Screening for asymptomatic peripheral vascular disease in primary care

This article summarises the evidence for a link between asymptomatic peripheral vascular disease and cardiovascular events. It also discusses the potential for screening in primary care.

Abstract

In addition to identifying those patients with coronary heart disease, the National Service Framework also requires general practitioners to identify all people with a diagnosis of occlusive arterial disease, including stroke and peripheral vascular disease, and offer appropriate interventions. Asymptomatic peripheral vascular disease is common; it is estimated almost one in five patients between the ages of 55 and 74 would be identified as at risk. Patients with asymptomatic disease have the same increased risk of cardiovascular events and death as in patients with symptomatic disease. The author discusses how to diagnose asymptomatic disease, the merits of a screening programme in primary care, and which patients general practitioners should target.

Key words: asymptomatic peripheral vascular disease, primary care, screening, National Service Framework.

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'The true prevalence of peripheral vascular disease is under-recognised in primary care'

Kamlesh Khunti

Introduction

Coronary heart disease remains a leading cause of morbidity and mortality in the UK. As part of the quality framework for cardiovascular disease, standards of service for the NHS will be determined by the National Service Framework (NSF). The NSF for Coronary Heart Disease requires general practitioners to identify all people with a diagnosis of coronary heart disease or occlusive arterial disease including stroke and peripheral vascular disease and offer appropriate interventions.[1] The commonest presentation of peripheral vascular disease in primary care is intermittent claudication. Epidemiological studies have shown that symptomatic peripheral vascular disease confers a higher risk of fatal and non-fatal cardiovascular ischaemic events. Half of the patients presenting with peripheral vascular disease have symptoms of coronary heart disease or electrocardiographic abnormalities, and 90% have abnormalities on coronary angiography.[2]

Diagnosis

Most patients with significant peripheral vascular disease are symptom-free.[3] Asymptomatic peripheral vascular disease is also associated with an increased risk of subsequent cardiovascular events with a specificity of 83% and sensitivity of 30%.[4] The prevalence of asymptomatic peripheral vascular disease is estimated to be between 12% and 18%.[4] The natural history of patients with asymptomatic peripheral vascular disease is also well documented.[5] Patients with asymptomatic peripheral vascular disease have the same increased risk of cardiovascular events and death as in patients with symptomatic disease.[5] Asymptomatic patients with peripheral vascular disease can easily be detected by the ankle brachial pressure index (< 0.9) which has a sensitivity of 97% and a specificity of 100% for angiographically-defined stenosis.[6] Furthermore, the ankle brachial pressure index has been shown to be a good predictor of subsequent cardiovascular events and has high patient acceptability.[4] Approximately 60% of patients will die of myocardial infarction and 10% will die of stroke.[7] Over 18% of subjects aged 55–74 years in a cross-sectional study in Edinburgh had an ankle brachial index of < 0.94. The specificity of cardiovascular events for a lower index (< 0.7) is approximately 95%.

Incidence

A recent multi-centre cross-sectional screening study of high-risk patients in the United States is a further reminder of the prevalence of asymptomatic peripheral vascular disease. Nearly 7,000 patients aged 70 years or older, or aged 50 to 69 years with a history of cigarette smoking or diabetes, were screened.[8] Peripheral vascular disease was detected in 29% of patients. Overall 13% had peripheral vascular disease only, 16% had peripheral disease and cardiovascular disease, 24% had cardiovascular disease only and 47% had neither peripheral vascular disease nor cardiovascular

Key messages

- Most patients with significant peripheral vascular disease are symptom-free
- Patients with asymptomatic peripheral vascular disease have the same increased risk of cardiovascular events and death as patients with symptomatic disease
- These patients can be detected by an ankle brachial pressure index of less than 0.9
- Screening programmes are best targeted at patients with a high risk of developing coronary heart disease
- Patients with asymptomatic disease should receive the same secondary prevention strategies as those with established coronary heart disease

disease.[8] Of the patients who had peripheral vascular disease, 55% were asymptomatic. The mean ankle-brachial index in patients with asymptomatic and symptomatic patients was similar (0.78) indicating similar disease severity.

Modification of risk factors has not been shown to prevent progression of peripheral vascular disease or a reduction in risk of fatal or non-fatal myocardial infarction in stroke.[9] Secondary prevention strategies include stopping smoking, management of hyperlipidaemia and hypertension, and treatment with antiplatelet medication.[10] The NSF for Coronary Heart Disease has set up clear guidelines for managing patients with peripheral vascular disease. However, there are no trials of these strategies in patients with asymptomatic disease.

Evidence for screening

Standard Four of the NSF for Coronary Heart Disease describes population cardiovascular risk screening in primary care and offers appropriate advice and treatment.[1] The true prevalence of peripheral vascular disease is under-recognised in primary care. Primary care screening and targeted preventative therapy for patients with asymptomatic peripheral vascular disease with a view to improving cardiovascular morbidity and mortality, therefore, seems logical. Almost one in five subjects would be identified at risk should a population of patients between the ages of 55 and 74 be screened.[4]

Should general practitioners screen and identify patients with asymptomatic peripheral vascular disease? The evidence for screening for asymptomatic peripheral vascular disease using a simple, inexpensive and non-invasive measurement is strong. A large proportion of patients with peripheral vascular disease are asymptomatic and are not known to general practitioners as representing a higher risk group. Asymptomatic peripheral vascular disease is an independent risk factor for incident cardiovascular disease, recurrent cardiovascular disease and mortality.[4] If a screening programme was implemented, it would be best targeted at patients with a high risk of developing coronary heart disease including patients with hypertension, diabetes mellitus, hyperlipidaemia, and patients who are smokers. There is a strong consensus that patients with asymptomatic peripheral vascular disease should receive the same secondary prevention strategies as those with established coronary heart disease.[2,8,9] The evidence for supporting the effectiveness of screening programmes[11] for reducing cardiovascular morbidity and mortality in patients with asymptomatic disease, however, is lacking. Previous surveys have shown that only a few general practitioners are providing secondary prevention to patients with established peripheral vascular disease[12] and efforts should, therefore, firstly be targeted at those with symptomatic disease.

> ***'Asymptomatic peripheral vascular disease is an independent risk factor for incident cardiovascular disease, recurrent cardiovascular disease and mortality'***

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General practitioners with a specialist interest in vascular surgery – is there a role? A surgeon's comment

Introduction

The greatest challenge facing western healthcare systems is to make advances in medicine affordable and available to as many as possible. The National Health Service is undergoing dramatic changes, which offer opportunities to deliver these advances. It is imperative, however, that within these changes, we maintain those things which have served us well to date.

Vascular clinic audit reveals that there are areas in the referral pattern that could be improved. The Department of Health has proposed that general practitioners (GPs) hold special interest clinics as a way of reducing bottleneck hold-ups. As a consultant vascular surgeon, I run one-stop vascular clinics, and I agree with the principle of specialist GPs.

I would advocate that the area of specialist interest, however, should be in cardiovascular disease rather than purely vascular disease. This guarantees a holistic approach to the patient, it delivers sufficient numbers at clinics, and careful protocols identify accurate onward referrals in diseases that share this mantle.

Why do we need to change?

There are a number of reasons why we need to change:

- The demand for out-patients seems to be limitless.
- The money supply has now shifted to the Primary Care Trusts, who will, inevitably want greater control over the referral patterns.
- The European Working Time directive has already made sure that there are less training grade doctors available in out-patients and this problem will get worse.
- The Government has targeted the bottleneck for out-patient waiting times.
- Informed consent is now an out-patient procedure. This can be complex, needs time to be explained and should be given by senior staff.
- No change is calamitous.

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The benefits of change

GPs should have the option to change to a more specialist role – with appropriate funding and remuneration. This would lead to understanding and expertise in the GP community, which would improve over the whole range of specialist interests. These interests could be rotated.

The number of inappropriate referrals should fall, with savings in transport and patients' time. A knock-on benefit to the acute trust would be the proper allocation of time and resources to the referred patient.

In addition, with a filtering mechanism, the number of 'Did not attends' could fall. There would also be closer liaisons between the GP specialists and the acute trust specialist units.

Summary

The hub and spoke mechanism works well in different areas of vascular surgery and the GP specialist scheme would be an extension of this principle. Re-empowering GPs will be a lifeline to the changing NHS.

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