A cost-effectiveness evaluation of preoperative type-and-screen testing for vaginal hysterectomy

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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
To evaluate the efficiency of preoperative type-and-screen test for vaginal hysterectomy.

Type of intervention
Screening.

Economic study type
Cost-effectiveness analysis.

Study population
A cohort of female patients who underwent vaginal hysterectomies for all noncancerous indications, including fibroid uterus, endometriosis, menorrhagia, uterine prolapse, pelvic pain, cervical dysplasia and adenomyosis. No further details were given.

Setting
Hospital. The economic study was carried out in Detroit, Michigan, USA.

Dates to which data relate
The main effectiveness data were taken from a single study conducted in 1994. Resource and cost data were mainly derived from 1988-1994 sources. The price year was 1994.

Source of effectiveness data
The estimates for the number of patients needing blood transfusion (intraoperative blood transfusion rate), urgency and indication for blood transfusion were 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 cost effectiveness study.

Study sample
A cohort of 1,063 female patients who underwent vaginal hysterectomies for all noncancerous indications, including fibroid uterus, endometriosis, menorrhagia, uterine prolapse, pelvic pain, cervical dysplasia and adenomyosis. No further details were given. Power calculations to determine the sample size were not undertaken.

Study design
Case series. The duration of the follow-up and loss to follow-up were not stated.

**Analysis of effectiveness**
The analysis of the clinical study was based on treatment completers only. The primary outcomes used in the analysis were the number of patients who needed blood transfusion (intraoperative blood transfusion rate), urgency and indication for blood transfusion.

**Effectiveness results**
26 patients needed blood transfusion (intraoperative blood transfusion rate, 0.66%): 10 preoperative, 7 intraoperative and 9 postoperative. There was no urgency in blood transfusion. No CI or P-values for primary outcomes were provided.

**Clinical conclusions**
The routine practice of performing type-and-screen testing before vaginal hysterectomy does not enhance patient care.

**Modelling**
Not used.

**Measure of benefits used in the economic analysis**
Since the effectiveness analysis showed no difference in clinical benefit between the type-and-screen test and the do nothing alternative, the economic analysis was based on the difference in costs only.

**Direct costs**
The type-and-screen costs were included in the analysis. The quantities were not reported separately from the prices. The quantity/cost boundary adopted was the hospital. Discounting was not applied. The price year was 1994.

**Statistical analysis of costs**
Not undertaken.

**Currency**
US dollars ($).

**Sensitivity analysis**
Not performed.

**Estimated benefits used in the economic analysis**
Not applicable. The benefits were expressed in terms of cost savings.

**Cost results**
The cost of universal testing would have been $14,500,000 annually, given 186,000 vaginal hysterectomies completed in 1995. The national cost savings per year could be $13,500,000 as the annual cost would have been $1,000,000 if preoperative evaluation of type-and-screen were completed only for indicated vaginal hysterectomy procedures.
Synthesis of costs and benefits
Not applicable. An incremental analysis of costs was conducted. The cost per test-and-screen was $78.

Authors' conclusions
Routine preoperative type-and-screen testing of blood before vaginal hysterectomy is not cost-effective in the absence of preoperative indications and as such it should not be continued.

CRD COMMENTARY - Selection of comparators
The choice for the comparator is clear. The type-and-screen testing of blood before vaginal hysterectomy is commonly performed. You, as a user of this database, should consider whether these are widely used health technologies in your own setting.

Validity of estimate of measure of benefit
The estimate of measure of benefit, namely cost reduction, used in the economic analysis is likely to be internally valid. The data have not been used selectively. However as no sensitivity analysis was conducted, the results need to be treated with some caution.

Validity of estimate of costs
Resource quantities were not reported separately from the prices. Adequate details of methods of quantity/cost estimation for anticipated vaginal hysterectomies completed in 1995 were not given. Important cost items, such as the cost for blood transfusion and hemorrhage necessitating an emergency transfusion, were omitted.

Other issues
The authors' conclusions are likely to be justified given the uncertainties in the data. The issue of generalisability to other settings or countries was not addressed. However, appropriate comparisons were made with other studies, particularly in terms of intraoperative blood transfusion rate. Results were not presented selectively. The authors' note that the indication for intraoperative transfusion was highly variable.

Implications of the study
More research is required in analysing the effect of different indications for intraoperative transfusion.

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