Washing the lower limbs, as part of leg

ulcer management, continues to be a controversial issue for many practitioners and seen as a task, as opposed to part of therapeutic care. Yet when questioned as to why we do not provide this service in our everyday practice, it is sometimes difficult for nurses to present a rationale for not undertaking the task of washing limbs. Many practitioners use ritualistic techniques and do not refer to research findings to dictate their actions. Others simply avoid the issue altogether, leading to the wholly unacceptable situation that some patients are unable to maintain adequate levels of personal hygiene. Some patients have not washed their lower limbs, or received nursing assistance to do so for several years. Also, there appear to be limited local Trust protocols and guidelines available on washing of the lower limb.

Findings from literature reviews and research papers analysed have still not provide any definitive answers. Regardless of individual opinion, it would be beneficial to patient care delivery if further studies could be undertaken and a campaign on raising awareness of the importance of this contentious issue becomes a priority within the healthcare fraternity.

**JF:** I'm not sure that leg washing should be a national initiative. It is something that should be an integral part of patient care. As such, it would be useful to have everything that is needed in a 'leg ulcer pack'.

Research in other areas, such as IV line insertion, has shown that there is much greater adherence to care bundles when the equipment necessary is also bundled together (Mediwales, 2015). It would be ideal to have a pack that contains extra kit, such as bigger disposal bags, a long apron, extra pairs of gloves, a cleansing/debriding cloth and a good moisturiser as an integral part of the pack. One of these packs is currently

being evaluated by the Welsh Wound Innovation Centre and has been submitted for a SATRE health technology challenge award.

**KD:** Ideally, district nurses would like to wash patients' legs. Patients often express satisfaction of feeling fresh and clean once the legs have been redressed and this is rewarding for nurses. However, it is not unknown now for our local district nurse teams to have 20 plus visits a day. Should these included two or more with leg ulceration, then the time allowed clearly isn't enough and the legs can always 'be washed next time.

I don't like to encourage patients to remove bandages themselves and wash prior to the nurse's visit as this can result in some time without compression that will allow oedema to return, which isn't encouraged in Sheffield. I feel the emphasis placed on competencies for applying compression bandaging should be mirrored by an understanding of the role, function and care of skin.

#### **4. What are the infection control risks, if any, in washing legs and feet with ulceration?**

**ETL:** It is widely acknowledged that the majority of chronic wounds are already colonised with bacteria and many practitioners will cite infection and time constraints as a rationale for not washing legs. Yet the practitioner will ritualistically clean the wound bed with normal saline solution as opposed to immersing the limb in a plastic-lined bucket of simple tap water to clean the wound and remove any exudate and surrounding dry tissue.

All ulcers will be colonised by microorganisms at some point, nevertheless, while the chronic wound is usually stable in terms of its level of infection, poor infection control techniques by the person caring for the patient can result in the wound being overwhelmed by microbial activity, leading

to extensive tissue destruction. The spread of infection via hands is well established, with hands being recognised as the principal route of cross-infection, and practitioners have a reasonability and duty of care to prevent cross-infection. This can be achieved by ensuring all staff are working to their local guidelines. Yet, regardless of this statement there have been many situations personally witnessed in both hospital and community settings where the clinician delivering care is wearing a wrist-watch, stoned rings and/or cardigan and handling of packs and notes while still wearing their gloves following treatment, which can lead to contamination.

**JF:** Whilst the use of buckets to wash legs has been challenged, used sensibly — i.e. with disposable liners — there should be little problem with infection control. Despite the incredibly widespread use of this practice, I have yet to see any evidence of cross-infection, for example a fungal foot infection transferring into a leg ulcer. Indeed, organisations such as the Leg Clubs use buckets regularly and have excellent infection rates. If there was overt infection then the usual precautions should be taken.

**KD:** In Sheffield tap water is used to wash legs. Nurses encourage the patient to purchase a bowl for the sole purpose of leg washing. Some nurses will line the bowl with a bin liner but this isn't always possible. The water is changed from one leg to another to reduce the risk of cross infection. The dressing pack provided has sterile towels that are used to dry the legs.

The management of lower leg ulceration is seen as a clean procedure rather than a sterile procedure. Once exudate has reached the outer bandage then the bandages no longer provide the same protection from infection. Bandage slippage too will often result in wounds being exposed.

In the leg ulcer clinic, bowls are shared between patients but washed and lined individually. Non-sterile paper towelling is used to dry the legs. Due to the nature of leg ulceration, the wound will always be contaminated with bacteria, therefore a sterile procedure for leg washing and bandaging is neither achievable or necessary but good clean practice is vital. Dried exudate and devitalised skin adhering to the surrounding skin is perfect medium for bacteria and good skin care should concentrate on removing this and reducing the risk it causes. However, the importance of recognising and managing infection is crucial.

**RC:** The role of drinking water in the transmission of enteric infection was established by John Snow during the 1854 outbreak of cholera in London. Since then, the safe collection and disposal of sewage, together with effective methods of disinfecting and distributing drinking water, have dramatically reduced rates of gastrointestinal infections. Although surveillance of bacteria in treated waters provides a means to assess water quality in terms of faecal contamination, drinking water is never sterile. Several bacteria capable of causing wound infection following contact with areas of compromised skin may be transmitted in drinking water. These include species of *Acinetobacter*, *Aeromonas*, *Enterobacter*, *Escherichia*, *Klebsiella*, *Pseudomonas*, *Stenotrophomonas* and non-tuberculous *Mycobacterium*. Although numbers of such bacteria in drinking water are usually low and the risk to healthy individuals is small, the risk to immunocompromised patients cannot be ignored.

Many of these potential pathogens are able to establish biofilms in taps, showerheads and sink drains; hence they could be disseminated directly into whirlpools, baths and tubs, or indirectly onto the surfaces of hands or devices, or into aerosols generated

by fountains or showers. Outbreaks of infection from these sources have been documented in hospitals: *Pseudomonas aeruginosa*, for example, has been linked to water supplies in neonatal units. Outbreaks in the community, however, are not documented. Guidelines for the prevention and control of infection from water systems in healthcare facilities were developed in Ireland in 2014 (Prevention and Control of Infection from Water Systems in Healthcare Facilities Sub-Committee of the HPSC Scientific Advisory Committee, 2014). Whether ulcerated legs or feet risk infection by washing in tap water is uncalculated. In Brazil microbial colonisation of cutaneous wounds in 40 rats irrigated daily for 2 minutes with either tap water or sterile isotonic saline on 6 consecutive days showed that both study groups acquired bacteria and fungi. It was deduced that using tap water to cleanse wounds in rats had no effect on microbial colonisation compared to sterile saline (Resende et al, 2012). Recently, a retrospective study in which the influence of cleansing method on limb prognosis was investigated in 236 patients showed that amputations were higher in patients whose chronic limb ulcers were cleansed in foot baths compared to patients whose chronic limb ulcers were cleansed by showering (Sano and Ichioka, 2015). Strong evidence that cleansing wounds (with any solution) reduces infection and increases healing does not exist (Fernandez and Griffiths, 2012; Moore and Cowman, 2013; Huang et al, 2015) and the differing methods employed in published clinical studies has made meaningful comparisons difficult to date. Robust investigations are required to determine the safest way to clean wounds.

WUK

## References

British association of Dermatology (2014) *Leg Ulcers*. Available at: <http://www.bad.org.uk/shared/get-file.ashx?id=237&itemtype=document> (accessed 22.01.2016)

- David JA (1986) Wounds with tissue loss. In: *Wound Management: A Comprehensive Guide to Dressing and Healing*. Dunitz Ltd, London: 101–34
- Fernandez R, Griffiths R (2012) Water for wound cleansing. *Cochrane Database Syst Rev*. 2: CD003861
- Hampton S (2004) Assessment, management and treatment of leg and foot ulceration. In: *Tissue Viability*. Whurr, London: 160–210
- Hodgkinson B, Nay R (2005) Effectiveness of topical skin care provided in aged care facilities. *Int J Evid Based Healthcare* 3(4): 65–101
- Huang C-Y, Choong M-Y, Li T-S (2015) Cleansing of wounds by tap water? An evidence-based systemic analysis. *Int Wound J* 12(4): 493–4
- Hampton et al (2014) *The Lindsay Leg Club Foundation Compendium* Available at: <http://bit.ly/1TGToUE> (accessed 25.02.2016)
- Lindsay, E (2007) To wash or not to wash: What's the solution for chronic leg ulcers. *Wound Essentials* 2: 74–83
- Lindsay E, Stephens F (2008) Effective skin care. In: Lindsay E, White RJ, eds, *Leg Ulcers and Problems of the Lower Limb: an Holistic approach*. HealthComm UK Aberdeen: 159–77
- MediWales (2015) *A Clinical Study Highlights The Role of Sterile Packs in Improving Compliance to Best Practice Guidelines* Available at: <http://www.mediwales.com/news/a-clinical-study-highlights-the-role-of-sterile-packs-in-improving-compliance-to-best-practice-guidelines/> (accessed 22.01.2016)
- Moore Z, Cowman S (2013) Wound cleansing for pressure ulcers. *Cochrane Database Syst Rev*. 3: CD004983
- NHS Wales (2014) *Leg Ulcer, Venous*. Available at: <http://www.nhsdirect.wales.nhs.uk/encyclopaedia/1/article/legulcer/venous/?print=1> (accessed 23.01.2016)
- Nix D (2006) Skin matters: Prevention and treatment of perineal skin breakdown due to incontinence. *Ostomy Wound Manage* 52(4): 26–8
- Nix D, Haugen V (2010) Prevention and management of incontinence associated dermatitis. *Drugs Aging* 27(6): 491–96
- Prevention and Control of Infection from Water Systems in Healthcare Facilities Sub-Committee of the HPSC Scientific Advisory Committee (2014) *Guidelines for the Prevention and Control of Infections from Water Systems in Healthcare Facilities*. Available at: <https://www.hpsc.ie/AboutHPSC/ScientificCommittees/Sub-CommitteesofHPSCSAC/WaterGuidelinesSub-Committee/File.14451.en.pdf> (accessed 23.02.2016)
- Resende M, Hochman B, Grahani A et al (2012) Tap water has no influence on microbial colonization of skin wounds in rats. *Wounds*. 24(9): 275–82
- Sano H, Ichioka S (2015) Which cleansing care is better, foot bath or shower? Analysis of 236 limb ulcers. *Int Wound J* 12(5): 577–80
- SIGN (2013) *Sign Guideline 120: Management of Chronic Venous Leg Ulcers*. Available at: <http://www.sign.ac.uk/guidelines/fulltext/120/section7.html> (accessed 23.01.2016)
- White RJ, Whyman N, Brown AK (2012) Venous leg ulcer healing in primary care: preliminary data. *J Wound Care* 21(11): 570–1
- White RJ (2014). An interview with Richard White. *Brit J Comm Nurs* 19(suppl 6): S54–5
- Wirral Community NHS Trust (2012) *Clinical Protocol for the Cleansing of Leg Ulcers*. Available at: <http://www.wirralct.nhs.uk/attachments/article/19/CP01CPCleansingoflegulcers10July2012.pdf> (accessed 23.02.2016)