Combined antiviral treatment in HIV infection: is it value for money?

Davies D, Carne C, Camilleri-Ferrante C

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
Antiviral treatment in HIV infection.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Patients with HIV infection.

Setting
Hospital. The study was carried out at the Addenbrooke's NHS Trust, Cambridge, UK.

Dates to which data relate
Effectiveness data were collected from a study published in 1998. Resource use and cost data were collected from the authors' institution. The price year was 1997.

Source of effectiveness data
Effectiveness data were derived from a literature review.

Modelling
A Markov model was used to determine the cost-effectiveness of combinations of antiretroviral drugs.

Outcomes assessed in the review
The review assessed the transition probabilities between disease states.

Study designs and other criteria for inclusion in the review
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
Summary statistics from individual studies.

Number of primary studies included
At least one primary study was included.

Methods of combining primary studies
Narrative method.

Investigation of differences between primary studies
Not stated.

Results of the review
The transition probability of A (CD4+ > 500) to B (500 < CD4+ > 200) was 0.202 per person year. The transition probability of A to C (CD4+ < 200) was 0.067 per person year. The transition probability of A to D (death) was 0.010 per person year. The transition probability of B to C was 0.407. The transition probability of B to D was 0.012. The transition probability of C to D was 0.250.

Measure of benefits used in the economic analysis
The number of life years saved was used as the measure of benefits.

Direct costs
Direct costs were discounted at an annual rate of 6%. Quantities and costs were reported separately. Direct costs reflected the costs of all components of care including drug costs. The quantity/cost boundary adopted was that of the hospital. The estimation of quantities and costs was based on actual data. Cost estimates were derived from the authors’ institution. Drug costs were calculated using the costs of drugs purchased by the hospital pharmacy. The price year was 1997.

Statistical analysis of costs
Not reported.

Indirect Costs
Not included.

Currency
UK pounds sterling (€).

Sensitivity analysis
A sensitivity analysis was conducted on the discount rate (amongst other variables).
Estimated benefits used in the economic analysis
Not reported.

Cost results
Direct health care costs for a CD4+ count higher than 500 amounted to 1,320 at Addenbrooke's NHS Trust and to 1,701 at Chelsea and Westminster Hospital. Direct health care costs for a CD4+ count higher than 200 and below 500 amounted to 1,629 at Addenbrooke's and to 1,774 at Chelsea and Westminster Hospital. Direct health care costs for a CD4+ count below 200 amounted to 7,588 at Addenbrooke's and to 6,984 at Chelsea and Westminster Hospital.

Synthesis of costs and benefits
The cost per life year saved varied from 5,510 to 12,130 when using combination therapies. The cost per life year saved was 7,303 when using zidovudine and lamivudine combination therapy. If the discount rate was varied, the cost per life year saved on combination therapy ranged from 5,360 (8% discount rate) to 9,920 (4% discount rate).

Authors' conclusions
The routine use of combination antiretroviral therapy for HIV disease is supported by current evidence.

CRD COMMENTARY - Selection of comparators
A justification was given for the comparator used, namely they were currently used therapies. You, as a user of the database, should decide if these health technologies are relevant to your setting.

Validity of estimate of measure of benefit
The authors did not state whether a systematic review of the literature had been undertaken. The methods and conduct of the review were not satisfactorily reported. The authors used data from the available studies selectively. The estimation of benefits was obtained directly from the effectiveness analysis.

Validity of estimate of costs
All categories of costs relevant to the perspective adopted were included in the analysis. Quantities and costs were reported separately. It was unclear whether a sensitivity analysis of costs or quantities was conducted. Charges were not used to proxy prices. The price year was reported.

Other issues
The authors did make appropriate comparisons of their findings with those from other studies. The issue of generalisability to other settings, however, was not addressed. The authors' results may have been based on a selective and non-systematic review. The study examined patients with HIV infection and this was reflected in the authors' conclusions. There was uncertainty surrounding the long-term effects of combination therapies. Guidelines have changed to recommend the use of triple or even quadruple therapies. Moreover, the routine use of serum HIV RNA load monitoring was not considered.

Implications of the study
Those responsible for ensuring service delivery will wish to have some understanding of the resource implications of combination therapies.

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Other publications of related interest

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