Primary prophylaxis for Pneumocystis carinii pneumonia in HIV-infected people with CD4 counts below 200/mm3: a cost-effectiveness analysis

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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
Dapsone, trimethoprim-sulfamethoxazole, aerosolized pentamidine.

Type of intervention
Secondary primary prevention.

Economic study type
Cost-effectiveness analysis.

Study population
HIV-infected people with CD4 lymphocyte counts below 200/mm3, on zidovudine.

Setting
The study was carried out in the USA.

Dates to which data relate

Source of effectiveness data
Review of studies.

Modelling
Epidemiological cohort model (model of survival and disease).

Results of the review
The model assumed zidovudine achieves a 42% reduction in development of AIDS diagnoses. PCP occurs in 60% of AIDS patients. Prophylaxis is assumed 90% effective for compliers (and compliance = 90%).

Measure of benefits used in the economic analysis
Life-years gained.

Direct costs
Direct costs were to the health service and included: medication, delivery, laboratory monitoring, and complications.
Price information related to 1989. Costs were used rather than charges.

**Currency**
US dollars ($). In the DH Register of Cost-effectiveness Studies, the original results were converted to UK pounds sterling (£) using GDP purchasing power parities, and reflated to 1991, using the NHS pay and prices index.

**Sensitivity analysis**
Sensitivity analysis was carried out using the methods of single parameter variation and threshold analysis.

**Synthesis of costs and benefits**
Outcome duration was life long. Cost duration was 1 year. Incremental cost per life-year gained (costs and benefits discounted at 5%) using: dapsone 50mg twice daily was 9280; Trimethoprim-sulfamethoxazole 160mg and 800mg twice daily was 9700 and; aerosolised pentamidine 300mg once/month via nebulizer was 12000.

**CRD Commentary**
(This commentary was not written by CRD, but by the authors of the DH Register.)

1) Using dapsone 50mg twice daily patients crossed over to pentamidine if therapy was discontinued. 2) Using trimethoprim-sulfamethoxazole patients crossed over to Pentamidine if therapy was discontinued. 3) Using aerosolised pentamidine 300mg once/month via nebulizer patients crossed over to dapsone if therapy was discontinued. 4) The analysis assumed that the prophylaxis does not increase/decrease the incidence of other AIDs diagnoses. 5) Most assumptions in the model are illustrative and require confirmation from an ongoing trial. 6) The sensitivity analysis was not adequate.

**Bibliographic details**

**PubMedID**
1673157

**Indexing Status**
Subject indexing assigned by NLM

**MeSH**
Acquired Immunodeficiency Syndrome /complications /diagnosis /drug therapy; Aerosols; Antiviral Agents /therapeutic use; CD4-Positive T-Lymphocytes /drug effects /microbiology; Cost-Benefit Analysis; Dapsone /therapeutic use; Drug Tolerance; Health Policy /economics; Humans; Leukocyte Count; Life Expectancy; Models, Biological; Patient Compliance; Pentamidine /therapeutic use; Pneumonia, Pneumocystis /diagnosis /drug therapy /prevention & control; Quality of Life; Sensitivity and Specificity; Trimethoprim, Sulfamethoxazole Drug Combination /therapeutic use

**AccessionNumber**
21995005200

**Date bibliographic record published**
27/06/1996

**Date abstract record published**