Cost assessment of josamycin dispersible tablets used in short term treatment of acute bronchitis

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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.

Health technology
The short-term treatment of acute bronchitis.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised patients with acute bronchitis.

Setting
The setting was the community (general practitioners, GP). The economic study was carried out in France.

Dates to which data relate
The effectiveness and resource use data related to the 1994 to 1996. All costs were calculated in 1995 prices.

Source of effectiveness data
The effectiveness data were gathered from a single study.

Link between effectiveness and cost data
The costing was undertaken on the same sample of patients as the effectiveness data. Both were undertaken prospectively.

Study sample
A total of 349 patients were randomised to receive either josamycin (n=174) or azithromycin (n=175) treatment. The two groups were comparable according to their age (mean: 47.6 versus 50.3) and gender ratio (male-to-female: 1.1 versus 0.8). It was not stated whether power calculations were used to determine the sample size.

Study design
The study was a randomised multi-centre trial. Eighty GPs from the Nantes and Grenoble areas participated in the study. The follow-up was for 31 days. There was no loss to follow-up.
Analysis of effectiveness
The basis for the analysis of the clinical study (intention to treat or treatment completers only) was not specifically stated, but is likely to have been to complete at least 31 days of follow-up. The primary health outcome was the rate of response to therapy. The comparability of the demographic and baseline characteristics (gender ratio and age) among the treatment groups was assessed. However, differences in socioeconomic status were not reported. The numbers of days off due to illness were shown to be comparable. Absenteeism was 21.3% in the josamycin group and 18.9% in the azithromycin group, corresponding to 42.5% (josamycin) and 38.8% (azithromycin) of the working population, respectively, (p=0.2).

Effectiveness results
The response rates were comparable, 90.2% versus 91.4%.

Clinical conclusions
No significant differences were observed between the josamycin and azithromycin therapeutic regimens in terms of clinical results.

Measure of benefits used in the economic analysis
As the effectiveness results showed no difference in clinical benefit between the treatment alternatives, the economic analysis was based on difference in the costs only (cost-minimisation).

Direct costs
The costs were measured from the health insurance perspective. They were not discounted, which was appropriately since the follow-up period was less than one year. The costs and the quantities were not reported separately. The average direct costs were calculated. The costs included in the analysis were for the antibiotic regimen, complementary prescriptions and examinations, and additional consultations. The cost of the drugs was obtained from a pharmacy computer system (software Presto). If the antibiotic prescriptions were randomised, complementary prescriptions reflected community practices. The price date was 1995.

Statistical analysis of costs
Descriptive statistics for cost data were reported. The mean costs were compared using standard t-tests.

Indirect Costs
The indirect costs were for lost productivity. The costs and the quantities were reported separately. The costs were not discounted. The average indirect costs were calculated. The cost data were derived from social security tariffs. The price date was 1995.

Currency
French francs (Ffr).

Sensitivity analysis
No sensitivity analyses were carried out.

Estimated benefits used in the economic analysis
See the 'Effectiveness Results' section.
Cost results
The average direct cost for a 5-day treatment was Ffr 221 in the josamycin group and Ffr 258 in the azithromycin group. The difference was significant, (p<0.005).

The observed costs of complementary prescriptions were not significantly different from one antibiotic regimen to the other. The main difference related to the initial antibiotic treatment cost (Ffr 87.2 versus Ffr 120.30).

The average indirect cost for a 5-day treatment was Ffr 106 in the josamycin group and Ffr 75 in the azithromycin group. The difference was not significant, (p=0.3).

The difference in the total average cost between the two groups (Ffr 327 versus Ffr 333) was not significant, (p=0.1).

Synthesis of costs and benefits
No synthesis was performed due to the similarity in the effectiveness results.

Authors' conclusions
The 5-day josamycin regimen was cheaper (more cost-effective) than the 5-day azithromycin regimen. This rationalisation of antibiotic prescription may contribute to restricting the development of bacteriological resistance, improving treatment adherence and reducing antibiotic toxicity.

CRD COMMENTARY - Selection of comparators
The choice of the comparator, conventional treatment, was explicitly justified. You should decide whether these prescribing patterns are similar in your own setting.

Validity of estimate of measure of effectiveness
Given the randomised design of the study, the validity of the effectiveness results seems to be assured, with limitations determined by the short follow-up period of the study (31 days). It is likely that the effectiveness data were only partially reported (for example, neither the inclusion criteria nor loss to follow-up were stated) since the effectiveness results have already been published (1996). The authors, appropriately, conducted a cost-minimisation analysis, as the effectiveness analysis showed the two treatment groups were similar.

Validity of estimate of measure of benefit
The analysis of benefits was based on the therapeutic equivalence of the treatment alternatives. Therefore, the economic analysis only included costs.

Validity of estimate of costs
The analysis of the costs was well conducted. For the cost perspectives adopted, all the relevant categories of cost were included in the analysis. In addition, most sources of the unit costs were reported, as were the dates to which the prices related and the price year. A statistical analysis of the cost results was also reported. The authors referred to one limitation of the study. This was the absence of comorbidities or a sociodemographic description that could, in part, explain the lost productivity.

Future cost-savings that may result from not using antibiotics for the treatment of acute bronchitis could have been included in the analysis.

It should be noted that different values for the average indirect costs were given in the text (Ffr 596 and Ffr 508) and table IV (Ffr 106 and Ffr 75).
Other issues
The authors made appropriate comparisons with other studies and discussed the limitations that would influence their results. The cost results were unlikely to be generalisable to other countries.

Implications of the study
The results suggest that the effectiveness of the two antibiotic treatments is equal. On the basis of a cost-minimisation approach, a short-term treatment with a 5-day josamycin regimen is the preferred alternative in the procedure studied. The dominance of this regimen implies that decision-makers may expect to achieve budgetary savings if it were adopted.

Source of funding
None stated.

Bibliographic details

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