Falls and health status in elderly women following first eye cataract surgery: an economic evaluation conducted alongside a randomised controlled trial


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.

CRD summary
The aim was to evaluate the cost-effectiveness of first eye cataract surgery for women over 70 years old with bilateral cataracts. The authors concluded that the surgery was cost-effective over the lifetime, but less so in the short-term. Overall, the methodology was reported clearly and good quality sources of data were used. The authors’ conclusions appear to be appropriate.

Type of economic evaluation
Cost-effectiveness analysis, cost-utility analysis

Study objective
The aim was to evaluate the cost-effectiveness of first eye cataract surgery for women over 70 years old with bilateral cataracts.

Interventions
First eye cataract surgery was compared with no surgery.

Location/setting
UK/secondary care.

Methods
Analytical approach:
This economic analysis was based on a single clinical trial and the time horizons were one year and lifetime. The authors stated that a health service and personal social services perspective were adopted.

Effectiveness data:
The clinical data were derived from a randomised controlled trial (RCT) including 288 patients (148 in the surgery group and 140 in the non-surgery group). The clinical endpoint was the rate of falls.

Monetary benefit and utility valuations:
The utility valuations were derived from the sample of patients enrolled in the RCT using the European Quality of life (EQ-5D) questionnaire.

Measure of benefit:
The two main health benefit measures were the number of falls prevented and quality-adjusted life-years (QALYs). The QALYs were discounted at an annual rate of 3.5% in the lifetime analysis.

Cost data:
The cost categories were those of primary health care, secondary health care, personal social services, and informal home care. Resource use was estimated through diaries collected by telephone and face-to-face interview, from the patients in the RCT. The unit costs of social services came from the Personal Social Services Research Unit and internet mobility store price catalogues. The time costs of informal carers were valued using average net weekly earnings. These costs were discounted at an annual rate of 3.5% in the lifetime analysis. The costs were in UK pounds sterling (£) and the price year was 2004.
Analysis of uncertainty:
A bootstrapping analysis was conducted to investigate the uncertainty surrounding the cost-effectiveness estimates. A one-way sensitivity analysis tested whether the model outcomes were robust.

Results
In the base case, over one year, the mean difference in the number of falls per patient after surgery compared with no surgery was -0.456 (95% confidence interval, CI: -1.153 to -0.083) and the mean difference in QALYs was 0.056 (95% CI: 0.006 to 0.108). The mean cost was £2,004 higher in the surgery group than in the no-surgery group (95% CI: £1,363 to £2,833). The incremental cost-effectiveness ratio (ICER) was £4,390 per fall prevented and £35,704 per QALY gained, excluding carer costs.

Over the lifetime, the ICER of the surgery over the no-surgery group was £13,172 per QALY gained. When carer costs were included, this fell to £10,382 per QALY gained.

The results of the one-way sensitivity analysis and bootstrapping confirmed these base-case findings.

Authors' conclusions
The authors concluded that first eye cataract surgery was cost-effective over the lifetime, but was less so in the short-term.

CRD commentary
Interventions:
The comparators were selected appropriately, as they represented current practice in the authors' setting. The description of the interventions was clear.

Effectiveness/benefits:
The RCT was a high quality source of clinical evidence. The use of an intention-to-treat approach and bootstrapping will have strengthened the clinical study. However, it was unclear if the patients' characteristics at baseline were comparable. The utility data were appropriately derived.

Costs:
The broad cost categories were consistent with the perspective. The reporting of the cost analysis was transparent and clear. A breakdown of the cost items was provided. Resources used were collected from the sample of patients enrolled in the RCT and therefore reflected the real consumption of services in the clinical trial. Analyses were performed to assess the statistical significance of the cost differences. Other details, such as the price year and sources of costs, were reported.

Analysis and results:
A bootstrapping analysis was conducted to synthesise the costs and benefits. The issue of uncertainty was satisfactorily addressed in the sensitivity analysis.

Concluding remarks:
Overall, the methodology was reported clearly and good quality sources of data were used. The authors' conclusions appear to be appropriate.

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