Cost-effectiveness of acyclovir for varicella infections in immunocompetent patients: a British perspective
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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

Type of intervention
Secondary prevention

Economic study type
Cost-effectiveness analysis.

Study population
The general population of Tayside in Scotland.

Setting
A combination of primary and community care. The economic study was carried out in Tayside, Scotland.

Dates to which data relate
Effectiveness data were obtained from studies published between 1988-1992. Data on the use of resources mainly related to the period 1989-1992. Price date was not stated.

Source of effectiveness data
Published literature.

Modelling
The authors have developed a model, although its exact nature was not stated.

Outcomes assessed in the review
Short term pain relief, reduction of complications, and the prevention of transmission of infections.

Study designs and other criteria for inclusion in the review
Clinical trials and a published review of clinical trials. Other inclusion criteria were not stated.

Sources searched to identify primary studies
Not stated.
Criteria used to ensure the validity of primary studies
Not stated.

Methods used to judge relevance and validity, and for extracting data
Not stated.

Number of primary studies included
Four placebo-controlled trials and four other unspecified studies evaluating short term pain relief and reduction of complications or prevention of transmission; one published review of clinical trials assessing the efficacy of acyclovir in shingles.

Methods of combining primary studies
The results of each trial were pooled. The exact method was not stated.

Investigation of differences between primary studies
Differences were not investigated. The best and worst results were reported for shingles. No explanation for the differences was given.

Results of the review
Acyclovir shortens the symptoms of chickenpox by an average of one day in adults and children. About 20% of children had symptoms shortened by up to three days. There was no evidence that acyclovir had any effect on reduction of complications or prevention of transmission of chickenpox. In patients with shingles, acyclovir reduced the mean duration of pain by 10 days. It reduced the incidence of postherpetic neuralgia by 8% (2% and 32% in the worst and best single trial results).

Measure of benefits used in the economic analysis
Shortening of symptoms measured in days.

Direct costs
Costs and quantities were analysed separately. Information on the formulation used and the dosage of acyclovir was collected. This was provided by the Medicines Monitoring Unit in Dundee. The cost of acyclovir was based on information given by the British National Formulary, 1992. The costs of consultation with a GP was given, which included administration and time costs. This cost information was obtained from the literature (1991). The cost boundary adopted was the health service.

Currency
US dollars ($).

Sensitivity analysis
A sensitivity analysis was carried out. The approximate rate of hospital admissions due to chickenpox was varied. The method used was not stated.

Estimated benefits used in the economic analysis
On average, acyclovir reduced the symptoms of chickenpox in adults and children by one day, and reduced the
symptoms of shingles by 10 days. Confidence intervals were not stated. Side-effects were not considered.

Cost results
The cost of treating adults with chickenpox was $170, and children with chickenpox was $70. The cost of treating shingles was $170.

Synthesis of costs and benefits
Cost-effectiveness was defined by dividing the total costs per patient by the days of symptoms avoided. The ratios were as follows:

adults with chickenpox with acyclovir = $170

children with chickenpox = $70

and patients with shingles = $17.

An incremental analysis was not performed. If the effectiveness of reducing hospital admissions was decreased by 50%, the cost per admission avoided would be $35,262.

Authors' conclusions
The treatment of chickenpox with acyclovir was not found to be a cost-effective use of resources, even if it would reduce the number of hospital admissions. Acyclovir treatment of patients with shingles was found to be much more cost-effective.

CRD Commentary
(1) The authors could have provided more information on the study design, the search strategy and the selection criteria for the clinical trials included in the review.

(2) The authors used a pooled estimate, from separate trials, of the review. There was no evidence that the groups of patients were comparable.

(3) More information on the model which the authors developed would have been useful.

(4) More information on costing would have been useful. It is not clear how the authors derived the cost of treating a patient per day. Furthermore, the costs of side-effects were not considered. The estimates of the cost of GP consultations are varied and the authors give no justification for their choice of estimate. No information is given on the dates to which the costing data referred.

Bibliographic details

Indexing Status
Subject indexing assigned by CRD

MeSH
Acyclovir; Adult; Chickenpox / complications / drug therapy / epidemiology; Child; Herpes zoster / complications / drug therapy; Herpes zoster oticus; Hospitalization; Scotland

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