

A new pathway for lower limb ulceration

KEY WORDS

- ▶ Algorithm
- ▶ Clinical pathway
- ▶ Leg ulceration
- ▶ Lower limb
- ▶ Patient assessment

Leg ulceration is a common cause of suffering for patients, additionally it places a significant burden on the 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 by ensuring patient safety, improving patient experience, releasing nursing time and increasing effectiveness of care.

Approximately 1% of the adult population in the UK will suffer from leg ulceration at some point in their life, with a reported prevalence of between 0.1%–0.3%, which 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) database. The study looked at 1,000 records and extrapolated the data that there were potentially 730,000 patients with leg ulceration 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 estimated that only 278,000 of patients with leg ulceration had been formally diagnosed as having a venous ulcer. This equates to 38%, which is far from the published evidence of around 70% of all ulceration being due to venous disease (Casey, 2004). However, they did identify that a large percentage of patients with leg ulceration actually had no further diagnosis, which suggests that there could be many more that had not been diagnosed or labelled as venous. There are many potential reasons for this but it does raise questions whether there is a general lack of diagnosis of venous disease that could lead to the underuse 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 this 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 that 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 (*Table 1*). Vascular assessment should include the use of a Doppler to analyse arterial flow and perform a calculation of the 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 awareness of the need to ensure complete a holistic patient assessment that includes checks for arterial insufficiencies.

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Table 1. Holistic patient assessment (Tickle, 2015b)

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
Psychosocial-related factors
Lifestyle
Occupation
Quality of life
Social activity
Sleep activity
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 and presence of infection
Scar tissue.

THE SECOND STEP TO EFFECTIVE MANAGEMENT

The majority of lower limb ulceration has a venous

component, between 60–80% (Scottish Intercollegiate Guidelines Network [SIGN], 2010). Compression therapy has been proven to increase speed and rates of healing for patients with venous ulceration (O'Meara et al, 2012). Compression therapy is a fundamental pre-requisite 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 two 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 aiding 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 been shown to reduce healthcare costs and release nursing time by reducing the frequency and duration of visits (Tickle, 2015a).

There is currently a plethora of compression options available for clinicians that can create confusion about which should be used and the rationale for one system over another. It is important that the clinician understands:

- ▶▶ The rationale for compression therapy
- ▶▶ Normal and abnormal venous return
- ▶▶ Bandage/hosiery material characteristics
- ▶▶ Properties such as elasticity and stiffness.

Recognising and understanding the interaction of pathophysiology, 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 (Wound UK, 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 (Wound UK, 2013).

The decision 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, exudate level, pain)
- ▶ Assessment of patients lifestyle and psychological issues (Knowles, 2014; Jones, 2014).

Consideration of all of these factors can be difficult for the practitioner leading to confusion. The use of a pathway flow chart aims to simplify this process to ensure all these factors are considered.

A PATHWAY TO AVOID CONFUSION

Standardising clinical processes through the use of pathways optimises the 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 that is underpinned by clinical evidence and international consensus, aiming to assist practitioners with compression selection for venous leg ulceration (Figure 1).

CONCLUSIONS

This pathway provides practical treatment guidance to assist practitioners in the management of lower limb ulceration that 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 practice throughout the UK, an up-to-date national consensus is needed, which recommends treatment pathways for lower limb ulceration that reflects the evidence base and is appropriate for the modern NHS. WUK

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Leg Ulcer Treatment Algorithm

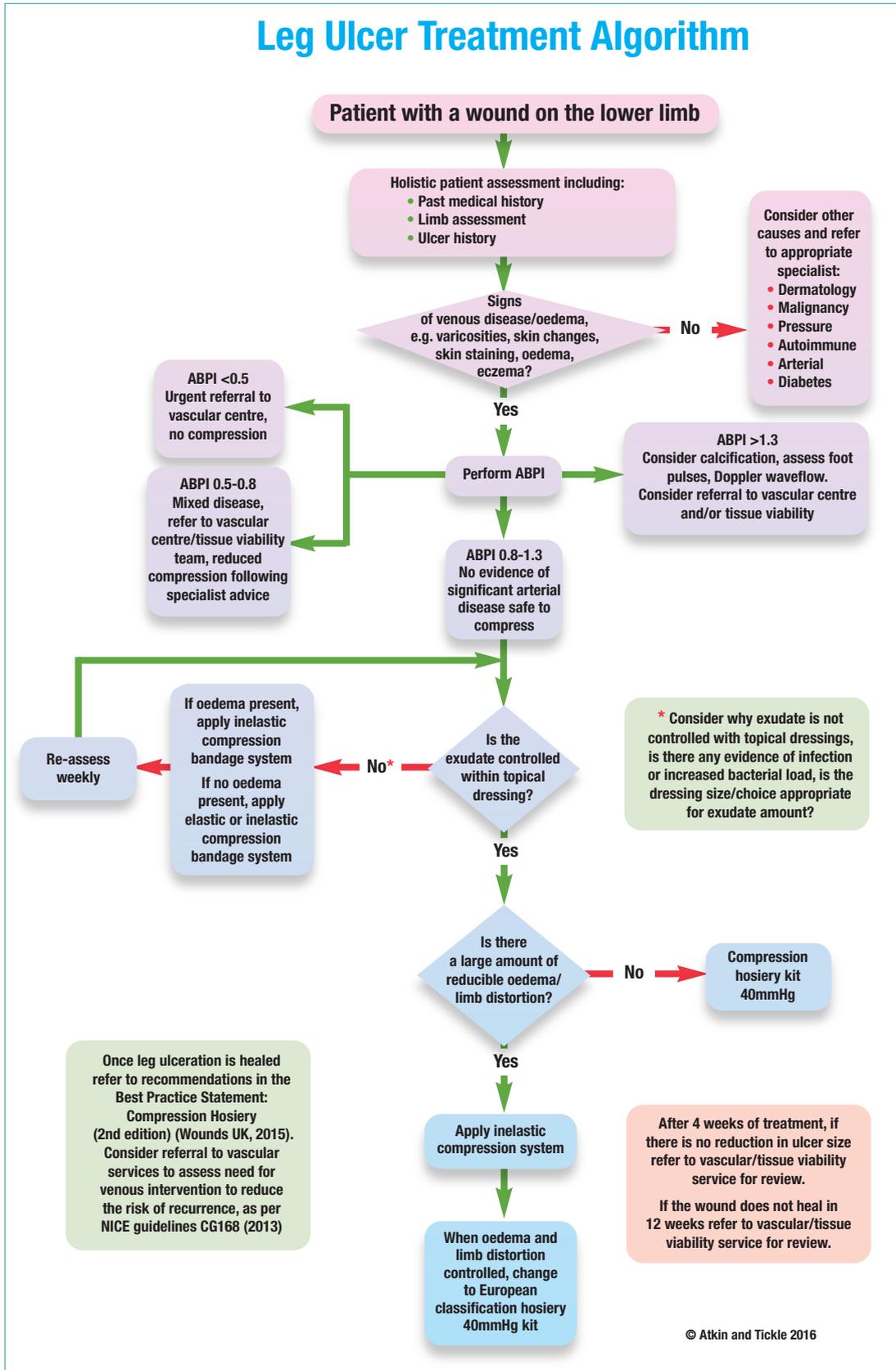


Figure 1. Leg ulcer treatment algorithm