Myocardial salvage with early anistreplase treatment
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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
Early thrombolytic treatment (anistreplase) delivered by general practitioners to patients with acute myocardial infarction.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Patients with clinical suspicion of acute myocardial infarction (AMI), and symptoms of AMI lasting from 20 minutes up to 4 hours.

Setting
Community. The economic study was carried out in Grampian, UK.

Dates to which data relate
The years during which the data were collected for the effectiveness analysis, the resources and the prices used were not stated.

Source of effectiveness data
The evidence for final outcomes was derived from a single study.

Link between effectiveness and cost data
The costing does not appear to have been undertaken on the same patient sample as that used in the effectiveness study.

Study sample
311 patients were included in the trial with 163 in the home group and 148 in the hospital group. There is no evidence that power calculations determined the sample size.

Study design
This study was a double-blind, randomised, placebo-controlled trial. Patients were randomly allocated to a home group or a hospital group and each group received thrombolytic treatment with anistreplase at home or in hospital later. There were approximately 100 general practitioners in the 29 general practice partnerships that participated. The follow-up
period was 5 years.

Analysis of effectiveness
It was not stated whether the analysis of the study was based on 'intention to treat' or 'treatment completers only'. The primary outcomes used in the analysis were Q-wave infarcts, left ventricular function and mortality.

Effectiveness results
The home treatment group had fewer Q-wave infarcts and better left ventricular function. At one month the mortality difference between the two groups was 5% and was not statistically significant. However, by three months it had become significant and by one year it was 11% and significant; by 30 months, it was 15%. The mortality difference at 30 days was not statistically significant. The small sample size did not allow the authors to analyse mortality outcomes.

Clinical conclusions
The first conclusions were that the GPs provided a very good package of prehospital coronary care. Multivariate analysis showed that age, treatment delay, and time of presentation were significant risk factors.

Measure of benefits used in the economic analysis
Life-years gained were used as the outcome measure in the economic analysis.

Direct costs
The study examined the cost of anistreplase as this was the main cost difference between prehospital thrombolysis and in-hospital thrombolysis, where streptokinase is the standard thrombolytic in British hospitals. The extra general practitioner time was also considered. The estimation of the quantities and costs was based on published information from another study. Price years were not specified.

Currency
UK pounds sterling (£).

Estimated benefits used in the economic analysis
The average difference in survival within this 5-year follow-up period for patients in the home group was 208 days per patient.

Cost results
The acquisition cost of anistreplase plus the general practitioners' one quarter of an hour of extra time amounted to approximately 425 per patient.

Synthesis of costs and benefits
The marginal cost per life-year with prehospital anistreplase versus streptokinase was approximately 746 per life-year without quality adjustment.

Authors' conclusions
Thrombolytic treatment should be considered to be as urgent as the treatment of cardiac arrest in terms of its potential for saving life, and this concept will be helpful in delivering thrombolytic treatment. Prehospital therapy with anistreplase was highly cost-effective when compared with streptokinase given in hospital, and the marginal cost-effectiveness ratio was much lower than that for tissue plasminogen activator versus streptokinase derived from another
CRD COMMENTARY - Selection of comparators
The reason for the choice of comparator is clear

Validity of estimate of measure of benefit
As the author noted the design of the trial was not ideal because of practical and ethical constraints. The overlap in timing between the early and late groups substantially reduced the ability of this trial to reveal a time-related benefit.

Validity of estimate of costs
The cost estimates appear to have been based on information published from another study.

Other issues
Given the uncertainties in the data the author's conclusions were justified but it would have been helpful to have included more detail of the resource and cost estimates on which the cost-effectiveness ratios were based. Appropriate comparisons were made with other studies.

Source of funding
None stated.

Bibliographic details

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