Chronic oedema: identifying areas for service improvement

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This paper looks at an audit which compared the clinical outcomes of patients with lower limb oedema, who were either treated in a designated leg ulcer clinic or in their own homes. From exploring the findings, the author identified areas for service improvement such as staff training, staff allocation for clinics/home visits and completion and documentation of leg assessments. The piece of work forms part of a wider review of lower limb management within the author’s locality. The findings have facilitated greater discussion with senior management within the organisation around service provision for this patient group and gained valuable support for service and staff development.

KEYWORDS:
Chronic oedema □ Assessment □ Service improvements

Lower limb oedema is defined as a persistent, abnormal swelling of the lower limb (Bianchi et al, 2012), which is considered chronic after being present for over three months (Moffatt et al, 2003). If unrecognised and mismanaged, chronic oedema will eventually lead to lymphovenous oedema. However, this disease progression can be prevented if diagnosed and treated early in the disease continuum (Atkin, 2014).

The author works within a multidisciplinary skin integrity team (SIT), which has a common interest in the management of lower limb issues due to the many overlapping problems. The team comprises a tissue viability nurse, specialist dermatology and lymphoedema nurses, and covers a clinical commissioning group (CCG) area including both urban and rural populations. With the relatively recent formation of the SIT, focus has been on patients on the community nurse caseload with leg ulceration and how the SIT can support practice and outcomes within the leg ulcer clinics and for housebound patients who are cared for by the community nursing team.

As a result of attending an MSc module on the management of chronic oedema, the author recognised that within practice, community nurse visits were often made on a daily basis to see patients with wet, ‘weepy’ legs, indicating that oedema was being neither recognised nor appropriately treated.

Leg ulcer management (venous, mixed and unspecified in aetiology) has been found to have a 33% prevalence (732,000 patients) among the UK adult population, contributing to an estimated annual cost to the NHS of £5.3 billion for wound care and associated management of comorbidities (Guest et al, 2015). Lymphoedema and chronic oedema have been estimated to affect over 100,000 people in the UK (Moffatt, 2003). A subsequent study also identified that leg ulceration was present in 50% of community and inpatients who also had a diagnosis of chronic oedema, with this prevalence increasing with age (Moffatt and Pinnington, 2012). With such statistics and following the annual trust leg ulcer audit conducted in 2015, the author decided to review local practice more closely with a chronic oedema audit.

The aim of this audit was to reflect on local practice to gain an insight into clinical outcomes for this patient population by comparing practice between two clinical settings, namely a leg ulcer clinic and a community nursing team. This included looking at:

- Assessment
- Care planning
- Treatment.

Both the clinic and community team serve the same geographical area. Patients who are ambulatory are invited to attend the leg ulcer clinic, while housebound patients are seen in their own homes by community nurses.

The audit was undertaken by the author reviewing 10 patients’ care plans on each respective caseload (leg ulcer clinic and community). The author set the audit questions and recorded findings on an excel spreadsheet for analysis (Tables 1 and 2). All patients were active to the community nursing service and care plans documented on SystmOne (electronic patient record).

Practice point

Leaking fluid from lower limbs occurs when the lymphatic system is no longer able to cope with the fluid volume, which, in turn, has a detrimental effect on skin integrity and manifests as ‘weeping’ legs, skin breakdown and infection (Mahoney, 2015).
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Step 2
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Step 3
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The audit focused on one team, i.e. the community nursing time which covered the leg ulcer clinic and home visits, to allow for easier comparison between clinical settings and to reduce the number of variables, e.g. same leadership, training opportunities, team culture. Limiting the audit to one team also facilitated the identification of practice learning points and enabled targeted, focused training and implementation of an improvement plan.

**FINDINGS**

As a result of scoping the community nursing service, and gaining an understanding of the dynamics and skill sets of the community nursing team, the author observed that historical and ritualistic practice was commonplace for the treatment of patients with lower limb oedema.

This chronic oedema audit highlighted the need to revise the existing venous leg ulcer policy (which had been reviewed following the trust-wide audit in 2015), as it identified variations in practice between healthcare professionals and clinic settings, which had an impact on healing outcomes. The author also identified that there was a perception among some community staff that they were achieving good clinical outcomes, despite audit data illustrating the contrary compared to national healing rates.

**RESPONSE TO AUDIT FINDINGS**

Thus, the trust’s lower limb policy was revised and published following principles from a recent Best Practice Statement (Wounds UK, 2016). The new policy introduced different compression systems and gave staff the opportunity to attend a robust training programme to attain clinical competencies. Interestingly, Billingham (2008) identified that staff often report feeling ‘out of their depth’ and unsafe with new practice techniques and so need to be aware of their own limitations. This may in part account for the mismanagement of chronic oedema, in conjunction with healthcare professionals’ lack of recognition of the disease process, which the audit identified.

The findings also demonstrated that, at the time of the audit, the average length of time on the clinic caseload for the patient sample was 232.7 days (7.65 months), with healing still not being achieved. (These patients remained on the caseload, leading to congested clinics, and community nurses continuing to see housebound patients.) A consensus document has estimated that healing rates for venous leg ulceration is approximately 5.9 months and 7.4 months for mixed aetiology leg ulcers (Harding et al, 2015), highlighting how the new lower limb policy and training programme in the author’s trust has not yet realised the desired impact on clinical outcomes.

Each of the three community nursing teams within the author’s locality has a different clinical lead, with different knowledge and skill sets, which, as said, led to variations in practice. Thus, it has been decided that practice and training opportunities are to be standardised across the locality utilising a coordinated approach. The training programme has been developed with support from tissue viability colleagues from other localities and the STI, and includes clinical competencies, as well as:

- One-day update for nurses who have completed both a one-day accredited course in leg ulcer and chronic oedema management
- Two-day training for registered nurses in leg ulcer management (this does not currently include chronic oedema management)
- Two-day training for assistant practitioners (band 4) in leg ulcer management
- One-day training for band 3 healthcare assistants in lower limb issues.

The author keeps a spreadsheet of all staff, recording who has undertaken which training and when competencies have been achieved. If staff are not being released for training, this is escalated to senior management.

A training needs analysis was conducted across the locality in 2016 in response to the audit’s findings, which identified that 12.5% of the substantive registered nursing establishment hold an accredited leg ulcer management qualification. Within this group, two of the nurses were also on maternity leave for the period 2015/16 (local trust data), thus reducing available staff.

Due to the lack of qualified leg ulcer nurses during the audit period, the leg ulcer clinic had to be staffed with temporary (bank) registered nurses, not all of whom held a recognised leg ulcer management qualification.

The author also identified that the community nursing service had been through a period of extensive change in recent years, with the implementation of an electronic patient record system (SystmOne) and high levels of activity, i.e. more visits than planned due to high demand, which has negatively impacted on time allocated to patient visits, leading to non-completion of holistic assessments and low staff morale.

As said, Guest et al (2015) acknowledged that there is a financial burden to the NHS of treating chronic wounds, of which leg ulceration forms a significant proportion. This cost is made up of wound care products, healthcare professionals’ time, as well as the costs incurred in holding and delivering a clinic environment.

Furthermore, CCGs are being encouraged to seek value for money in the services they commission. Indeed, in 2014, the Department of Health (DH) published guidance for CCGs to improve access and choice for patients by utilising an Any Qualified Provider (AQP) initiative, and this included treatment for venous leg ulceration (NHS England, 2014). Thus, trusts and community service providers need to be able to demonstrate clinical efficacy and cost-effective outcomes to remain competitive within this changing healthcare climate.

**Practice point**

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*Guest et al highlighted only 16% of patients with leg or foot ulcers had an ABPI recorded*
Recent Hospital Episode Statistics (HES) data (2015/16) revealed that the author's audited CCG had a spend of £123,709 on non-elective admission costs for leg ulceration, and £257,083 for admissions due to cellulitis. This ranked the CCG 38 out of 209 national CCGs for leg ulcer admissions, and 138/209 for cellulitis, which was higher than spends from neighbouring CCGs within the same county. With these local statistics, the need to audit clinical caseloads and understand current practice in more detail is evident.

Also, with an ageing workforce, it is imperative that the skill and knowledge base for community nurses is strengthened and, in the author's clinical opinion, there is a need to plan for the future to sustain and improve the service and care delivered to patients, rather than relying on ad hoc educational funding from alternative sources, such as industry.

Without appropriate and holistic assessment and effective management, patients with lower limb oedema are susceptible to complications such as infection (Stalbow, 2004). Furthermore, a study conducted by Dupuy et al (1999) found that breaks in skin integrity, lymphoedema, leg ulceration, oedema, tinea pedis and chronic venous insufficiency (CVI) are common risk factors associated with cellulitis. The patients audited within the author's review of practice had many of these risk factors, as they were found to have breaks in the skin/active ulceration with or without oedema — if oedema is present and limbs are ‘weeping’, there is a higher risk of fungal infections, especially between the toes (Keast, 2015). The HES data indicated that the author's team works within an area of significant admission rates for cellulitis, with patients requiring inpatient care and treatment.

As well as physical risk factors and complications identified with chronic oedema, patients' mental wellbeing can be compromised. For example, restrictions to clothing and foot wear can lead to depression, (Billingham, 2007), and altered body image, restricted mobility, and skin changes associated with the later stages of lymphovenous disease can all impact negatively on patients' quality of life (Atkin, 2014).

Training staff within the scope of their responsibility aims to allow early recognition of risk factors associated with CVI, leading to timely assessment (Newton, 2011), diagnosis and starting treatment. A UK consensus document (Wounds UK, 2013) suggested that patients should receive comprehensive assessment within 10 working days of referral to establish underlying aetiology. Bianchi (2013) described how the signs and symptoms of venous and lymphatic disease are not sudden, but gradually worsen if left unchecked. Thus, once recognised, a management plan should be put in place to prevent further deterioration. As historically there had been little training in lower limb management provided by the trust, an in-house training programme was implemented in December 2016, for bands 3, 4, registered nurses as well as updates for staff who had an accredited leg ulcer qualification. This is a rolling educational programme so that all clinical staff receive training, supported by formal higher educational courses if funding allows.

Comments made by community nurses in the audit also mirrored the findings of Evans (2017), that wound care is ‘everyone’s job, but no one’s responsibility’. This highlighted the need to define individual roles and responsibilities, so that healthcare professionals are accountable for the care they are giving. As numbers of clinical specialists vary across organisations (Todd, 2013), specialists are unable to solely manage this complex patient group, and so a collaborative approach which offers support is required to provide the most appropriate treatment (Todd, 2013). Thus, the aim is for the SIT to support leg ulcer nurses (i.e. those holding an accredited leg ulcer qualification) within the locality to take ownership and to case manage this patient group and to coordinate care from referral for assessment/Doppler to post-healing management, utilising their enhanced skills and knowledge.

Treatment pathways provide a framework for healthcare professionals to work from; guiding them through the anticipated patient journey and signposting referral to specialists at appropriate intervals based on assessment, if the expected outcome is not achieved. Through the audit, the author observed that patients had not been referred onto specialist services for input or advice.

Variation in practice in terms of assessment was also noted. For example, few patients received comprehensive holistic leg ulcer assessment. This may in part have been due to the low numbers of appropriately trained staff. The audit, worryingly identified that some patients had been treated with compression therapy without assessment or a Doppler reading to measure ankle brachial pressure index (ABPI), while many of the patients appeared to have treatment decisions based on Doppler assessment alone. Todd (2015) advocated that Doppler should be performed as part of holistic assessment, and that it should be performed by experienced nurses.

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service, holistic assessments were seen by some senior staff within the organisation as a task that was ‘an added bonus, rather than a necessity’ (author’s interpretation of the situation from talking with colleagues). As previously discussed, assessment is the first opportunity to diagnose a patient and initiate appropriate treatment, and so the earlier this takes place, the better the outcome for the patient, as well as the potential for avoiding unnecessary healthcare costs. In the author’s clinical experience, undertaking comprehensive assessment and involving patients in the decision-making process, as well as providing patient education and health promotion, can improve patient adherence to treatment. Due to limited information being included on patient care plans, as a result of incomplete patient assessment and incorrect care plans being set by the community nurses. For example, due to the infancy of training within the organisation around chronic oedema management and associated compression therapy, not all staff are confident and competent with application and yet have been allocated visits to see patients requiring this type of care, which could lead to suboptimal treatment being applied and potential harm to patients. However, it is thought that subsequent review of existing care plans and refining the wording to assist the administration team, which is currently being done by the author and staff within practice development, will help to ensure that appropriately trained healthcare professionals are allocated to each patient.

Furthermore, compression systems within the local wound care formulary were reviewed last year. Three systems were on the formulary, but as a result of evidence that they were not being used appropriately, one of the systems was removed. This allowed for focused training on the indications and use of the two remaining systems to aid formulary compliance and application skills. However, during the chronic oedema audit, it was identified that old regimens were still in use without clinical rationale, again identifying the need for better support and education of new systems and trust guidelines.

The author acknowledges that lack of documentation may stem from the complex system in which patient assessments are recorded. Nurses initially complete care plans for the tasks undertaken, more detailed assessments are generally completed on a template which is linked to the care plan. This way of working is time-consuming to navigate and so is being evaluated by the author.

**CONCLUSION**

Although work had already begun in improving leg ulcer care provision within the locality, this audit highlighted new issues, e.g. lack of chronic oedema awareness and management strategies.
Table 2: Audit results from the community setting*

<table>
<thead>
<tr>
<th>Audit results</th>
<th>Community setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time between referral and initial contact/review</td>
<td>100% within one week of initial referral</td>
</tr>
<tr>
<td>Time between referral for leg ulcer treatment and initial nursing leg assessment/leg template completion</td>
<td>50% of patients received no initial leg ulcer assessment/ template completed</td>
</tr>
<tr>
<td>Who undertook the leg ulcer assessment/ completed the template</td>
<td>100% of patients assessed by leg ulcer nurse</td>
</tr>
<tr>
<td>Has the patient been identified as having chronic oedema</td>
<td>10% not assessed</td>
</tr>
<tr>
<td>Date of vascular assessment (Doppler)</td>
<td>10% historical Doppler before referral to clinic</td>
</tr>
<tr>
<td>Doppler undertaken by whom</td>
<td>62.5% leg ulcer nurse</td>
</tr>
<tr>
<td>Which care plan has been set following leg and Doppler assessments</td>
<td>80% venous ulcer care plan</td>
</tr>
<tr>
<td>Who set the care plan</td>
<td>60% leg ulcer nurse</td>
</tr>
<tr>
<td>Was appropriate treatment/ plan prescribed</td>
<td>70% yes</td>
</tr>
<tr>
<td>Length of time on caseload</td>
<td>Average length of time on caseload was 230.3 days</td>
</tr>
</tbody>
</table>

* Results were calculated from responses to audit questions, which were collected by the author and recorded on a spreadsheet.

The audit also demonstrated that chronic oedema was under-recognised and therefore the service is not meeting the needs of these patients, which has a knock-on effect for the patient, both physically and mentally, and the service is wasting resources and time by mismanaging patients’ care.

REFERENCES


Hospital Episode Statistics data (2015/2016) obtained via personal correspondence with industry representative. Date of communication 30 March, 2017


