Cutting into cholesterol: cost-effective alternatives for treating hypercholesterolemia

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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
Therapies for serum cholesterol reduction.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Males (asymptomatic), mean age 48, initial level equal or greater than 6.85mmol

Setting
The study was carried out in the USA.

Dates to which data relate

Source of effectiveness data
Single study.

Study sample
It is unknown whether there is evidence that the study sample is representative of the clinical study question. The number of patients overall, and in intervention and control groups was also unknown.

Study design
Multi-centre, retrospective case-control study, with an unknown method of randomisation. Double blinding was conducted for the patient and clinician and the planned duration of follow-up of treatment cohort was 7 years.

Analysis of effectiveness
The analysis was based on intention to treat. The primary outcome used was CHD deaths averted.

Modelling
A simulation model was used.
Measure of benefits used in the economic analysis
Life years gained.

Direct costs
Direct costs were to the health service. For patients treated with oat bran these were oat bran, office visit and serum cholesterol reading every 2 months, with initially, 4 visits to dietician, 1 reading and fractionation of serum cholesterol, myocardial infarction, angina, and CABG. For patients treated with Cholestyramine and colestipol these were the cost of the drug at wholesale price and handling fee. Price information related to 1985.

Indirect Costs
For patients treated with oat bran these were the expected value of foregone earnings.

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 method of single parameter variation.

Synthesis of costs and benefits
Outcome duration was life long. Cost duration was 7 years. The incremental cost per life year gained for those given oat bran (90g/day), was $15700 (costs and benefits discounted at 5%) or $7500 (costs and benefits not discounted); when expected value of foregone earnings are included, was $8110 (costs and benefits discounted at 5%). For those given Cholestyramine (16.8g/day), was $51600 (costs and benefits discounted at 5%). For those given Colestipol (22g/day), 100% smokers was $41460; for those 38% smokers was $52300 (costs and benefits discounted at 5%).

CRD Commentary
(This commentary was not written by CRD, but by the authors of the DH Register.) 1) Quality of life effects are not addressed, e.g. side effects of therapy and labelling. 2) For those given OAT Bran, the result is not based on intervention but assumption of comparability with drugs. Little is known about long term effectiveness and compliance with oat bran. 3) For those given Cholestyramine (16.8g/day): CHD mortality is modelled independently from other causes. Potential increases in non-CHD events and side-effects, in the treatment group, are not addressed. 4) For those given Colestipol (22g/day): CHD mortality is modelled independently from other causes. Potential increases in non-CHD events and side-effects, in the treatment group are not addressed. 5) The trial showed significant reductions in CHD mortality but similar total mortality. In common with other epidemiologically based evaluations, the approach in this paper of modelling CHD deaths is not sound, especially for groups featuring a single risk marker - raised serum cholesterol 6) The hypothesis was driven.

Bibliographic details

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MeSH
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