



Treating claudication in 5 words (stop smoking and keep walking) is no longer enough: an audit of risk factor management in patients prescribed exercise therapy in New Zealand

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Abstract

Aim To assess the documentation and modification of vascular risk factors in patients with intermittent claudication enrolled in an exercise programme in Christchurch, New Zealand.

Patients/Method A retrospective review of case notes of patients who presented to the vascular outpatient department with intermittent claudication and were given “Green Prescriptions” for an exercise programme was performed. Referral letters, clinic letters, vascular nurse notes, and handwritten hospital notes were searched for evidence of documentation of risk factors for atherosclerosis. Modification of these risk factors was also noted. Positive attempts at risk factor modification included starting or asking the GP to start a medication or asking the GP to assist with smoking cessation.

Results Sixty patient notes were reviewed which included 81 referral letters (66 from GPs), 118 surgeon letters/clinic notes, and 43 vascular nurse assessments. Of the 60 patients referred, risk factor documentation (positive or negative) was antiplatelet therapy (40), hypertension (48), hyperlipidaemia (39), current tobacco use (40), diabetes mellitus (37), and coronary artery disease (38). Vascular surgeons saw 58 patients and documentation was antiplatelet therapy (42), hypertension (46), hyperlipidaemia (45), current tobacco use (48), diabetes mellitus (44), and coronary artery disease (29). Attempted modification of risk factors by vascular surgeons occurred in 12 patients for antiplatelet therapy, 11 patients for lipid lowering therapy, and 10 for current smokers. Forty-three vascular nurse assessments resulted in documentation of antiplatelet therapy (0), hypertension (42), hyperlipidaemia (42), current tobacco use (43), diabetes mellitus (42), and coronary artery disease (6).

Conclusion There is suboptimal communication of vascular risk factors by referrers to specialist vascular services. The recording and modification of risk factors for atherosclerosis in our unit compares favourably with other reported series, but improvement is needed. Furthermore, the role of clinicians with an interest in risk factor management, and patients’ understanding of their vascular risk factors, needs clarification.

Intermittent claudication is a common presentation of peripheral occlusive arterial disease (POAD). The prevalence of POAD in the general population is approximately 5%, and increases to 15% in those over 70 years old.¹

Although intermittent claudication is unlikely to progress to critical lower limb ischaemia, there is an increased morbidity and mortality in this patient group resulting from the systemic atherosclerotic burden.²

The 5-year mortality rate in patients with intermittent claudication is approximately 2.5 times that of an age-matched population, and their leading causes of death are myocardial infarction and ischaemic stroke.² Best medical therapy (BMT) in patients with POAD should reduce atherothrombotic events in this patient group.

Best medical treatment of intermittent claudication may be considered to include walking exercise therapy and diligent risk factor management. Bypass surgery, angioplasty, or stenting are no longer considered first-line treatments unless symptoms are severely lifestyle limiting. Studies have shown that, after 2 years, exercise therapy is better than percutaneous balloon angioplasty in terms of improved walking distance and quality of life.³

Exercise therapy should involve >30 minutes of walking at least three times a week. This regime has been shown to increase pain-free walking time by 180%.⁴

“Green Prescriptions”, a New Zealand concept, offer patients written advice and ongoing support to become more physically active. This programme has been shown to improve quality of life and it has also been reported to be cost-effective.^{5,6}

The risk factors for POAD are established as hypertension, hyperlipidaemia, tobacco use, and diabetes mellitus. These factors also predispose to coronary artery disease and ischaemic stroke. Management of patients with atherosclerosis usually includes prescription of antiplatelet therapy as well as optimising the risk factors mentioned above.

The aim of the current study was to review recording of risk factors by GPs and the vascular surgical team in patients with intermittent claudication enrolled in an exercise programme. Treatment of modifiable risk factors was also documented.

Methods

Hospital notes from patients referred to vascular outpatients at Christchurch Hospital (Christchurch, New Zealand) with intermittent claudication were reviewed (January–April 2005). All patients had symptoms typical of intermittent claudication as well as objective evidence of peripheral occlusive arterial disease (resting ankle/brachial pressure index (ABPI) <0.8 and/or an exercise-induced fall in ABPI). All patients were given a “Green Prescription” for exercise therapy.

Hospital notes for each patient were reviewed. Referral letters, vascular outpatient letters, and vascular nurse notes were analysed for presence and treatment of the following risk factors: hypertension, diabetes mellitus, hyperlipidaemia, smoking, antiplatelet therapy, and coronary artery disease.

Risk factors, treatments, and attempted modifications were recorded as either ‘yes’, ‘no’, or ‘not mentioned’. If more than one letter existed for a patient, and a risk factor was mentioned in one letter but not in others, then a single mention of a risk factor was recorded.

If risk factor status changed (e.g. smoking cessation), then the most recent data was recorded. Positive documentation of the corresponding risk factor was accepted if the patient was recorded to be taking antihypertensives, lipid-lowering therapy, or diabetic medications.

Attempted modifications of risk factors included ordering a blood test for glucose or lipid levels, starting a medication (e.g. aspirin or a statin), asking the GP to start a medication, documenting that advice had been given, or asking the GP to give advice about smoking cessation.

Results

Sixty patient notes were reviewed. The male:female ratio was 1.5:1 and the median age was 69 years (range 41–83 years). Seventy-eight percent of patients complained of calf pain, 15% complained of thigh pain, and 15% complained of buttock pain. Fifty-eight percent had bilateral symptoms.

The median duration of symptoms was 3.4 years (range 6 weeks–15 years), and the median estimated walking distance was 206.6 m (5 m–2 km). Median ABPI (both legs) was 0.78 (0.29–1.31).

Eighty-one referral letters were reviewed, 66 from GPs, 4 from orthopaedic surgeons, 4 from cardiologists, 3 from physicians, 2 from ophthalmologists, and 2 from podiatrists. Of the 60 patients, risk factor documentation by the referrer is shown in Table 1. Of the 18 current smokers, 5 referral letters stated that the patient had been advised to stop smoking; 6 referral letters stated that blood tests for lipids and glucose had been requested.

Table 1. Risk factor documentation by referrer (n=60 patients)

Risk factor	Risk factor mentioned	Positive for risk factor	Management of risk factor noted	Blood test to assess risk factor
Antiplatelet therapy	40 (67%)	24 (60%)	24	n/a
Hypertension	48 (80%)	39 (81%)	36	n/a
Hyperlipidaemia	39 (65%)	27 (69%)	23	6
Current tobacco use	40 (67%)	18 (45%)	5	n/a
Diabetes mellitus	37 (62%)	16 (43%)	10	6
Coronary artery disease	38 (63%)	22 (58%)		n/a

Fifty-eight patients were seen by vascular surgeons and 118 letters from vascular surgeons were reviewed, as well as handwritten notes made during consultations. The mean number of letters per patient was 2.13 (0–7). Two patients were not seen by a vascular surgeon but instead they were given Green Prescriptions after assessment by a vascular nurse specialist. Risk factor documentation by vascular surgeons is shown in Table 2.

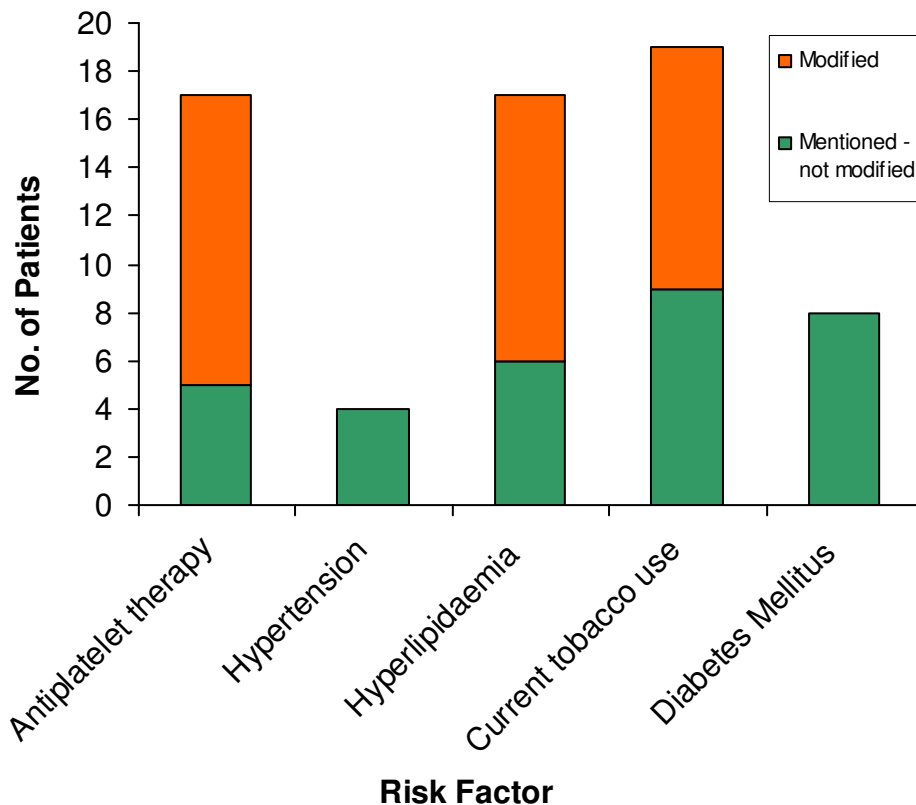
Table 2. Risk factor documentation by vascular surgeon (n=58)

Risk factor	Risk factor mentioned	Positive for risk factor	Management of risk factor noted	Management started or GP asked to start
Antiplatelet therapy	42 (72%)	25 (60%)	25	12
Hypertension	46 (79%)	36 (78%)	32	
Hyperlipidaemia	45 (78%)	34 (76%)	28	11
Current tobacco use	48 (83%)	19 (40%)	0	10
Diabetes mellitus	44 (76%)	16 (36%)	8	
Coronary artery disease	29 (50%)	18 (62%)		

Twenty-five patients were noted to be taking antiplatelet therapy when they attended the vascular clinic. Aspirin was prescribed by the surgeon for 3 patients and the GP was asked to start aspirin in 9 patients. Of 34 patients noted to have a history of hyperlipidaemia, 28 were on lipid lowering therapy.

After consultation with a vascular surgeon, the GPs of 11 patients were asked to commence the patient on lipid-lowering therapy. Of 19 current smokers, there was documentation showing that the vascular surgeon advised 9 to stop smoking; and in one case, the GP was asked to do so and provide necessary support. Documented risk factor modification by vascular surgeons, in those patients identified as not having optimal management is shown in Figure 1.

Figure 1. Risk factor modification by vascular surgeons in patients recognised as having suboptimal medical management n=58



Vascular nurses assessed 43 of the 60 patients, none of whom were asked about use of antiplatelet therapy. Coronary artery disease was only documented for 6 patients but all patients were asked about their smoking status. In addition, all but one had documentation of high blood pressure, hyperlipidaemia, and diabetes mellitus.

Discussion

A significant proportion of referral letters to the vascular surgical outpatient clinic for patients with intermittent claudication did not mention the presence or absence of modifiable risk factors for atherosclerosis.

In general, letters from vascular surgeons were more likely to mention risk factors than the referral letter, however there was occasionally no evidence that an attempt was made by the surgeon to modify a documented risk factor. Vascular nurses documented risk factors within the scope of the local protocol for a nurse-run assessment clinic. Antiplatelet therapy and coronary artery disease were not included in the nurse assessment proforma, and this oversight has now been rectified. Nurse assessments did not document attempts to modify risk factors.

This current report, based on case note review, is open to criticism because of the relatively small sample size and the retrospective design. The size of the study is similar, however, to previous reports and is probably a fair reflection of current practice.

Recording bias is possible because clinicians are more likely to record a positive finding rather than a relevant negative finding which may explain lack of documentation in some cases. This study has, however, collated detailed information on risk factor documentation and modification from a well-defined cohort of patients with proven POAD, and has resulted in a practice change—modification of the vascular nurse assessment protocol. Systems to improve risk factor testing, documentation, and modification are also being explored.

Risk factor management in patients with intermittent claudication is often reported to be poor. One recent Scottish study assessed the management of secondary risk factors in 104 patients with intermittent claudication.⁷ In that study, a questionnaire was sent to 336 GPs to compare their proposed attitudes to the documented evidence regarding risk factor management. Many GPs stated that their usual practice was to review and (if appropriate) initiate treatment of risk factors, and to encourage smoking cessation. However a review of patients referred to a vascular clinic in that region showed less than half of patients remembered such intervention, although nearly all recalled smoking cessation advice.

A large recent French multi-centre trial has also shown doctors are much better at treating the atherosclerotic risk factors in patients with coronary artery disease than in patients with ischaemic stroke or POAD.⁸

In the current study, detail in referral letters from GPs and other health professionals varied considerably. Some letters included a list of past medical history which made it easier to assess which risk factors were present; however, documentation showing that a risk factor has been investigated (and found not to be present) is also useful information for a vascular specialist.

In terms of modifying risk factors, only a minority of letters mentioned ordering blood tests to assess plasma lipid and glucose levels or whether smoking cessation advice had been given. We propose that GPs possibly want a diagnosis of intermittent claudication/atherosclerosis to be confirmed before initiating risk factor management.

Vascular surgeons are also reported to be poor at risk factor documentation in elective and emergency patients.^{9,10} For example, one published report from Birmingham, England commented that it was seen as easier to refer a patient for an intervention rather than for lifestyle evaluation, modification of risk factors, and institution of BMT.¹⁰ The current study suggests suboptimal BMT in the patients attending our vascular clinics, although our results compare favourably with other reported series.^{9,10}

The role of vascular nurses depends upon the size and scope of the centre in which they work as well as the education and support that they receive. It has been suggested that the vascular nurse should have a role in managing risk factors for patients with intermittent claudication,¹¹ and the current study confirms that documentation by nurses (filling in proformas and running assessments according to agreed protocols) can provide very acceptable results.

A specialist smoking cessation nurse has also been suggested as well as a vascular nurse trained in behavioural therapy and the use of nicotine replacement therapy.¹² However any benefit (in terms of smoking cessation and cost, compared to other treatment modalities) needs to be documented before this suggestion can be recommended.

Vascular nurse assessment in our centre involves a checklist so smoking history, hyperlipidaemia, hypertension, and diabetes mellitus are consistently documented. However, the assessment form previously did not include sections for coronary artery disease, antiplatelet therapy, or whether other risk factors had been addressed. The checklist has been updated after viewing the results of our study, and previous omissions are now included in the latest form for assessment of claudicants.

Research regarding risk factor management in peripheral vascular disease has increased in recent years. Recent evidence has expanded on the editorial comment by Housley¹³ that intermittent claudication should be treated in five words: “stop smoking and keep walking”.

Risk factor modification is now an integral part of the management of patients with atherosclerosis.

Indeed, there is published evidence that patients with POAD should:

- Be on antiplatelet therapy (specifically, low-dose aspirin);¹⁴
- Be prescribed a statin;⁶
- Receive advice, support, and treatment to help with smoking cessation;^{16,17} and
- Undergo treatment and monitoring of hypertension.^{16,18–20}

Although the evidence is less clear-cut regarding the management of diabetes mellitus, the UK Prospective Diabetes Study showed that a reduction in HbA1c (a specific type of haemoglobin) by 1% reduced the rate of myocardial infarction (MI) by 18%, stroke by 15%, and episodes of POAD by 42%.¹⁹ The peripheral vascular clinic may be useful in screening for previously undiagnosed glucose intolerance by employing validated point-of-care testing.

Risk factor modification is an essential part of the management of all patients with atherosclerosis. A multidisciplinary, team approach (combining the skills of GPs,

vascular surgeons, vascular nurses, and other physicians interested in the management of this patient group) will help optimise treatment regimens and hopefully improve the outcome in these patients.

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