Economic evaluation of hysteroscopic endometrial ablation versus vaginal hysterectomy for menorrhagia
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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
Hysteroscopic endometrial ablation for the treatment of menorrhagia.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Women with menorrhagia, who were unwilling or unable to continue with medical therapy.

Setting
The practice setting was hospital. The economic analysis was carried out in Ontario, London, Canada.

Dates to which data relate
Effectiveness data were collected between June 1992 and July 1993. Costs and charges related to 1995.

Source of effectiveness data
Effectiveness data were derived from a 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
40 women with the single diagnosis of menorrhagia, who underwent vaginal hysterectomy, were compared retrospectively with the first 40 patients who had hysteroscopic endometrial ablation for menorrhagia during the same period. The mean age of the ablation group was 41 (range: 16-54) years, compared with 40 (range: 28-57) in the hysterectomy group. The mean weight of the ablation group was 159 pounds (range: 98-288), compared with 156 pounds (range: 108-232) in the hysterectomy group. Power calculations were not used to determine sample size.

Study design
The study was of a retrospective case-series design. Patients were followed up for 12 months.
Analysis of effectiveness
The analysis was based on a complete set of patient records. The main health outcomes used in the analysis were: estimated blood loss (ml), number of complications (intraoperative and postoperative), bleeding elimination, number of days to return to work and patient satisfaction with the procedure in terms of requests or requirements for further surgical treatment. Patient age, parity, weight and uterine size were comparable in the two groups.

Effectiveness results
Estimated blood loss for vaginal hysterectomy was 313 (+/- 193) ml and less than 100 ml for ablation. 5 intraoperative and 8 postoperative complications occurred in the vaginal hysterectomy group; no complication occurred in the ablation group. At 12 months of follow-up, the results indicated that vaginal hysterectomy eliminated bleeding in 100% of patients, while ablation eliminated bleeding in 46% and improved bleeding in a further 44%. 10% of the ablation group experienced no significant change in bleeding. In the ablation group, the mean time to return to work, or to routine activity level, was 2.2 (+/- 3.2) days, compared with 29.4 (+/- 18.2) days in the hysterectomy group. All patients in the hysterectomy group were satisfied with the outcome of their treatment. Seven patients (17.5%) were unsatisfied after endometrial ablation. The statistical significance of these results was not reported.

Clinical conclusions
Endometrial ablation is 82% effective for the treatment of women with menorrhagia. Hysterectomy appears to be associated with a higher rate of complications than does endometrial ablation. However, the absence of complications observed in the ablation arm of the study was noted to be unrepresentative of the authors’ experience of this technology. The long-term effects of ablation, in terms of post-operative morbidity, are unknown.

Measure of benefits used in the economic analysis
Effectiveness estimates were not converted to a single measure of health benefit for the economic analysis.

Direct costs
Direct health service costs were considered, including surgeons’ fee, anaesthetist, hospital (operating room and surgical aftercare) and the cost of additional surgeries. Costs and quantities were reported separately. 1995 prices were used.

Statistical analysis of costs
The statistics used included mean, standard deviation, and comparison of means by Student t test.

Indirect Costs
The labour market cost of convalescence was calculated as follows: cost = (number of weeks not working) x (average female weekly earnings) x (proportion of females who work in the province of Ontario). Costs and quantities were reported separately. 1995 prices were used.

Currency
Canadian dollars (Can$).

Sensitivity analysis
A sensitivity analysis was not performed.

Estimated benefits used in the economic analysis
Estimated benefits were proxied by the effectiveness estimates.
Cost results
The total per-patient costs were estimated to be Can$2,279 for the ablation group and Can$5,373 for the hysterectomy group. The statistical significance of this result was not reported.

Synthesis of costs and benefits
A synthesis of costs and benefits was not performed.

Authors' conclusions
Endometrial ablation was 82% effective and 58% less expensive than vaginal hysterectomy for the treatment of women with menorrhagia.

CRD COMMENTARY - Selection of comparators
The reason for the choice of comparator is clear, namely that vaginal hysterectomy represents usual clinical practice. You, as a user of this database, should decide whether this is a widely used health technology in your own setting.

Validity of estimate of measure of benefit
The authors did not develop a summary measure of benefit for the analysis, such as a quality-adjusted life year (QALY), referring to the absence of data on the long-term effects of endometrial ablation. As such, the authors have conducted a preliminary cost and outcomes study. The rate of complications observed in the ablation arm of the study was noted to be unrepresentative of the authors' experience of this technology.

Validity of estimate of costs
Costs were calculated clearly and comprehensively, allowing recalculations in other settings. The calculation of convalescence costs is of particular interest. However, the cost of informal care was not included in the analysis and so the societal cost of the intervention remains unclear. A statistical analysis of costs was performed, but no sensitivity analysis of the areas of uncertainty (such as the proportion of women who worked) was conducted.

Other issues
The authors conclusions are justified by the study, but care should be taken in generalising the cost-saving potential of endometrial ablation to other settings.

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