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Atkin, Leanne and Tickle, Joy

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Original Citation

Atkin, Leanne and Tickle, Joy (2016) A new pathway for lower limb ulceration. *Wounds UK*, 12 (2). ISSN 1746-6814

This version is available at <http://eprints.hud.ac.uk/id/eprint/28947/>

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Lower limb Ulceration Pathway:

Leanne Atkin, Lecturer practitioner/Vascular Nurse Specialist, School of Human and Health Sciences, University of Huddersfield and Mid Yorkshire NHS Trust, E mail: l.atkin@hud.ac.uk

*JoyTickle, Tissue Viability Nurse Specialist, Shropshire Community Health NHS Trust
Email:joy.tickle@shropcom.nhs.uk*

Introduction

Leg ulceration is a common cause of suffering for patients, additionally it places a significant burden on the National Health Service (NHS). As the NHS continues to face times of austerity services need to find other ways of working to reduce cost and release nursing time whilst maintaining standards of care. The implementation of a pathway for the treatment of leg ulceration which aids diagnosis and uses compression hosiery kits as a first line management for venous leg ulceration can form part of the solution to ensuing patient safety, improving patient experience, releasing nursing time and ensuring effectiveness of care.

Leg ulceration incidence

Approximately 1% of the adult population in the United Kingdom (UK) will suffer from leg ulceration at some point in their life, with reported prevalence of between 0.1% - 0.3%, this increases to 3% in patients over 80 years, (Gohel and Poskitt, 2010). A more recent study undertaken by Guest et al. (2015) analysed the records of patients in The Health Improvement Network (THIN). The study showed that there were 730,000 patients with leg ulcerations during the one year study period. This equates to 1.5% of the adult population having a leg ulcer. Interestingly Guest et al. (2015) also identified that only 278,000 of patients with leg ulceration had formally diagnosed as having a venous ulcer. This equate, to only 38% which is far from the published evidence of around 70% of all ulceration being due to venous disease (Casey, 2004). There are many potential reasons for this but it does raise questions whether there is a general lack of diagnosis of venous disease which could lead to the under use of compression therapy which will ultimately result to elongated healing times.

It is estimated that leg ulceration costs the NHS up to £600 million every year, (Healthcare Commission, 2004), with the majority of patients being treated at home. A significant proportion of community nursing time is taken up caring for patients with leg ulceration, (Drew et al., 2007). Peak prevalence for development of leg ulceration is between 60 – 80 years and increases with age, (Farah

and Davis, 2010), therefore with an aging population the number of patients affected with lower limb ulceration is likely to rise leading to an increased burden on resources.

The first step to effective leg ulcer management

The first step to guaranteeing effective high quality care is to ensure accurate diagnosis. Prior to making any decisions regarding patient management each patient needs to be holistically assessed, this enables the practitioner to establish an accurate diagnosis of the underlying aetiology and identify any factors which could delay wound healing. Assessment of the patient needs to include past medical history, medication history, condition of skin, size of limb, type of wound bed and vascular assessment, (figure 1). Vascular assessment should include the use of a Doppler to analyse arterial flow and perform a calculation of Ankle Brachial Pressure Index (ABPI), this assessment is vital to ascertain if there is any indication of Peripheral Arterial Disease (PAD). Guest et al., (2015) highlighted that only 16% of patients with a leg or foot ulcer had a Doppler assessment completed. This suggests there is a significant need to increase the awareness of the need to ensure complete holistic patient assessment which includes assessment of arterial supply.

The second step to effective management

The majority of lower limb ulceration have a venous component, between 60 – 80%, (SIGN, 2010). Compression bandaging has been systematically proven to increase speed and rates of healing for patients with venous ulceration, (O'Meara et al., 2012). Compression therapy is a fundamental prerequisite to the healing of venous leg ulcers, management of chronic venous insufficiency and associated skin changes such as varicose veins, lipodermatosclerosis, and for the management of chronic limb oedema and lymphoedema (Nice 2012). Compression therapy has traditionally been in the form of multi-layer elastic bandages, but in reality bandaging ability varies greatly among clinicians, (Chamanga, 2014). Over the last 2 decades a number of other compression systems have been introduced into the UK, these include 2-layer compression bandage systems and hosiery kits. Hosiery kits hold a number of advantages over bandage systems, these include ease of use, consistent compression values (which are non-practitioner dependent), enabling patients to wear their own footwear and aid self-care. A large multi-centre randomised control trial showed that compression hosiery kits were a viable alternative in terms of cost and healing compared to compression bandaging, (Ashby et al., 2014). Additionally the concept of using hosiery kits as a 'step-down' approach from compression bandaging (once the limb and exudate levels allows) has shown to reduce

healthcare costs and release nursing time by reducing the frequency and duration of visits, (Tickle, 2015b).

There is currently a plethora of compression options available for clinicians which can create confusion about which should be used and the rationale for one system over another. It is important that the clinician understand the rationale for compression therapy, normal and abnormal venous return, knowledge of bandage/hosiery material characteristics and properties such as elasticity and stiffness. Recognising and understanding the interaction of patho-physiology, limb anatomy and materials explains why consistent effective and safe compression therapy is a skilled art (Vowden, 2014). An art that can make the difference between effective treatment and patient concordance or not.

It is important to remember that not all compression systems are the same and certain compression systems hold advantages over others, for example in patients with a combination of leg ulceration with oedema. In such cases inelastic systems will reduce the oedema more quickly than elastic bandages, (Wounds International, 2013). This is due to the higher standing and working pressures and lower resting pressures of inelastic systems, which improves both patient comfort and the effectiveness of the calf muscle pump, (Wounds International, 2013).

The selection of which compression system to use should be made after considering of a number of factors including: patient health status (comorbidities, past medical history and underlying conditions); bandage properties (stiffness, pressure, number of layers cohesiveness, elasticity); assessment of the limb (presence of oedema, condition of skin, limb shape and size); Wound assessment (location, level of exudate, pain); and assessment of patients lifestyle and psychological issues, (Knowles, 2014, Jones, 2014). Deliberation of all of these factors can be difficult for the practitioner leading to confusion. The use of pathway flow charts aims to simplify this process to ensure all these factors are considered.

Avoiding confusion: A clinical pathway

Standardising clinical process through the use of pathways optimises quality of treatment and improves patient satisfaction, (Hensen et al., 2005). Pathways can help improve standards and many have been developed in relation to leg ulceration, but there is no up to date published pathway that steers practitioners in terms of diagnosis and compression selection. It is intended that this pathway will enable nurses to determine the ulcer aetiology, signpost when onward referral is required and aid cost effective compression selection. This pathway provides a simple algorithm for the practitioner which is underpinned by clinical evidence and international consensus, aiming to assist practitioners with compression selection for venous leg ulceration (Fig 2).

Conclusions

This pathway provides practical treatment guidance to assist practitioners in the management of lower limb ulceration which commonly involves a level of oedema. It incorporates the use of hosiery kits which is aligned with current evidence, helping to reduce overall costs and release nursing time. Due to the pressures now being faced by all clinicians it is vital that we consider alternative treatment approaches, while at the same time encouraging patient choice, independence and self-care. Further work is planned to validate this pathway, following this exercise the impact of implementing this pathway into two NHS community services will be evaluated. To improve practise throughout the UK an up to date national consensus is needed, which recommends treatment pathways for lower limb ulceration which reflects the evidence base and is appropriate for the modern NHS.

Figure 1

Holistic patient assessment

Patient-related factors:

- ▶ Medical history.
- ▶ Presence of comorbidities.
- ▶ Previous limb surgery and/or trauma.
- ▶ Family history.
- ▶ Medication history.
- ▶ Nutrition and hydration status.
- ▶ Presenting symptoms.
- ▶ Previous treatment and outcomes.
- ▶ Pain.

Psychosocial-related factors:

- ▶ Lifestyle.
- ▶ Occupation.
- ▶ Quality of life.
- ▶ Social activity.
- ▶ Sleep pattern.
- ▶ Dexterity and mobility.
- ▶ Care and social support network.
- ▶ Expectations of treatment.
- ▶ Weight and/or body mass index.

Limb-related factors:

- ▶ Ankle brachial pressure index (ABPI).
- ▶ Oedema: below and/or above the knee.
- ▶ Limb size and shape.
- ▶ Mobility and/or ankle movement.
- ▶ Presence of oedema.

Vascular-related factors:

- ▶ ABPI to check for arterial insufficiency.
- ▶ Vascular history.
- ▶ Limb temperature.
- ▶ Erythema, pallor and/or cyanosis.

Skin-related factors:

- ▶ Hydration.
- ▶ Skin changes such as haemosiderin staining, ankle flare and atrophie blanche.
- ▶ Lipodermatosclerosis.
- ▶ Skin folds.
- ▶ Skin allergies and/or sensitivities.
- ▶ Ulceration, including size, exudate levels, location, presence of infection.
- ▶ Scar tissue.

(Tickle 2015)

Taken from Tickle (2015a)

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Leg Ulcer Treatment Algorithm

