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Exercise for intermittent claudication

Supervised programmes should be universally available

Intermittent claudication is a common condition leading to significant functional impairment and enhanced risk of cardiovascular morbidity and mortality. However, despite the functional impairment caused by intermittent claudication, the natural history in the affected limb is fairly benign. Only about 25% of patients show symptomatic deterioration and only 2% eventually lose the affected limb.[1] This epidemiological evidence has led most clinicians in both primary and hospital care to manage intermittent claudication conservatively, addressing cardiovascular risk factors[2] and giving advice on exercise. This may well be appropriate but merely giving advice about exercise is unlikley to be the most effective treatment.

Exercise as a treatment for intermittent claudication is not new, with improvements in walking described from as early as 1898. A recent Cochrane review of 10 randomised trials of exercise therapy estimated an overall improvement in walking distance of about 150%.[3] The exercise component in all but one of these trials was supervised.[3] Even in the one study where the exercise was not formally supervised, patients were given pedometers and exercise logbooks to monitor their daily exercise. Few randomised trials exist that directly compare supervised and unsupervised exercise training.

One randomised study in the United States showed significant improvements in walking distances and SF-36 quality of life assessment for patients in both supervised and home exercise programmes.[4] The patients in the home exercise group, however, were again not a truly unsupervised group, having attended weekly educational lectures for three months and completed daily exercise logbooks. The improvements in this group are therefore unlikely to be representative of a truly unsupervised group given advice alone. Further studies in the United States and Britain have failed to show significant functional improvement with unsupervised exercise consisting of advice alone.[5 6]

There is therefore overwhelming evidence that supervised exercise is of symptomatic benefit for intermittent claudication and little evidence that exercise advice alone is an effective treatment. In addition to symptomatic improvements exercise also has the potential to reduce cardiac risk. Patients with intermittent claudication have a 2.5-fold increase in cardiovascular morbidity and mortality compared with an age matched population.[1] Physical inactivity itself is an independent risk factor for atherosclerosis, and exercise in a healthy population can favourably improve lipid profile and glucose metabolism and reduce blood pressure.[7] Furthermore, in a population with existing atherosclerosis exercise rehabilitation is of benefit in the secondary prevention of coronary events, reducing the risk of cardiovascular death after acute myocardial infarction by about 25%.[8] There is therefore good reason to suppose that exercise training for intermittent claudication may have some beneficial effects on cardiac risk and cardiovascular events, though this remains to be established in clinical trials.

The recent TASC working group publication recommends that "a program of exercise therapy (preferably supervised) should always be considered as part of the initial treatment of patients with intermittent claudication."[1] Despite this recommendation, supervised exercise therapy is not readily available and unsupervised exercise provides the mainstay of conservative treatment. We recently conducted a survey of consultant surgeons in the United Kingdom and Ireland with an interest in vascular disease (unpublished data), which showed that supervised exercise programmes were available to only 27% of consultants. Most programmes consisted of only once weekly exercise classes (44.6%); only 3.6% comprised three or more sessions a week, with most (58.9%) lasting two to three months.

There are perhaps several reasons why this may be so. Firstly there are doubts over the long term efficacy of exercise therapy, with few trials having reported medium or long term effectiveness. The optimum duration, intensity, and cost effectiveness of supervised programmes also remain unclear, with no randomised trials directly comparing the efficacy or cost implications of different frequencies and duration of exercise. A meta-analysis of 21 randomised and observational studies has suggested that a supervised programme of walking to near maximum pain lasting at least six months is associated with greatest likelihood of success.[9] However, similar dramatic improvements in symptoms have more recently been reported with shorter supervised programmes of one to three months and with continuing symptomatic improvement beyond the supervised period.[10 11]

Given the dramatic increase in walking distance produced by an effective, supervised exercise programme, and the poor results of simply giving advice, it remains surprising that supervised programmes are not more widely available. The costs of physiotherapy supervision are low, at less than £5000 a year for two

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classes a week, and there may be further morbidity and health related cost benefits through encouraging a healthier and more active lifestyle in this high cardiovascular risk group.

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Screening for cancer in venous thromboembolic disease

The incidence is higher but intensive screening isn't warranted

The association between cancer and venous thrombosis has long been recognised.[1 2] Though venous thrombosis is a well known complication of established cancer, it might also be a marker of an otherwise occult cancer. If so, this raises the issue of whether otherwise healthy patients presenting with a venous thromboembolic event should be investigated for a possible underlying cancer on the grounds that a cancer diagnosed early may be more amenable to cure.

Whether screening for an underlying cancer is a good use of resources will depend on how common such cancers are; the cost, accuracy, and acceptability of the screening tests; and, most important, whether early detection of such cancers would improve patient outcome.

Large prospective studies of patients presenting with venous thromboembolic disease, linking hospital records with national cancer registers, find an incidence of previously undiagnosed cancer of 4-6.5%, giving standardised incidence ratios of 1.3-3.2.[3–5] Smaller retrospective and prospective studies looking particularly at patients with no obvious risk factors for their thrombosis find higher incidences of cancer, of 7.3-12% compared with 1.9-2.9% for patients with risk factors.[6–8] In these studies patients were not specifically investigated for an underlying cancer, the diagnosis being made after routine investigation on admission or after 6-12 months' follow up. Two studies in which patients underwent intensive investigations for cancer at the time of presentation found an incidence as high as 19% in patients with no risk factors.[9 10]

What investigations might prove useful as screening tests for occult cancers? When routine investigations were supplemented with abdominal and pelvic computed tomography or ultrasound scanning and carcinoembryonic antigen measurements in 424 patients with suspected venous thrombosis[9 10] cancer was diagnosed in 33 patients (7.7%). In 21 cases the diagnosis was made on the basis of history, examination, or routine tests, but in the remaining 12 cases the diagnosis was made only after scanning or a carcinoembryonic antigen measurement, a detection rate of only 3.2%. This would have been appreciably higher if only patients with no risk factors had been so investigated.

In contrast, in a study of 136 patients with no risk factors for thromboembolism cancer was diagnosed in 16 patients (12%), all of whom had at least one abnormal finding on history, a thorough examination, full blood count, or chest *x* ray examination.[7] Only 56 patients could have been classified as entirely normal, and in these patients no cancers were found at the time of presentation or on subsequent follow up. In this study a potential 59% of patients would have required further investigations for cancer, with at best a detection rate of 20%. In a second study of 326 patients, 10 of 13 cancers were diagnosed on the basis of an abnormal history, examination, full blood count, liver function tests, or urea and electrolyte measurements.[8]

Would early detection of these cancers improve patient outcome? Possibly, if the patient has a carcinoma of the breast, ovary, colon, or cervix, but there is no evidence for improved outcomes in carcinomas of the lung, brain, prostate, or pancreas, all of which have been associated with venous thrombosis. Furthermore, we cannot assume that these apparently occult cancers are indeed at an early stage of their development since they have already had a major clinical impact.

One study has recently reported on the survival of patients who were diagnosed with cancer at or around the time of presentation with a thromboembolic event.[11] When these patients were compared with age matched controls, with similar cancers but without an associated thrombosis, 44% were found to have metastases at the time of diagnosis compared with 35% of controls. One year survival was only 12% compared with 36% in the controls. If the cancer was diagnosed

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