A simple prophylaxis regimen for MRSA: its impact on the incidence of infection in patients undergoing liver resection


Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

CRD summary
This study examined the clinical and economic impact of a policy of pre-operative prophylaxis against methicillin-resistant Staphylococcus aureus (MRSA) in patients undergoing liver resection. The authors concluded that the MRSA policy led to a reduction in morbidity and National Health Service costs. On the whole, there were a few limitations to the study validity, so the authors’ conclusions should be considered with a degree of caution.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
This study examined the clinical and economic impact of a policy of pre-operative prophylaxis against methicillin-resistant Staphylococcus aureus (MRSA) in patients undergoing liver resection.

Interventions
The MRSA policy consisted of nasal mupirocin (three times a day) and triclosan (2%) wash (twice a day) for five days before hepatectomy. This new policy was compared with the usual care (no prophylaxis) before the introduction of the prophylactic strategy.

Location/setting
UK/tertiary care centre.

Methods
Analytical approach:
This economic evaluation was based on a single study with a short-term horizon, which covered the length of hospitalisation. The authors stated that the perspective of the National Health Service (NHS) was adopted.

Effectiveness data:
The clinical data came from a prospective comparative study with historical control data. The study took place between 2000 and 2005, with the prophylaxis policy being implemented in September 2003. The sample included 585 patients, with 348 (median age: 63 years, 57% men) in the pre-policy period, and 237 (median age: 65 years, 75% men) in the MRSA policy period. The two patient groups were similar in their demographic and clinical characteristics at baseline. The length of follow-up was not explicitly reported, but covered the length of hospital stay. The primary clinical endpoint was the prevalence of MRSA-related infection before and after the implementation of the new policy.

Monetary benefit and utility valuations:
Not relevant.

Measure of benefit:
No summary benefit measure was used, the key clinical endpoints being the prevalence of MRSA-related infection and the rate of complications.

Cost data:
The economic analysis included the costs of prophylaxis, bed stay, use of antibiotics and dressings, as well as district
nurse care. The unit costs were reported for most items and were derived from the authors’ institution. The data on resource consumption were derived from the sample of patients enrolled in the clinical study. All costs were in UK pounds sterling (£) and the price year was not explicitly reported.

Analysis of uncertainty:
Not performed.

Results
The rate of MRSA-related infections was 8.3% (29 of 348) in the pre-policy period and 3.8% (9 of 237) in the MRSA policy period (p=0.029, hazard ratio: 0.56). A total of 11 projected cases of infection were prevented in the MRSA policy period.

The incidence of complications was 30% in the pre-policy period and 22% in the MRSA policy period (p=0.071).

The mean length of hospital stay was 21.5 days for patients with MRSA-related infection and 11.5 days for those without infections.

Given that the basic financial cost incurred from each MRSA case was £2,743 (due to increased costs of hospital stay, minus the cost of prophylaxis), the overall cost-saving associated with the MRSA policy was £28,893, resulting in a total saving per patient undergoing prophylaxis of £122.

Authors’ conclusions
The authors concluded that the MRSA policy led to a reduction in morbidity and NHS costs.

CRD commentary
Interventions:
The selection of the comparators was appropriate as the patterns of care before and after the implementation of the new policy were compared.

Effectiveness/benefits:
The clinical evidence came from the prospective analysis of a hospital database, which included patients from two different periods. The pre-intervention era was compared against the post-intervention era. The risk of such a comparison is the potential impact of time-related biases such as changes in hospital treatment patterns, such as personnel and other protocols, or epidemiological patterns. The authors did not appear to have taken this issue into consideration. In effect, even if the two groups of patients were comparable at baseline with respect to their clinical and demographic characteristics, factors other than the study intervention might have affected their outcomes. However, a large sample of patients was used which represents a strength of the analysis.

Costs:
The categories of costs appear to have been consistent with the economic viewpoint. Some details on the unit costs and quantities of resources used were reported. The costs reflected prices charged at the authors’ institutions and it is not clear whether they were relevant for other medical centres. As the price year was not reported, it will be difficult to carry out reflation exercises for other time periods.

Analysis and results:
The costs and benefits were not synthesised. The findings were clearly reported, but the issue of uncertainty was not addressed. The authors compared the results of their analysis with those of other publications.

Concluding remarks:
On the whole, there were a few limitations to the study validity, so the authors’ conclusions should be considered with a degree of caution.

Funding
Not stated.

Bibliographic details

PubMedID
19126333

DOI
10.1308/003588409X359060

Other publications of related interest


Indexing Status
Subject indexing assigned by NLM

MeSH
Aged; Antibiotic Prophylaxis /economics; Costs and Cost Analysis; Female; Hepatectomy; Humans; Length of Stay; Liver Diseases /economics /surgery; Male; Methicillin-Resistant Staphylococcus aureus; Middle Aged; Staphylococcal Infections /economics /prevention & control

AccessionNumber
22009100511

Date bibliographic record published
07/04/2009

Date abstract record published
17/06/2009