Comparison of sonography, sonohysterography, and hysteroscopy for evaluation of abnormal uterine bleeding


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
Transvaginal sonography (TVS), sonohysterography (SHG) and diagnostic hysteroscopy in the evaluation of abnormal uterine bleeding.

Type of intervention
Diagnosis.

Economic study type
Cost-effectiveness analysis.

Study population
Patients aged between 40 to 89 years with abnormal uterine bleeding, such as menorrhagia, metrorrhagia, polymenorrhea, hypermenorrhea or abnormal postmenopausal bleeding.

Setting
Hospital. The economic study was carried out in the USA.

Dates to which data relate
Effectiveness and resource use data were collected during the period September 1994 to June 1995. The price year was not stated.

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

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

Study sample
68 consecutive cases were included in the study: 34 in the SHG group and 34 in the TVS group. No power calculations were used to determine sample size. No blinding method was used to assess outcomes.

Study design
This was a prospective, unblinded, randomized single-centre study of women who complained of abnormal uterine
bleeding. Patients were numbered consecutively and divided into two groups: odd numbers underwent SHG and even numbers underwent TVS. All patients then had office diagnostic hysteroscopy and endometrial biopsy.

**Analysis of effectiveness**
The analysis of the clinical study was based on intention to treat. The sensitivity and specificity of the tests to evaluate abnormal uterine bleeding were used as the primary outcomes. No significant differences were observed in terms of age, weight, gravidity or parity between the two study groups.

**Effectiveness results**
Comparison between the SHG group and the final diagnosis revealed a sensitivity of 90% and specificity of 83%. In the TVS group, sensitivity was 95% and specificity was 65%. For diagnostic hysteroscopy, the sensitivity was 78% and specificity was 54%. Although the sensitivity of TVS and SHG appears to be higher than that for diagnostic hysteroscopy, only TVS shows statistical significance (p<0.05).

**Clinical conclusions**
TVS is a more sensitive test than diagnostic hysteroscopy for evaluating abnormal uterine bleeding. Both TVS and SHG were well tolerated by all patients.

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

**Direct costs**
It is not clear on what basis the estimates of quantities and costs were made.

**Indirect Costs**
Not included.

**Currency**
US dollars ($).

**Sensitivity analysis**
No sensitivity analysis of benefits/costs was performed.

**Estimated benefits used in the economic analysis**
Not applicable.

**Cost results**
The average cost of TVS and SHG was $195. The average cost for diagnostic hysteroscopy performed at the office was $650. For two patients who had diagnostic hysteroscopy in the ambulatory surgical centre the average cost was $1,500. The average cost for all cases was $675.

**Synthesis of costs and benefits**
Synthesis was not undertaken by the authors because it was not relevant, since, for both TVS and SHG, incremental
costs were negative and incremental benefits were positive when compared to diagnostic hysteroscopy.

**Authors' conclusions**
TVS and SHG offer a cost-effective alternative to diagnostic hysteroscopy in the evaluation of patients aged 40 years or older with abnormal uterine bleeding. The authors concluded that their study suggests that TVS is a more sensitive test than diagnostic hysteroscopy for evaluating abnormal uterine bleeding.

**CRD COMMENTARY - Selection of comparators**
The reason for the choice of comparators is not clear, nor do the authors provide a justification for their selection.

**Validity of estimate of measure of benefit**
As the authors indicated, this was a small, prospective case series which produced a small number of samples in the two groups. Larger studies are required in order to confirm these preliminary findings.

**Validity of estimate of costs**
Inadequate details were provided of methods of quantity and cost estimations, hence, it is not possible to determine whether important cost items were omitted from the analysis.

**Other issues**
It is difficult to state whether the authors' conclusions were justified given the lack of detail provided on the estimation of costs and the small sample sizes used in the study.

**Implications of the study**
Further studies with a larger number of cases are needed to evaluate the role of SHG and compare its sensitivity, predictability, and accuracy to those of diagnostic hysteroscopy in the management of patients with abnormal uterine bleeding.

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None stated.

**Bibliographic details**

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**Indexing Status**
Subject indexing assigned by NLM

**MeSH**
Adult; Aged; Aged, 80 and over; Cost-Benefit Analysis; Female; Humans; Hysteroscopy/economics; Middle Aged; Predictive Value of Tests; Prospective Studies; Sensitivity and Specificity; Ultrasonography/economics; Uterine Hemorrhage/diagnosis/etiology/ultrasonography; Uterine Neoplasms/diagnosis/ultrasonography; Uterus/ultrasonography