Preventive therapy with isoniazid: cost-effectiveness of different durations of therapy

Snider D E, Caras G J, Koplan J P

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
Daily isoniazid chemoprophylaxis.

Type of intervention
Primary prevention.

Economic study type
Cost-utility analysis.

Study population
Persons infected with Mycobacterium tuberculosis.

Setting
The study was carried out in the USA.

Dates to which data relate
Price related to 1983.

Source of effectiveness data
Single study.

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

Measure of benefits used in the economic analysis
Quality-adjusted life years (QALYs). 4 levels of disability were used for the health state description. Author values were used to assess the health states.

Direct costs
Direct costs were to the health service and include: drug therapy, hospitalisation, diagnostic tests, outpatient visits, and administration. Price information related to 1983.

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 multiple parameter variation.

**Estimated benefits used in the economic analysis**
Incremental QALYs per 1000 patients (benefits discounted at 5%) for prevention of tuberculosis in persons infected with Mycobacterium tuberculosis at: 52 weeks of daily isoniazid chemoprophylaxis were 19.48; 24 weeks of daily isoniazid chemoprophylaxis were 17.22 and; 12 weeks of daily isoniazid chemoprophylaxis were 5.21. Outcome duration was 20 years. Treatment side-effects were included.

**Synthesis of costs and benefits**
Intervention and cost duration were 20 years. Incremental cost per QALY gained for prevention of tuberculosis (costs and benefits not discounted) at: 52 weeks of daily isoniazid chemoprophylaxis were 5062; 24 weeks of daily isoniazid chemoprophylaxis were 2052 and; 12 weeks of daily isoniazid chemoprophylaxis were 5630. Incremental cost per QALY gained (costs and benefits discounted at 5%) at: 52 weeks of daily isoniazid chemoprophylaxis were 9508; 24 weeks of daily isoniazid chemoprophylaxis were 4196 and; 12 weeks of daily isoniazid chemoprophylaxis were 8789. Incremental cost per QALY (costs and benefits discounted at 10%) at:52 weeks of daily isoniazid chemoprophylaxis were 16093; 24 weeks of daily isoniazid chemoprophylaxis were 7144 and; 12 weeks of daily isoniazid chemoprophylaxis were 13704. The sensitivity analysis showed that the range of incremental cost per QALY gained (discounted at 5%) at: 52 weeks of daily isoniazid chemoprophylaxis were 9508 (baseline), with lowest value of 7048, and highest value of 11755; 24 weeks of daily isoniazid chemoprophylaxis were 4196 (baseline), with lowest value of 2849, and highest value of 3436 and; 12 weeks of daily isoniazid chemoprophylaxis were 8789 (baseline), with lowest value of 22761, and highest value 5882. Sensitive parameters were disease prevention rate (treatment effectiveness) and case-fatality rate.

**CRD Commentary**
(This commentary was not written by CRD, but by the authors of the DH Register.) 1) Gastrointestinal reactions, isoniazid-related hepatitis and other minor reactions were accounted for. 2) Effectiveness of therapy was derived from a seven country East European study and US mortality rates. 3) The quality of the medical evidence is uncertain. 4) There were no health omissions.

**Bibliographic details**

**PubMedID**
3081740

**Indexing Status**
Subject indexing assigned by NLM

**MeSH**
Cost-Benefit Analysis; Drug Administration Schedule; Drug-Induced Liver Injury /economics /mortality; Follow-Up Studies; Gastrointestinal Diseases /chemically induced /economics; Hospitalization /economics; Humans; Isoniazid /administration & dosage /adverse effects; Patient Compliance; Quality of Life; Tuberculosis /economics /mortality /prevention & control

**AccessionNumber**
21995005248