Managing the nutritional status of community patients with leg ulcers

Jennifer Lunnon

This article discusses nutrition in relation to patients in the community who are living with venous leg ulcers. The author explores the complex issues surrounding the care of this patient group, which is predominantly made up of older people who often have several underlying medical conditions and may live alone in their own homes or in supported residential settings. The article covers the physiology and aetiology of venous leg ulcers and explores how nutrition plays a role in the healing process. It advocates a holistic approach, taking into account the many factors involved when considering nutritional status and suggests interventions that are available to nurses and healthcare professionals working in the community.

KEYWORDS:
Nutrition □ Leg ulcers □ Malnutrition □ Screening tools

Barasi (2003) refers to nutrition as ‘the study of foods and nutrients vital to health and how the body uses these to promote and support growth, maintenance and reproduction of cells.’ A second definition from Barasi (2003) sees nutrition as the study of the relationship between food and people, offering a more person-centred approach. In this article, both definitions will be used while considering the role of nutrition in patients with venous leg ulcers.

In practice most people do not know the specific quantities of nutrients required for their bodies to function each day and yet they take in enough to maintain adequate health (although whether this health is ‘optimal’ is hard to measure). An adequate intake of nutrients is vital to maintain good health and everyone must consume a certain amount of fats, protein, carbohydrates, fibre and micronutrients in order for their bodies to function effectively.

People with wounds that need to heal may have additional nutritional needs (Barasi, 2003). There are also social and psychological factors to consider, which are essential for holistic care and for understanding the numerous factors involved in the healing of venous leg ulcers.

VENOUS LEG ULCERS

The venous system transports deoxygenated blood and waste products from the capillaries in the tissues back to the heart in order for re-oxygenation to occur. Veins must be capable of defying gravitational forces and carrying blood upwards. It is estimated that 60% of all circulating blood is present within the veins at any one time (Moffatt et al, 2007).

Although there are many mechanisms behind how venous return from the legs is initiated and maintained, the most important factors that facilitate this are the calf and foot muscle pumps. The foot pump squeezes and empties the veins in the foot and the calf muscle pump compresses the deep vein and forces blood to be displaced as it travels up the leg. The one-way valves within the deep vein prevent the blood from refluxing, and ensure it continues to travel upwards against gravity (Moffatt et al, 2007).

According to Moffatt et al (2007), venous disorders of the leg are thought to affect up to one in three adults in the UK with 10–25% of adults having varicose veins, often caused by valves within the deep vein becoming incompetent, but often also combined with some degree of failure within the calf muscle pump.

These failures in mechanism result in a rise in venous pressure, referred to as venous hypertension (Moffatt et al, 2007). It is this venous hypertension that over time causes microcirculatory changes and localised tissue ischaemia, resulting in the tissue breaking down. A definition of a leg ulcer as ‘the loss of skin below the knee on the leg or foot, which takes more than six weeks to heal’ (Dale, 1983) is still widely used, however the healthcare practitioner needs to take other causes of tissue loss in this area into consideration, such as pressure damage or complications from diabetes, when diagnosing a leg ulcer.

Studies in the past 30 years have concluded that venous disease is the largest contributing factor to leg ulceration in the Western world. According to Tobon et al (2008) this is partly due to the high incidence of obesity, as, although the aetiology of varicose veins and leg ulcers is complex, it can be in part caused by excess adipose tissue putting a strain on the circulatory system.

More recently it has been recognised that venous ulcers have multifactorial causes, with few being attributed to venous disease alone. In the UK, the Lothian and Forth Valley study (Scottish Intercollegiate Guidelines Network...
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Intestinal perforation or obstruction due to structural or functional disorders of the gut wall, ileus, severe inflammatory conditions of the intestinal tract, such as Crohn’s disease, ulcerative colitis and toxic megacolon. Hypersensitivity to the active substances or any of the excipients.

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Reduced saliva production, along with a decrease in taste and smell can make mastication more of a challenge and can have an impact on enjoyment of food. For most people, meals are social events, but for older people who have little social or family support, meals can lose the social significance and importance in their lives.

The social isolation that older people can experience, particularly those living alone in their own homes, can have a massive impact on their lives, with both psychological and physical implications (Finlayson, 2011). In addition, oesophageal and gastric mobility may become impaired with age and gastric secretions reduced. This may affect food absorption, as can many prescribed drugs, resulting in under-nourishment. Taking all these nutritional factors into consideration, helping leg ulcers to heal presents a complex challenge in this group.

Physical ability is another extremely significant factor that can have a negative impact on diet and nutrition. The very process of preparing food may be difficult (McLachlan and Rich, 2003) and cooking facilities or kitchen layouts may be unsuitable for those whose mobility is reduced.

Leg ulcers are extremely painful to live with and often involve several layers of tight compression bandaging and dressings (RCN, 2006). Walking and standing for periods of time can be uncomfortable at the very least and, at worst, impossible (Briggs and Closs, 2006). Even shopping for food may not be possible if the individual with a leg ulcer has reduced mobility and poor social support.

A consequence of dental problems, poor mobility and the wound itself is social isolation. Poor mobility and high levels of pain can influence psychological status resulting in the patient becoming unwilling to leave the house (Finlayson, 2011).

Leg ulcers and their dressings can also be unsightly and malodorous, which will have an inevitable impact upon self-esteem and mental health.

According to MacLachlan and Rich (2003) this negative process can become cyclical and often the social and psychological difficulties cannot improve until the leg ulcer heals. However, the leg ulcer cannot heal without adequate nutritional intake, which is greatly influenced by psychological status as well as the practicalities of shopping for and preparing food.

**Nutritional screening is crucial in order to identify individuals at risk or who are already undernourished.**

Nutritional screening is crucial in order to identify individuals who are at risk or who are already undernourished. A referral for more in-depth assessment and/or nutritional intervention may be appropriate (Weekes et al, 2004). The purpose of nutritional screening has been defined in The European Society for Parenteral and Enteral Nutrition Guidelines for Nutritional Screening (Kondrupp et al, 2003) as ‘the prediction of better or worse outcomes due to nutritional factors and whether nutritional interventions are likely to influence this’.

**Screening tools**

Several tools have been developed to help evaluate risk for routine use in both acute and community settings. These tools must not replace professional judgement, but are intended to aid and highlight areas that might need addressing (Weekes et al, 2004).

The screening tools give scores to areas that could be attributed to poor nutrition such as recent weight loss, current medications and medical conditions. One example of a commonly used screening tool in trusts in the UK is the Malnutrition Universal Screening Tool (MUST) (Figure 1) (British Association for Parenteral and Enteral Nutrition [BAPEN], 2003). MUST uses body mass index (BMI), the presence of weight loss in the preceding three months and a score for any acute disease in order to determine the level of a person’s nutritional risk.
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The MUST nutrition screening tool.

Step 1

<table>
<thead>
<tr>
<th>BMI kg/m²</th>
<th>Score</th>
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<tbody>
<tr>
<td>&gt;20 (&gt;30 Obese)</td>
<td>0</td>
</tr>
<tr>
<td>18.5–20</td>
<td>1</td>
</tr>
<tr>
<td>&lt;18.5</td>
<td>2</td>
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Step 2

Unplanned weight loss in past 3-6 months

<table>
<thead>
<tr>
<th>BMI kg/m²</th>
<th>Score</th>
</tr>
</thead>
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<tr>
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</tbody>
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Step 3

If patient is acutely ill and there has been or is likely to be no nutritional intake for >5 days

Score — 2

Step 4

Add scores together to calculate overall risk of malnutrition.

Score 0 — Low risk
Score 1 — Medium risk
Score 2 or more — High risk

Low risk

Routine clinical care
- Ensure appropriate food and drink choices
- Repeat screening every 3-6 months, unless there are clinical concerns
- Document action taken

Medium risk

Observe
- Follow 'MUST'1 care pathway on page 10 of guidelines booklet

Treat
- Follow action plan for medium risk
- Refer to dietitian
- Re-weigh weekly
- Document action taken
- Unless detrimental or no benefit is expected from nutritional support, e.g. end of life care

High risk

This tool is to assist your assessment. If in doubt, use your professional judgement

At this point, it is worth noting that patients with a raised BMI can be overweight and yet malnourished due to a large intake of dietary fat with few nutrients. (Finlayson, 2011). The results of the screening test can indicate:

- Low risk: where routine clinical care would be appropriate
- Medium risk: where close observation is necessary in order to ensure the patient’s nutritional status does not become compromised
- High risk: where clinical and nursing intervention is necessary

A score indicating high risk may mean the patient needs to be referred to a dietician for a nutritional assessment, which will involve a detailed analysis of metabolic, functional and nutritional variables leading to a plan of care appropriate to the findings and specific to the individual (Kondrupp et al, 2003).

Screening tools are essential in community nursing to ensure nutritional status and weight loss are monitored but issues of validity and reliability must be considered (Carr, 2008).

Moffatt et al (2007) stress how important it is that these tools do not replace professional judgement and that the way in which the tools are used remains consistent so that the results are not ambiguous or open to interpretation. It is also vital that the outcome of a screening tool is acted upon where necessary and regularly reassessed to ensure best practice.

Education is a key factor for community nurses and they must give appropriate nutritional advice and care. A working knowledge of nutritional science is as essential as any other key aspect of nursing as this knowledge can bring about positive changes for patients (Weekes et al, 2004).

ROLE OF THE COMMUNITY NURSE

When a patient is judged to be at nutritional risk, the nurse must take a holistic view so as to interrupt the social, psychological and physiological chain of events that cause him or her to become under-nourished. The nurse then needs to look at improving the patient’s nutritional intake and start the process of effective wound healing, promoting general health and emotional wellbeing (Berridge, 2010).

In Nutrition Now: Principles for Nutrition and Hydration the RCN (2007) states ‘all nurses have the responsibility for providing person-centred and evidence-based care’. With regard to nutrition, this means taking into consideration all current or potential nutritional issues and acting upon these in the context of the patient’s individual needs. This may involve others in the multidisciplinary team if social, financial, psychological or other medical input is necessary.

The rise in the use of leg ulcer clinics has seen a significant increase in the success rate of healing leg ulcers (Moffatt et al, 2007) arguably due to the increased input from tissue viability specialists, enabling a more multidisciplinary, tailored treatment of the individual.

In Nutrition Now the RCN (2007) also states that nurses should assess the patient’s environment and ensure it contributes to adequate nutritional care. This is another instance where a
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and psychological aspects of a patient’s life that may contribute towards them having a poor nutritional status in the first place.

**CONCLUSION**

Community nurses must realise that an ulcerated leg is, in principle, a symptom of underlying physiological and psychosocial disorders and managing the underlying conditions is as essential as treating the ulcer itself. Although nurses play a frontline role in community care and are responsible for health promotion, dietary and lifestyle advice, referrals, management and ongoing assessment of this patient group, the decisions regarding patient care should be made within a multidisciplinary team not by one individual alone.

The team may contribute expertise from other nurses as well as medical staff, dieticians, tissue viability specialists, social workers and anyone else appropriate to each individual case. This will address psychological, social, physiological and clinical needs, using evidence-based practice, and put a patient's best interests and wellbeing at the heart of every decision.

**REFERENCES**


BAPEN (2003) Malnutrition Universal Screening Tool. BAPEN, Redditch


**KEY POINTS**

- Nutrition plays a vital role in healing for leg ulcers which are prevalent in older people.
- Nutrition can become compromised for older people due to physical, psychological and social factors.
- Nutritional screening is important to identify people at risk of undernourishment.
- The nurse working in the community must consider patients holistically to help address the varied factors that may cause them to be undernourished.


