Switching from non-glycopeptide to glycopeptide antibiotic prophylaxis for surgery

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. Questions are identified and prioritised to meet the needs of the NHS and its patients. 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.

Question

What is the impact of switching from non-glycopeptide to glycopeptide antibiotic prophylaxis in a surgical environment in terms of important clinical outcomes?

1. **Technology:** Glycopeptide antibiotics vancomycin or teicoplanin
2. **Patient group:** Patients undergoing surgical procedures with a high risk of post-operative infection
3. **Setting:** Secondary care
4. **Control or comparator treatment:** Non-glycopeptide antibiotics e.g. cefuroxime
5. **Design:** A modelling approach is envisaged that will incorporate patient, environmental and procedural variables which interact and contribute to the likelihood of infection with methicillin-resistant *Staphylococcus aureus* (MRSA). It is expected that applicants will familiarise themselves with and review existing models that have been used to address similar questions before developing their own model.
6. **Outcomes:** MRSA infection in patients; transmission of glycopeptide resistant organisms; selection of new glycopeptide resistant organisms; cost and cost effectiveness.

Summary of research need:

The risk of contamination during surgery developing into a surgical site infection can be reduced by the administration of prophylactic antibiotics. For antibiotic prophylaxis to be successful, the chosen antibiotic must be effective against the types of bacteria that are most likely to contaminate the wound. The choice of prophylactic antibiotic must take into account local information about the types of bacteria causing surgical site infections, and in particular the local prevalence of methicillin resistant Staphylococcus aureus (MRSA). At present it is not known whether there is a threshold value for prevalence of methicillin resistance that suggests routine prophylaxis with glycopeptide antibiotics. Therefore research is required to develop a model that will determine the likelihood of infection with MRSA from inputs that will include patient, environmental and procedural variables. The model may identify an MRSA prevalence rate or series of rates, dependent on other risk variables, which will inform practitioners when particular circumstances suggest switching from a regimen of non-glycopeptide to glycopeptide antibiotics. The model should take into account that increased use of glycopeptide antibiotics may lead to increasing transmission of glycopeptide resistant organisms and/or the selection of new glycopeptide resistant organisms.

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 Commissioning Manager at the National

Coordinating Centre for Health Technology Assessment, Mailpoint 728, Boldrewood, University of Southampton, Southampton SO16 7PX by on **Thursday 14 July 2005**.

Your full proposal will be assessed by designated Commissioning Board members and clinical experts and a commissioning decision will be made by the Chair of the HTA Commissioning Board and the HTA Programme Director by Monday 15 August 2005.

Applications received after 1300 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.

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 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

Your final report should be submitted to NCCHTA by **5pm on Friday 31 March 2006**.