Assessment of peripheral arterial disease

Introduction

The aim of the HTA programme is to ensure that high quality research information on the costs, effectiveness and broader impact of health technologies is produced in the most efficient way for those who use, manage and work in the NHS. Health technology assessment forms the largest portfolio of work in the NHS Research and Development Programme and each year about forty new studies are commissioned to help answer questions of direct importance to the NHS. The studies include primary and secondary research and cost about £10 million a year. Questions are identified and prioritised to meet the needs of the NHS and its patients.

Question

What is the best method or combination of methods for the assessment of peripheral arterial disease?

1. ***Technology:*** Duplex ultrasound, magnetic resonance angiography, CT angiography, alone or in combination.
2. ***Patient group:*** Patients with symptoms or signs of lower limb arterial disease
3. ***Setting:*** Secondary care setting, and to be relevant to district general hospitals
4. ***Design:*** Secondary research in the form of a systematic review is required to assess the comparative diagnostic performance of imaging technologies (analysis of predefined arterial segments is essential), to feed into a diagnostic algorithm.
5. ***Primary outcomes:*** Indices of diagnostic performance including sensitivity, and specificity; effects on patient management, patient acceptability, procedure-related adverse events, morbidity, mortality, and quality of life; costs and cost-effectiveness. The review would probably use decision analysis modelling in the construction of diagnostic algorithms.

Summary of research need for secondary research:

Peripheral arterial disease (PAD) is common, expensive for the health service, and disabling for patients (in terms of both mobility and quality of life). Assessment of patients presenting with symptoms or signs of lower limb arterial disease is currently undertaken using a number of different imaging techniques.

A recent HTA review of magnetic resonance imaging in peripheral vascular disease (PVD) and carotid stenosis recommended a high quality trial of all the imaging modalities used in PVD: MRA, CT, angiography, duplex ultrasound. However, in view of the number of studies published since the review, and the number of studies on the other imaging technologies which were not included in the review, the panel's view was that secondary research was required in order to construct a diagnostic algorithm bringing together all the diagnostic methods.

Making an application

If you wish to submit a proposal on this topic, complete the electronic application form and return it to the Commissioning Manager at the National Coordinating Centre for Health Technology Assessment, Mailpoint 728, Boldrewood, University of Southampton, Southampton SO16 7PX by 3rd July 2003. Applications will be reviewed by the HTA Commissioning Board at its meeting in September 2003.

Applications received after 1700 hours on the due date will not be considered.

Guidance on applications

Methods
Applicants should demonstrate knowledge of current research in the field and of systematic review methods and state how these would apply to the question posed. Valid and reliable methods should be proposed for identifying and selecting relevant material, assessing its quality and synthesising the results. Guidance on choice of appropriate methods is contained in NHS CRD Report 4 *Undertaking systematic reviews of research on effectiveness* (www.york.ac.uk/inst/crd/report4.htm). Where policy implications are considered, the emphasis should be on assessing the likely effects of a range of policy options open to decision makers rather than a judgement on any single strategy. Where epidemiological modelling or economic evaluation is required, the range of uncertainty associated with the results should be assessed. In the assessment of cost-effectiveness, further data collection may be required to estimate resource use and costs. If there is evidence that the ratio of costs and benefits may differ between readily identifiable groups, applicants are encouraged to state how they will identify these differences.

Consumer involvement in research
The HTA programme recognises the increasing active involvement of consumers in research and would like to support research projects appropriately. The HTA programme encourages applicants to consider whether the scientific quality, feasibility or practicality of their proposal can be improved by involving consumers. Research teams wishing to involve consumers should include in their application: the aims of active involvement in this project; a description of the consumers (to be) involved; a description of the methods of involvement; a budget for consumer involvement. Applications that involve consumers will not be favoured over proposals that do not but it is hoped that the involvement of consumers will improve the quality of the application.

Updating
In order to inform decisions on whether and when to update the review, researchers will be expected to give some indication of how fast the evidence base is changing in the field concerned, based on the nature and volume of ongoing work known at the time the review is completed. Applicants should note that they will not be expected to carry out updating as part of the contract to complete the review.

Communication
Communication of the results of research to decision makers in the NHS is central to the HTA Programme. Successful applicants will be required to submit a single final report for publication by the HTA programme. They are also required to communicate their work through peer-reviewed journals and may also be asked to support the NCCHTA in further efforts to ensure that results are readily available to all relevant parties in the NHS. Where findings demonstrate continuing uncertainty, these should be highlighted as areas for further research.

Timescale
There are no fixed limits on the duration of projects or funding. However, there is a pressing need within the NHS for the information and so the research would normally be expected to be completed as soon as possible – however it is for applicants to justify the duration and costs proposed.

Cochrane
Applicants are encouraged to consider producing and maintaining a Cochrane systematic review from HTA commissioned systematic reviews concerned with evaluation of interventions for prevention, treatment or rehabilitation. Discussion with the relevant Cochrane Review Group (see www.cochrane.org) may be helpful. Any additional costs associated with the initial preparation of a Cochrane review should be included in your project proposal.

In evaluating diagnostic and imaging techniques, the emphasis of the HTA programme is to assess the effect on patient management and outcomes (particularly where changes in management can be shown to have patient benefits). Improvements in diagnostic accuracy, whilst relevant, are not the primary interest of this commissioned research programme. Applicants should justify where they consider improvements in diagnostic accuracy to be relevant to these objectives. Where there is poor evidence to link diagnostic improvements to patient benefits, part of the research may be to assess the effects of such changes on patient outcome.

An assessment should also be made of changes in other resources (particularly other subsequent therapies) used as a result of changes in diagnostic methods.