Perioperative advantage of radical perineal prostatectomy over radical retropubic prostatectomy

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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
Radical perineal prostatectomy (PP) was compared with radical retropubic prostatectomy (RP) as a treatment option for localised prostate cancer.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised patients who underwent radical prostatectomy for clinically organ confined adenocarcinoma of the prostate (Stage T1-T2, N0, M0) at the authors' institute from July 1998 to June 2003.

Setting
The setting was secondary care. The economic study was carried out in New York, USA.

Dates to which data relate
The effectiveness and resource use data were gathered between July 1998 and June 2003. The price year was not stated.

Source of effectiveness data
The evidence for the final outcomes was derived from a single study.

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

Study sample
Power calculations were not used to determine the sample size. The study sample included 148 patients at the authors' institute who underwent radical prostatectomy for clinically organ confined adenocarcinoma of the prostate from July 1998 to June 2003. The operation was chosen on the basis of patient and physician preferences. Radical prostatectomy was performed via a retropubic (radical RP) approach in 109 patients and via a perineal (radical PP) approach in 39 patients.

Study design
This was an observational study that was carried out at a single acute care institution.

**Analysis of effectiveness**
The primary health outcomes were the operative time, estimated blood loss (EBL), transfusion rate and length of hospital stay. The two groups were shown to be comparable at baseline for age, Gleason score, and preoperative prostate specific antigen.

**Effectiveness results**
The mean operative time from the incision to skin closure was 227 minutes (95% confidence interval, CI: 110 - 360) for radical RP and 218 minutes (95% CI: 152 - 380) for radical PP, (p not significant).

The intraoperative EBL (857 versus 521 cm³; p=0.03) and perioperative transfusion rate (58% versus 36%; p=0.02) were statistically less for the radical PP group.

The radical PP group had one less day of hospitalisation.

**Clinical conclusions**
Radical PP offers the patient a perioperative advantage in terms of lower blood loss, transfusion requirement and shorter hospital stay, in comparison with radical RP.

**Measure of benefits used in the economic analysis**
No summary measure of benefits was considered. The economic analysis was, in effect, a cost-consequences analysis.

**Direct costs**
The direct costs included total hospitalisation charges for radical RP and for radical PP. The total hospitalisation charges for each procedure were based on the diagnosis-related group indexed against the corresponding International Classification of Disease-9. This flat rate hospital fee included operating and recovery room charges, as well as all other charges incurred during hospitalisation. The total perioperative charges for each patient were obtained from published national data derived from the Healthcare Cost and Utilization Project. Discounting was not carried out. The quantities and the costs were not analysed separately. The price year was not reported.

**Statistical analysis of costs**
Statistical analyses were performed on each variable, including costs. Student’s t-test (two-tailed) was used.

**Indirect Costs**
The indirect costs were not included.

**Currency**
US dollars ($).

**Sensitivity analysis**
A sensitivity analysis was not carried out.

**Estimated benefits used in the economic analysis**
The benefits were not reported.
Cost results
The mean hospital charge was nearly $4,000 less for the radical PP group ($13,779) than for the radical RP group ($17,739).

Synthesis of costs and benefits
The costs and benefits were not combined.

Authors' conclusions
Compared with radical retropubic prostatectomy (RP), radical perineal prostatectomy (PP) offers the patient a perioperative advantage in terms of lower blood loss, transfusion requirement and shorter hospital stay, in addition to a significant charge benefit appeal.

CRD COMMENTARY - Selection of comparators
A justification for the comparators was given. At the time of the study, both radical RP and radical PP were current practices for the treatment of localised prostate cancer.

Validity of estimate of measure of effectiveness
The estimates of measure of effectiveness are unlikely to be valid because the effectiveness analysis was based on an observational study, under which the confounding factors were not accounted for. The choice of operation was based on patient and physician preferences, which may bias the effectiveness results of the two procedures.

Validity of estimate of measure of benefit
The authors did not derive a summary measure of health benefit. The analysis was therefore categorised as a cost-consequences study.

Validity of estimate of costs
The estimate of costs is unlikely to be valid because the cost perspective adopted was not reported. In addition, the resource quantities were not reported separately from the costs and the price year was unclear.

Other issues
The authors made some comparisons of their findings with those from other studies. The issue of generalisability to other settings was not discussed. The authors reported certain limitations to their study, such as its retrospective nature and the inequality of the two group sizes.

Implications of the study
The study implied that, with known similarities between overall morbidity and mortality, radical PP offers the patient a perioperative advantage over radical RP in terms of lower blood loss, transfusion requirement and shorter hospital stay, in addition to a significant charge benefit appeal.

Source of funding
None stated.

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