

Intermittent Claudication (IC) is a symptom of peripheral arterial disease where pain is experienced in the main muscle groups of the leg when exercising and walking. Where the pain is experienced is dependent on where the narrowing in the arterial system has occurred. Supra inguinal lesions will normally cause buttock/thigh pain and infra inguinal will cause calf pain. There is often a mixed picture. 2.3% of adults over the age of 16 will be affected by IC – approximately 4,420 adults in NHS Highland.

Risk factors are the same as for any form of arterial disease

- Male > female
- Age > 60
- Family history
- Smoking
- Diabetes
- Inactivity
- Increased cholesterol
- Hypertension

The most important method of reducing the pain caused by intermittent claudication is to address all relevant risk factors. The patient is then encouraged to exercise and walk past the point of pain that they would normally stop at – this develops the collateral circulation allowing an increase in blood flow to the muscles therefore reducing the pain and allowing the patient to walk further. In January 2016 we developed a Florence protocol for these patients to help them self monitor and manage their condition.



Florence

Florence (Flo) is a simple, interactive NHS telehealth service, which uses mobile phone text messages to monitor symptoms, and to provide support, advice and reminders to assist people to manage their own health condition.

Florence combines the expertise of the patient's healthcare team and the convenience and immediacy of their own mobile phone.

The Florence protocol for Intermittent Claudication patients was developed by a joint group - NHS Highland's Technology Enabled Care (TEC) team, the vascular physiotherapist and a vascular surgeon. The hope was to reduce return clinic appointments to the vascular surgeon by monitoring these patients remotely through the interactive text messaging service of Florence.

Areas Monitored by Florence

- Number of steps taken before having to stop
- Limiting factor eg pain in leg, chest pain, shortness of breath
- Diabetic control
- Adherence to taking medication (aspirin, clopidogrel)
- Smoking level
- Impact of symptoms on quality of life
- Adherence to exercise regime
- Daily step count

Patient Enrolment

Patient is assessed by the vascular physiotherapist where they undergo ABPI pulse assessment (by the vascular nurse) and treadmill test to ascertain pain onset distance (POD), maximum walking distance (MWD) and reason for stopping walking. The patient will then be given a home exercise programme and advised to always push a little into their pain before they stop and rest. Some of these patients will also attend a weekly exercise class. The patient is then offered the opportunity to enrol onto the Florence protocol. If they agree they are loaned a pedometer to allow them to check their daily step count. They are followed up in 3 months to re-assess the treadmill distances.

Where are we at the moment

Since January 2016 out of a total of 82 patients, 35 signed up for Florence and 47 declined or were deemed 'not fit'. The protocol has been further developed and enhanced as a result of feedback from patients and clinicians in order to allow the information gathered to be as accurate as possible and the system to be user friendly for the patients. Since mid August 2016 we feel we have a robust protocol and are now tracking the progress of patients enrolled since then.



What's next

Since August 2016 2 groups of patients are being compared by looking at their treadmill results in conjunction with their Florence results and the patient's own subjective view of their progress. The two groups are those patients who

- Accept and are using Florence
- Were offered, Florence and therefore deemed fit, but for some reason declined

This will provide a direct comparison between the 2 groups where the main difference is whether they used Florence or not. The first comparisons will be available from mid November onwards.

Challenges

For every innovation there are challenges. A new process cannot be implemented without extra clinician time incorporated to allow for analysis and evaluation. Unfortunately this is difficult to fit into an already crowded day. To use the system to its full effect both the vascular surgeon and vascular physiotherapist need to be able to review and analyse each patient's Florence results prior to (or instead of) seeing them in order to assess compliance and progress, and potentially make clinical decisions without always needing the patient to make a return outpatient visit.

Summary

Florence is an excellent, informative system of checking how the patient has managed their lifestyle risk factors and taken ownership of their health over a 3 month period. The vascular physiotherapist is able to evaluate their results prior to a face to face assessment to give a much more holistic approach to their review.

While 3 patients opted out of the scheme after registering the majority report an increase in their motivation to address their risk factors and found keeping a daily step count invaluable to maintaining their enthusiasm to exercise and walk. If the patients can be encouraged to maintain this level of self monitoring and risk factor control it should have a beneficial impact on future health requirements in multiple areas.