Outpatient thyroid and parathyroid surgery: a prospective study of feasibility, safety, and costs
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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
Outpatient thyroid and parathyroid surgery.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Patients undergoing thyroid and parathyroid operations performed by specialists in endocrine surgery.

Setting
Hospital. The economic study was carried out in Boston, Massachusetts, USA.

Dates to which data relate
The effectiveness and cost data corresponded to patients undergoing surgery between May 1994 and March 1995. No systematic distinction was made between resource utilization and cost data. The price year was not clearly reported.

Source of effectiveness data
Effectiveness data were derived from a single study.

Link between effectiveness and cost data
The costing was undertaken on the same patient sample as that used in the effectiveness analysis with the exception of one patient who was excluded. It was not explicitly reported whether the costing was carried out prospectively or retrospectively.

Study sample
Power calculations were not used to determine the sample size. A total of 100 patients were included in the analysis, from whom 69 patients with an average (SD) age of 48.2 (12.2) years were operated on as outpatients. The remainder, 31 individuals with an average (SD) age of 53.5 (17.4) years, were operated on as inpatients.

Study design
This was a prospective cohort study, carried in a single centre. The duration of follow up was 6 to 8 hours after surgery.
(with an additional follow up visit at 2 to 6 weeks after the operation) for the outpatient group, whereas, for the inpatient group, it was 1 to 3 days.

**Analysis of effectiveness**
The analysis was based on the intention to treat principle. The outcomes analysed were complications (haemorrhage, airway obstruction, or hypocalcemia), and requirement for admission in the outpatient group. Patient satisfaction was assessed using a mailed questionnaire sent to both in- and outpatients, the results of which were compared with the results obtained from a group of 30 consecutive patients undergoing laparoscopic cholecystectomy. The groups differed in terms of age.

**Effectiveness results**
There were no admissions in the outpatient group nor were any major complications reported. Two outpatients were seen in the emergency department after hospital discharge, but the complications were minor. A total of 65% of patients who underwent thyroid or parathyroid surgery were satisfied with the outpatient approach, which compares favourably with the 68% attained in patients undergoing laparoscopic cholecystectomy.

**Clinical conclusions**
In this study, patients were carefully examined for any neck swelling before discharge from the outpatient surgery unit 6 to 8 hours after operation. Because no cases of postoperative haemorrhage occurred after neck surgery, the authors were unable to assess the possible consequences of such a complication in the outpatient setting.

**Measure of benefits used in the economic analysis**
No summary benefit measure was identified in the economic analysis, and only separate clinical outcomes were reported.

**Direct costs**
Costs were not reported separately due to the short time frame of the follow-up period. The quantities of resource use were not reported separately from the prices apart from the average length of hospital stay. It was not clearly reported what costs were measured in the analysis (the authors reported 'hospital' costs). The boundary adopted was the 'hospital'. The cost estimates were based on actual data from the study institution, with the costs corresponding to the period May 1994 to March 1995.

**Statistical analysis of costs**
Statistical analysis (the nature of which was not specified) was performed to compare the study groups in terms of average total costs.

**Indirect Costs**
Indirect costs were not considered.

**Currency**
US dollars ($).

**Sensitivity analysis**
No sensitivity analysis was conducted.
Estimated benefits used in the economic analysis
Not applicable.

Cost results
The average hospital cost for the outpatient group was $1,991 (+/- $279, range: $1,594 - $2,783), and for the inpatient group was $2,875 (+/- $615, range: $2,031 - $4,216), (p<0.001).

Synthesis of costs and benefits
Costs and benefits were not combined since performing outpatient surgery was regarded as a weakly dominated strategy (with equal efficacy and less costs).

Authors' conclusions
The authors believe that the 30% cost reduction implied by the intervention (outpatient thyroid and parathyroid surgery) relative to the comparator (inpatient thyroid and parathyroid surgery), can be achieved in most patients without sacrificing quality of care if experienced specialist surgeons perform the operations.

CRD COMMENTARY - Selection of comparators
The reason for the choice of comparator is clear.

Validity of estimate of measure of benefit
The internal validity of the effectiveness results can not be guaranteed given the non-randomised design, the relatively small sample size, and non-comparability of the study groups.

Validity of estimate of costs
Only mean duration of hospital stay was reported. Insufficient details of the methods of cost estimation were provided and, as such, it is impossible to assess whether any important cost items were omitted costs. The nature of the statistical analysis performed on the costs was not reported.

Other issues
In view of the lack of randomisation, relatively small sample size, and the non-comparability of the study groups the results need to be treated with some caution. The conclusions reached by the authors may not be fully justified given the uncertainties in the data. The study reported two previously completed studies providing evidence about the feasibility of outpatient thyroidectomy. The authors stated that the outpatient approach may not be appropriate for patients living a long distance from the hospital and also that some patients may not be suitable for outpatient treatment for medical or social reasons. They did not, however, provide any clear criteria for the selection of those patients who may benefit from the outpatient surgery modality.

Source of funding
None stated.

Bibliographic details

PubMedID
7491522
Indexing Status
Subject indexing assigned by NLM

MeSH
Adult; Aged; Aged, 80 and over; Ambulatory Surgical Procedures /adverse effects /economics; Feasibility Studies; Hospital Costs; Humans; Middle Aged; Parathyroid Diseases /surgery; Parathyroid Glands /surgery; Parathyroidectomy; Postoperative Complications; Prospective Studies; Thyroid Diseases /surgery; Thyroid Gland /surgery; Thyroidectomy

AccessionNumber
21996000042

Date bibliographic record published
31/05/2000

Date abstract record published
31/05/2000