

# The epidemiology, aetiology and pathophysiology in relation to venous leg ulcers



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For this assignment the author will be discussing the epidemiology, aetiology and pathophysiology in relation to venous leg ulcers. The author will also discuss the nursing care needs of a patient with a venous leg ulcer, talk about the assessment tools used when planning this patient's care and rationale the implemented care.

The patient being discussed will be called Jane to protect her identity for reasons of professional confidentiality, (Nursing and Midwifery Council, 2002).

Jane is a seventy five year old lady who moved to this country from Europe at the age of sixteen. She lives alone in a small council house, her husband is deceased and she has very little contact with her two children. She has a very poor diet eating mainly junk food like chocolate and crisps. Jane has a long term re-occurring ulcer on her left leg four inches above the medial aspect of her ankle.

Due to her cultural background Jane has very firm views on life in general and has been difficult to treat due to this, however her wishes and rights concerning her treatment as an autonomous person have been respected at all times by the medical and nursing staff involved in her community care, (Pearce, 2002).

### Epidemiology, Aetiology and Pathophysiology

Considering how prevalent leg ulcers are there is surprisingly little data on the distribution of this problem in the British population, this may be due to the ever changing numbers of sufferers.

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Various individual health care trusts have carried out audits. In Grampian an audit was carried out within the Moray area by the Local Health Care Co-operative (LHCC) to collect data on leg ulcer management however they found their results to be inconclusive and are planning a new audit for next year.

There are many general statistics available from various sources, these tend to be estimates. The Scottish Intercollegiate Guidelines Network (SIGN) have used population studies to determine that ten per thousand or 1% of the adult population are likely to suffer from a chronic leg ulcer at some time in their lives. They say that about 60 - 80% of these chronic leg ulcers have a venous component, (SIGN, 1998).

These figures are also given in an article by Davies (2001) who tells us that 1% of the population will suffer from a leg ulcer and that studies have shown around 70% of leg ulcers result from chronic venous insufficiency, (Davies, 2001).

Information from the Tissue Viability Society also tells us the same, (Tissue Viability Society, 2003).

Women tend to be more prominently affected by leg ulcers than men; this may be due to the fact that women tend to live longer than men but may also be due to the increased risk of DVT during pregnancy, (Dealey, 1999).

The SIGN guidelines tell us that the incidence of leg ulcers is spread evenly across the social classes, however people in the lower social classes are

more likely to have reoccurring ulcers and they may take longer to heal, (SIGN, 1998).

Veins in the body are thin walled vessels that return blood to the heart through the action of skeletal muscle pumps. The venous system has valves that prevent the retrograde or backward flow of blood. The venous system in the leg has two main components, the superficial veins and deep venous channels, communicating veins connect these two. Blood from the skin and from subcutaneous tissues flows from the superficial veins through the communicating veins and into the deep venous channels, it then returns to the heart. At regular intervals, usually at junctions where two veins meet, there are venous valves that prevent retrograde blood flow. The action of the leg muscles assist in this movement of venous blood back to the heart. The muscle pumps are located in the gastrocnemius and soleus muscles, these pumps can be compared to the pump action of the heart, (Porth, 2002).

Venous insufficiency is when the valves become damaged or deformed preventing them from closing; this is often caused by a deep vein thrombosis. When this damage has occurred and the valves cannot close the normal flow of blood cannot occur. The muscle pumps can also become ineffective due to immobility and drive blood in retrograde directions, also the blood does not empty from the deep veins. This will then lead to the failure of the communicating and superficial veins which in turn leads to the subcutaneous tissues being subjected to high pressures.

Venous insufficiency can lead to tissue congestion, oedema and impairment of tissue nutrition. Impaired tissue nutrition can cause stasis dermatitis and

lead to the development of venous ulcers. Stasis dermatitis is where the skin lacks any support from the underlying subcutaneous tissue, the skin is thin, shiny, bluish brown and irregularly pigmented. A minor injury to this vulnerable area can be very difficult to heal and is classed as a venous ulcer, usually occurring on the lower leg, (Porth, 2002).

There are also other conditions linked to the development of venous ulcers such as high blood pressure, phlebitis, varicose veins, fractures, injuries, multiple pregnancies, previous surgery, sitting or standing for long periods and obesity. There are eight types of ulcers including venous ulcers, arterial ulcers, mixed ulcers, diabetic ulcers, rheumatoid arthritic ulcers, traumatic ulcers, malignant ulcers and haemolytic ulcers. Venous ulcers are the most common occurring in around 70% of cases, (Tissue Viability Society, 2003).

#### Nursing assessment and care

Jane has recently moved to this area and had previously been under the care of a small community practice in a rural area. Her first home visit was carried out by a community nurse at the request of her General Practitioner.

An initial assessment of Jane's health was made to ascertain her general health and her history. This is necessary in order to help identify the type of ulcer present.

The SIGN guidelines suggest that initial assessment should include the patient's mobility and home help. They give an example patient assessment form (appendix 1), (SIGN, 1998).

Using this form to assess Jane, it was noted that she had poor joint mobility in both of her ankles, she suffered mildly from oedema, her skin was very dry and she had stasis dermatitis. Her leg ulcer was measured at 4cm x 3cm and was sloughy in appearance and had a mildly offensive odour, Jane felt no discomfort from her ulcer other than when her dressings were changed.

The community nurse decided to apply a skin emollient to the dry skin, dress the ulcer with an iodine based dressing, apply gauze swabs to contain exudate and apply a toe to knee bandage.

It was arranged to return in two days to redress Jane's leg. However, Jane did not want a nurse coming to her house so often and refused to be seen more than once a week. On returning the following week Jane's dressings were covered in dry exudate and had an unpleasant odour. The ulcer was unchanged and it was clear the dressings used were going to be unsuitable. The iodine dressing was a quick release which when only being changed once a week was not enough to heal the ulcer. This was explained to Jane who was very reluctant to have any more home visits. Jane's G. P was consulted and she prescribed a mild steroid cream for the edge of the ulcer, and a new iodine based paste that was a slower release. Jane agreed to twice weekly visits, at each visit a wound assessment chart was filled in to help chart the progress of the ulcer, (appendix 2).

The next step in the assessment and treatment was to carry out a Doppler ultrasound which Jane agreed to have done in her home.

The Doppler ultrasound uses sound waves; sound wave frequency was first explained by Christian Doppler who was a physicist in the nineteenth century.

The hand held probe reflects sound waves off the moving red blood cells; the reflected waves are picked up by the probe and create an audible sound. The signal given off represents the blood flow through the vessel. The Doppler ultrasound measures the ankle and brachial pressure indices (ABPI's). If used correctly the Doppler ultrasound can be an essential part of holistic assessment. To calculate the ABPI for each leg the highest ankle systolic pressure of each leg is divided by the higher of the two brachial pressures, (appendix 3), (Davies, 2001).

The SIGN guidelines say that a patient with an ABPI of  $<0.8$  should be assumed to have arterial disease and an ABPI of  $>0.8$  should be classed as venous insufficiency, (SIGN, 1998).

Unfortunately despite the Doppler assessment being fully explained to Jane and giving her plenty of reassurance she only allowed one leg to be Dopplered and refused the assessment to be completed. The results of Jane's assessment were therefore inconclusive. The result from one leg pointed towards venous insufficiency however as the test was incomplete no diagnosis could be made.

The SIGN guidelines recommend compression therapy for people with a Doppler score of  $>0.8$  however compression is contraindicated for people  $<0.8$ , (SIGN, 1998).

The new dressing routine was monitored closely and appeared to be working in the intended way. The iodine paste called Iodoflex is relatively new, its therapeutic indications were the reduction of bacteria in wounds and the reduction of pain and accelerated healing in chronic leg ulcers. It also absorbs exudate on contact and removes pus and debris from wounds, (Smith and Nephew, 2003).

The new dressings began to make an improvement towards healing, with gentle persuasion Jane agreed to have her dressings changed three times per week and her ulcer was continually assessed using the wound assessment chart.

#### Public Health and Social Policy

As part of Jane's initial assessment it was established that her dietary habits were poor due to her inability to stand for long periods to cook meals and her love of crisps and chocolate. Along with the initial assessments for Jane's health and leg ulcer the community nurse asked about Jane's community services such as home carers and meals-on-wheels.

On Jane's arrival in her new home a Single Shared Assessment was carried out by a care manager to ascertain her needs.

Susan Deacon the Minister for Health and Community Care set up the Joint Future Group (JFG), the task of this group was to identify ways of making existing policies work better. The task was principally about statutory agencies working better together. It was not to diminish the roles of or the



need for joint working with the private or voluntary sector or indeed people who use services and their carers, (Scottish Executive, 2000).

Part of the JFG mentions the Single Shared Assessment (SSA). This was bought into use in October 2001 and it is aimed to cover all community care by April 2004. The SSA is a person centred process that is needs led and relates to the levels of needs of a person. It is a shared process that supports joint working and gives outcomes that can be accepted by all professionals. It gives a holistic structured approach to assessment with less duplication and delay by producing a single summary assessment of needs and actively involves people who use services and their carers. This results in a faster track single point of entry to community services, (Scottish Executive, 2003).

As a result of the SSA it was arranged for Jane to receive a local meals-on-wheels service and a home carer to assist her with all other meals. She was not assessed as in need of the free personal care available as she was still able to manage with her personal hygiene and care.

The Scottish Office carried out a survey of non-residential community care in Scotland for 1998. It showed that in Scotland around 80000 clients received local authority provided or purchased home care services, 85% of those people were aged 65 years or over. Local authorities purchased around 11% of the hours of home care services they provided from the private or voluntary sectors. Also an estimated 24 people in every 1000 aged over 65 years were reported to receive a meals-on-wheels service, (The Scottish Office, 1999).

In 1998-1999 a general household survey was carried out by the Office for National Statistics. It found that 5% of elderly people in private households were unable to cook a meal, of these only 25% received the appropriate help from local authority home helps. Three fifths of these people used services such as local authority home helps, meals-on-wheels, a lunch club or a day centre, (Office for National Statistics, 2000).

### Health Promotion

As a result of the initial assessments carried out with Jane it was determined that her nutrition was poor, although she had the meals-on-wheels service and a home carer who assisted with other daily meals. Jane admitted that she snacked continually through the day on sweets, crisps, biscuits and chocolate, Jane admitted that this may have been due to boredom. To help alleviate this problem it was discussed with Jane what hobbies she had and what she liked doing. As she was house bound her choices were limited but she said that she enjoyed reading and knitting. As a result Jane's home carer agreed to go to the shop and purchase wool for Jane when she needed it so that she could continue with this hobby. It was also arranged for the local mobile library to visit Jane each month so she had access to reading material.

These hobbies helped Jane to cut down on the amount of snacks that she ate but the other issue was to help Jane find alternative healthier snacks that she could afford and enjoy.

In 1983 Prochaska and DiClemente identified seven stages in the process of behaviour change; they developed the behaviour change model, (Appendix <https://assignbuster.com/the-epidemiology-aetiology-and-pathophysiology-in-relation-to-venous-leg-ulcers/>)

4). The first stage is the Precontemplation stage, at this stage the person has no awareness of a need to change; health care professionals can use education and advice at this stage to bring awareness. The second stage is Contemplation; this is where people begin to think about changing. The third stage is Commitment, this is when a decision is made to change, health care professionals can help by developing an action plan and coping strategies.

The fourth stage is Action, where people begin to change their behaviour, at this stage support is essential. The fifth stage is Maintenance, where people continue with their behaviour change using the coping strategies available to them; this can be a great point of satisfaction. The sixth stage is Relapse, at this point health care professionals can help people identify the relapse and help move them back to the contemplation stage. The last stage is Exit, this is where a health-related change has been successfully made and can be maintained, (Naidoo and Wills, 2000).

Using this model as a basic guide the community nursing team discussed healthy eating with Jane, as her main meals were provided for her there was no problem with this area but healthy snacks were focused upon. Jane was provided with two leaflets for her to read. The first was Strive for Five to Stay Alive, (Grampian Primary Care NHS Trust, 2000) and the second was Eating for Health (Health Education Board for Scotland, 2000).

These provide information on the importance of adequate fruit and vegetable intake and give ideas for simple recipes. The content of these leaflets were discussed with Jane and questions she had were answered. Unfortunately Jane decided that she was quite happy to continue eating

crisps and chocolate but did agree to try and include more fruit in her diet.

Upon each visit Jane was asked about her progress and was reminded of the importance of good nutrition to help with wound healing.

The first visit to Jane by the Community nurse gave the impression that it was going to be a daunting task trying to heal her ulcer and help her with her nutrition. Jane's wishes regarding treatment were respected at all times and she was never pressured into treatment she did not want. Once she had settled into her new home and got to know the nursing team Jane became more open and talked about her life, this helped provide a good ground for a successful professional relationship that she could benefit from. Jane's leg ulcer began to make good healing progress and although her diet is not 100% healthy she now has in place the support and care she needs to help maintain a reasonable diet and lifestyle.