Cost-effectiveness analysis of treatment of E histolytica/E dispar cyst carriers

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
Metronidazole for Entamoeba histolytica and Entamoeba dispar cyst carriers.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Asymptomatic carriers of E histolytica

Setting
The practice setting was primary care. The economic analysis was carried out in an academic setting in Mexico.

Dates to which data relate
It was unclear when the effectiveness and resource data were collected. No price year was given.

Source of effectiveness data
The effectiveness estimates were derived from a single study.

Link between effectiveness and cost data
It was unclear whether costing figures were derived from the effectiveness study sample.

Study sample
263 cyst carriers were identified from a sample population of 12,000 (2.1%). From these, two groups each totalling 100, were assigned to either a treatment (receiving metronidazole) or control (receiving placebo) group. Power calculations (no details provided) determined a minimum sample size of 79. A loss rate of 20% was estimated by the authors and this determined the two sample size totals, explaining the loss of 63 cyst carriers from the final sample population.

Study design
The study was a triple-blind randomised controlled trial. Randomisation was performed in blocks of 10 patients. Loss to follow-up (one year) was measured in person-months and totalled 236/4,000 (12%). The treatment group was followed during 810 person-months (85% of the expected figure) whilst the control group was followed for 859 person-months.
Analysis of effectiveness
It is not clear whether the analysis of the clinical study was based on intention to treat or on treatment completers only. The primary outcomes were disease prevalence, frequency of loss and acquisition of carrier state during one year follow-up, and morbidity due to E.histolytica/E.dispar infection.

Effectiveness results
Disease prevalence was 2.1%. The adjusted frequency of loss and acquisition of carrier state during one year follow-up was 24.0% (+/- 6.0%) in the treatment group and 27.0% (+/- 6.0%) in the control group.

At the end of the first month 45% of the treated group and 40% of the non-treated group permanently lost their carrier state. The treated group was positive in 190 person-months (24.0% of the follow-up) compared with 234 person-months (27.0%) in the control group. Parasite frequency decreased from 100% at the beginning to 31% and 41% in each group after the first month. Six months later these frequencies had changed to 26% and 31%. No cases of amebic disease were found.

Measure of benefits used in the economic analysis
The costs per month free of carrier state were the measure of benefit used.

Direct costs
Direct costs comprised medication costs. No prices were stated.

Currency
Not stated.

Sensitivity analysis
No sensitivity analysis was performed.

Estimated benefits used in the economic analysis
Costs per month free of carrier state were not published in the article.

Cost results
Total intervention costs were not provided.

Synthesis of costs and benefits
Not performed.

Authors' conclusions
Because: (a) 80% of cases lost the carrier state during the follow-up, (b) no cases of disease in the placebo group were found, (c) there was an early acquisition of carrier state in the treatment group, (d) the difference in months free from carrier state between groups was small, and (e) because of the cost per month free of carrier state among treated persons, it was suggested that the treatment of asymptomatic carriers of E.histolytica/E.dispar infection is not cost-effective. Resources should be redistributed to the treatment of amebic disease (mortality).
CRD COMMENTARY - Selection of comparators
The selection of comparators in the analysis was justified.

Validity of estimate of measure of benefit
The estimate of benefit used in the economic analysis is likely to be internally valid.

Validity of estimate of costs
Inadequate details of the costings (sources and totals) were provided.

Other issues
The results provided in this study were neither detailed nor tested for validity. No justification was provided for the randomization of 10 subjects at a time. The generalisability of the results was not discussed (e.g. whether or not a disease prevalence rate of 2.1% was typical, etc.). In addition it was not clear whether the analysis of the clinical study was based on intention to treat or on treatment completers only. The study was rather brief in its reporting.

Implications of the study
In order to justify the recommendation that the treatment of asymptomatic carriers of E.histolytica/ E.dispar infection is not cost-effective and that resources should be redistributed elsewhere more stringent and detailed analysis should be performed in this area in order to facilitate evidence-based decision making.

Source of funding
Supported by the following grants: CONACYT (Mexico) M9109 and F215-M9206, ADDR-094 and CAE-9410.

Bibliographic details

PubMedID
9033106

Indexing Status
Subject indexing assigned by NLM

MeSH
Animals; Carrier State /drug therapy /economics /epidemiology /parasitology; Cost-Benefit Analysis; Entamoeba /growth & development /isolation & purification; Entamoeba histolytica /growth & development /isolation & purification; Entamoebiasis /drug therapy /economics /epidemiology /parasitology; Humans; Mexico /epidemiology; Prevalence

AccessionNumber
21997006783

Date bibliographic record published
28/02/1999

Date abstract record published
28/02/1999