Early hospital discharge after radical retropubic prostatectomy: impact on cost and complication rate

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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
Early hospital discharge after radical retropubic prostatectomy.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness study.

Study population
Patients with localised prostate cancer undergoing radical retropubic prostatectomy.

Setting
The practice setting was the hospital. The economic study was conducted in Cleveland, Ohio, USA.

Dates to which data relate
Effectiveness data were collected between July 1989 and April 1994.

Source of effectiveness data
Single study.

Link between effectiveness and cost data
Costing was undertaken retrospectively, on the same patient sample as that used in the effectiveness study.

Study sample
The study comprised 171 consecutive patients undergoing radical retropubic prostatectomy between July 1989 and January 1993 (group 1, median length of stay 8 days) and 101 consecutive patients operated on between February 1993 and April 1994 during a prospective effort to reduce hospital length of stay (group 2, median length of stay 5 days). The groups had a similar mean age (63.1 versus 61.2). No power calculations relating to the sample size were stated.

Study design
Case-series. The follow-up period for observing complications was the first 30 days after surgery.
Analysis of effectiveness
The analysis of the clinical study was based on treatment completers only.

The primary health outcomes used in the analysis were: major complications (deep venous thrombosis, pulmonary embolism, sepsis, urine leak), minor complications (wound infection, foley catheter malfunction, prolonged ileus, diverticulitis, small-bowel obstruction, lymphocele, pneumonia, retained pelvic drain, coagulopathy, and obturator nerve injury) and perioperative mortality.

Effectiveness results
The overall complication rate was equivalent for both groups: 13.5% versus 11.9% (p=NS, Fisher's exact test). The percentage of patients who experienced major complications was the same for both groups. The combined perioperative mortality was 0.4% (1 patient in group 1 died). The complication rate for patients with length of stay of 5 days or less was 7.5%, a rate comparable with the overall group (p=NS, Fisher's exact test) although no figures were presented for the overall group.

Clinical conclusions
Reduced hospital stay after radical retropubic prostatectomy did not result in increased morbidity.

Modelling
Mean total cost and mean length of stay were determined by diagnosis-related group (DRG), namely DRG 334 for radical prostatectomy with comorbidity and DRG 335 for radical prostatectomy without comorbidity.

Measure of benefits used in the economic analysis
Major complications avoided (deep venous thrombosis, pulmonary embolism, sepsis, urine leak), minor complications avoided (wound infection, foley catheter malfunction, prolonged ileus, diverticulitis, small-bowel obstruction, lymphocele, pneumonia, retained pelvic drain, coagulopathy, urinary retention, and obturator nerve injury) and reduced perioperative mortality.

Direct costs
All hospital charges were considered, excluding professional fees. Costs were not discounted. The price date was not stated.

Statistical analysis of costs
Differences in complication rates were analysed by Fisher's exact test while differences in mean length of stay were compared using the Mann-Whitney test.

Indirect Costs
No indirect costs were considered.

Currency
US dollars ($).

Sensitivity analysis
Not conducted.
Estimated benefits used in the economic analysis
The overall complication rate was equivalent for both groups (13.5% versus 11.9%). Combined perioperative mortality was 0.4%.

Cost results
Between 1989 and 1994, in parallel with reduced length of stay, the cost per case was reduced by 42% for DRG 334 and 32% for DRG 335. When comparing group 1 and 2, the average cost reduction for DRG 334 was 32% and for DRG 335 26%.

Synthesis of costs and benefits
A reduction in the median length of stay from 8 to 5 days resulted in a 32% decrease in hospital cost per case in group 2 versus group 1 for patients in DRG 334 and a 26% decrease for DRG 335, with a similar rate and nature of complications (11.9% versus 13.5%).

Authors' conclusions
Reduced hospital length of stay after radical retropubic prostatectomy results in significant cost savings without increasing morbidity.

CRD Commentary
a) The method of sample selection was not described.

b) No sensitivity analysis was conducted.

c) The results relating to the major complication rate were not adequately described in the text. The authors stated under "Results" that "the percentage of patients who experienced major complications was the same for both groups". Table 1 shows a 5.9% rate of major complications for group 1, compared with an 8% for group 2. No statistical analysis was presented for this important result.

d) The analysis seems to have been based on treatment completers only, but this is not made clear

e) The quantities and cost analyses were based in one hospital only in the USA.

Bibliographic details

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MeSH
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