Monitoring microalbuminuria and eGFR in patients with diabetes

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, provide care in or develop policy for the NHS. Topics for research are identified and prioritised to meet the needs of the NHS. Health technology assessment forms a substantial portfolio of work within the National Institute for Health Research and each year about fifty new studies are commissioned to help answer questions of direct importance to the NHS. The studies include both primary research and evidence synthesis.

Question

1) What is the optimum frequency for monitoring microalbuminuria (MAU) in patients with type 1 diabetes and patients with type 2 diabetes? and 2) What is the optimum frequency for monitoring estimated glomerular filtration rate (eGFR) in patients with type 1 diabetes and patients with type 2 diabetes?

1 **Technology**: Measurement of microalbuminuria and measurement of eGFR.
2 **Patient group:** Patients with type 1 diabetes and patients with type 2 diabetes.
3 **Setting:** Primary care and outpatient care.
4 **Control or comparator:** Patient or population levels by age group.
5 **Design:** An individual patient analysis of existing data sets to explore the progression of microalbuminuria and of eGFR in patients with diabetes. The researchers should build a model to explore the relationship between patient characteristics, the progression of microalbuminuria and eGFR and, assuming optimal intervention, identify the cost effectiveness of different frequencies of monitoring at different thresholds in different groups of patients.
6 **Outcomes:** Cost effectiveness of different frequencies of monitoring; the identification of thresholds for initiation of active monitoring in different patient groups of microalbuminuria and eGFR. Potential changes in morbidity and mortality from renal failure and cardio vascular disease.

Background to commissioning brief:

The GP contract has a 'quality and outcomes framework' (QOF) for primary care. This requires diabetic patients to be tested for microalbuminuria (MAU) annually. Any abnormal proteinuria is a significant risk factor for both renal disease and for cardiovascular morbidity and mortality.

The plasma concentrations of creatinine and urea can be used to determine renal function but will not be raised above the normal range until 60% of total kidney function is lost. Hence, the more accurate glomerular filtration rate or an approximation of it (eGFR) may be measured. The eGFR is frequently reported by laboratories to detect evidence of early renal disease (in accordance with the Renal NSF).

Another prognostic marker for kidney disease is MAU; the measurement of small amounts of albumin in the urine that cannot be detected by urine dipstick methods. MAU refers to the appearance of small but abnormal amounts of albumin (protein which is present in the blood) in the urine. Persistent albumin/creatinine levels >2.5mg/mmol (male) or >3.5mg/mmol (female) on 2-3 occasions are consistent with microalbuminuria. Over 300 mg is called albuminuria or macroalbuminuria.

The prevalence of MAU in patients with type 1 diabetes at 30 years disease duration is approximately 40%. The prevalence of MAU in patients with type 2 diabetes at 10 years disease duration is approximately 20-25%. MAU is predictive of adverse events in patients with type 1 and type 2 diabetes.

People of certain ethnic backgrounds such as south Asians have higher prevalence of microalbuminuria, develop it at a younger age and have an accelerated decline in renal function compared to European populations.

Therefore research to determine the most appropriate threshold for the initiation of monitoring of microalbuminuria and eGFR is required, and the optimum frequency of testing in patients with diabetes is needed.

Making an application

If you wish to submit a proposal on this topic, complete the electronic application form and return it, along with a detailed project description, to the HTA Commissioning Manager at the National Coordinating Centre for Health Technology Assessment, Mailpoint 728, Boldrewood, University of Southampton, Southampton SO16 7PX by *{date}.*

Your full proposal will be assessed by designated Commissioning Board members, alongside other applications submitted in the same topic area. They will decide on a maximum of three proposals to be taken forward for peer review by external referees, and subsequent consideration by the HTA Commissioning Board at its meeting in **November, 2008.**

Applications received after 1300 hours on the due date will not be considered.

Please see GUIDANCE ON APPLICATIONS overleaf.

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.

Cochrane

Applicants wishing to produce and maintain a Cochrane systematic review from this HTA commissioned systematic review should make the case in their proposal. This will need to include the approval of the relevant Cochrane Review Group (www.cochrane.org). Any additional costs associated with the initial preparation of a Cochrane review should be included in your project proposal. Maintenance costs cannot be met.

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.

Public involvement in research

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

Updating

It is the policy of the NCCHTA that all search strategies undertaken as part of evidence synthesis/secondary research projects must not be more than 12 months out of date when the draft final report is submitted. We expect that most projects will manage to bring their searches up to date prior to analysis and writing up. As research funders we are aware that exceptional circumstances can apply that would not allow this to be case but this must be the exception rather than the rule and will be assessed on a case by case basis. The expectation is that projects funded by the HTA programme will deliver information that is both relevant and timely.

In addition, 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 any future 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.