

# Review: transvaginal ultrasonography, sonohysterography, and hysteroscopy have moderate accuracy in abnormal uterine bleeding

Farquhar C, Ekeroma A, Furness S, et al. A systematic review of transvaginal ultrasonography, sonohysterography and hysteroscopy for the investigation of abnormal uterine bleeding in premenopausal women. *Acta Obstet Gynecol Scand* 2003;**82**:493–504.

Clinical impact ratings GP/FP/Primary care ★★★★★☆☆

**Q** In premenopausal women with abnormal uterine bleeding (AUB), what is the diagnostic accuracy of transvaginal ultrasonography (TVUS), transvaginal sonohysterography (SH), and diagnostic hysteroscopy (DH) with biopsy?

## METHODS



**Data sources:** Medline and EMBASE/Excerpta Medica (1980 to July 2001) and reference lists.



**Study selection and assessment:** English language comparative studies that compared a diagnostic (TVUS, SH, and DH with biopsy) and reference test (histopathology combined with hysteroscopy or hysterectomy) in premenopausal women with menstrual symptoms that may be caused by uterine pathology. Studies had to meet minimum quality criteria, report sufficient data to calculate sensitivity and specificity, and present separate results for postmenopausal women if they comprised >40% of the sample.



**Outcomes:** detection of endometrial hyperplasia, endometrial polyps, and submucous fibroids.

## MAIN RESULTS

19 studies met the selection criteria. Mean age ranged from 38.5–49 years in 15 studies; 1 study reported the age range only (40–51 y), and 3 studies did not report age. The table shows the results.

## CONCLUSIONS

In women with abnormal uterine bleeding, transvaginal ultrasonography (TVUS), sonohysterography (SH), and diagnostic hysteroscopy (DH) are all moderately accurate for detecting intrauterine pathology. SH and DH seem better than TVUS for detecting submucous fibroids.

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## Commentary

**A**UB, a common women’s health disorder, affects 20% of reproductive aged women. Diagnostic evaluations and treatment modalities for AUB are rapidly evolving.<sup>1</sup> The review by Farquhar *et al* was reported to be in premenopausal women; however, 3 studies did not report age. Distinguishing between postmenopausal and premenopausal women is important as pathological findings and patient satisfaction with TVUS, SH, and DH vary between these groups.<sup>2</sup>

This review concluded that SH and DH were better than TVUS for detecting submucous fibroids. This is not surprising because 3 dimensional SH provides better anatomical delineation, and DH affords direct intrauterine visualisation.

Common causes of AUB include submucous fibroids and endometrial polyps. The diagnostic onus in AUB is to exclude endometrial hyperplasia (EH) and endometrial cancer. SH and even DH with direct visualisation cannot reliably diagnose a malignancy without tissue biopsy. Therefore, the gold standard for diagnosis of EH or carcinoma remains tissue biopsy—either blind endometrial biopsy or directed endometrial biopsy done after SH or DH. Blind endometrial biopsy with TVUS is the most readily available technique, but the increasing availability of SH allows more specific anatomical endometrium detail and can diagnose endometrium polyps in postmenopausal women with AUB and normal TVUS results.<sup>2</sup> After excluding cancer, treatment of common benign lesions is the goal.

Cost effective analyses need to be done comparing these techniques including the more invasive but potentially therapeutic hysteroscopy with resection of polyps and submucosal fibroids. Typically, patients with a normal SH result are reassured and spared an endometrial biopsy, whereas patients with focal lesions can proceed with biopsy and/or therapeutic operative hysteroscopy. Patients who have normal SH results but continue to have AUB should still be considered for DH as it allows more complete visualisation of the cornual areas. Refinements in diagnosing the aetiology of AUB allows for increased options for targeted treatment, thus potentially reducing the number of hysterectomies, particularly in women with anatomically normal uteri.

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- 1 Stabinsky SA, Einstein M, Breen JL. *Obstet Gynecol Surv* 1999;**54**:62–72.
- 2 Pasqualotto EB, Margossian H, Price LL, et al. *J Am Assoc Gynecol Laparosc* 2000;**7**:201–9.

Test characteristics for diagnosing submucous fibroids (SF), endometrial hyperplasia (EH), or any intrauterine pathology in abnormal uterine bleeding\*

Tests	Outcomes	Number of studies	Sens range	Spec range	+LR	–LR
TVUS	All	10	48–100%	12–100%	1.0–52	0.057–0.79
	SF	9	21–100%	53–100%	1.6–62	0.03–0.80
	EH	7	33–100%	79–100%	2.6–95	0.04–0.75
SH	All	11	85–100%	50–100%	2.0–80	0.12 (0.08 to 0.18)
	SF	7	57–100%	96–100%	30 (18 to 50)	0.06–0.47
	EH	4	29–80%	82–100%	1.6–70	0.14–0.87
Hysteroscopy	All	3	90–97%	62–93%	2.6–15	0.07 (0.04 to 0.15)
	SF	4	53–100%	97–100%	29 (13 to 65)	0.08–0.48
	EH	3	90–100%	97–100%	93 (42 to 204)	0.05 (0.02 to 0.14)

\*SH = sonohysterography; TVUS = transvaginal ultrasonography; Sens = sensitivity; Spec = specificity. Diagnostic terms defined in glossary. LR is reported as pooled summary estimate with 95% CI or as range.