

# Role of Transvaginal Ultrasonography in Diagnosing Endometrial Hyperplasia in Postmenopausal Women with Abnormal Uterine bleeding taking Histopathology as Gold Standard

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## ABSTRACT

**Aim:** Diagnostic accuracy of transvaginal ultrasonography in diagnosing endometrial hyperplasia in post-menopausal women with abnormal uterine bleeding taking histopathology as gold standard.

**Settings & duration:** Department of Radiology, CMH, Rawalpindi from 25-08-17 to 24-02-18

**Methodology:** A total of 203 post-menopausal females having AUB were included. Patients who had cervical and vaginal pathologies other than EH were excluded. The ultrasound was done with Endovaginal probe of Toshiba aplo 500. On ultrasound, endometrial thickness was taken. Endometrial biopsy was carried out using hysteroscopy. Final diagnosis was based upon histopathology report.

**Results:** In TVS positive patients, 103 were True Positive and 12 were False Positive. Among 88 TVS negative patients, 04 were False Negative whereas 84 were True Negative ( $p=0.01$ ). Overall sensitivity, specificity, PPV, NPV and diagnostic accuracy of transvaginal ultrasonography in diagnosing endometrial hyperplasia in post-menopause women with abnormal uterine bleeding taking histopathology as gold standard was 96.3%, 87.5%, 89.6%, 95.5% and 92.1% respectively.

**Conclusion:** Diagnostic accuracy of TVS in diagnosing endometrial hyperplasia in post-menopause women with AUB is high, so TVS should be the first line investigation in diagnosis of endometrial hyperplasia.

**Keywords:** Abnormal uterine bleeding, TVS, endometrial hyperplasia

## INTRODUCTION

Abnormal uterine bleeding (AUB) is the most common complaint seen by gynecologists. It is about 10% of cases in any OPD<sup>1</sup>. AUB is disturbing complaint at any age in women's life, but important issue is postmenopausal bleeding as it is the most important clinical sign that indicates the presence of endometrial carcinoma. The risk of endometrial cancer in patients and especially with atypia is about 15% to 45%<sup>2</sup>.

Differential diagnosis of post-menopausal bleeding includes endometrial hyperplasia, endometrial polyp, endometrial carcinoma, cervical cancer and uterine leiomyosarcoma. It is seen that 15–20% of patients with postmenopausal bleeding subsequently develop endometrial hyperplasia<sup>1</sup>. In another study, incidence of EH in post menopausal women with AUB is up to 47%<sup>3</sup>.

The objective of study was to diagnose accuracy of transvaginal ultrasonography in endometrial hyperplasia in post-menopausal women with abnormal uterine bleeding taking histopathology as gold standard.

## METHODOLOGY

This descriptive, cross sectional study conducted in the Department of Radiology, CMH, Rawalpindi from 25-08-2017 to 24-02-2018. The estimated sample size is 203 while taking prevalence of endometrial hyperplasia as 47%<sup>4</sup>, Sensitivity as 55.6%, Specificity as 49.7%, Precision as 10% and confidence level as 95%. Non-probability, Consecutive sampling technique was used.

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**Inclusion Criteria:** Post menopausal females with ages of 45-75 years having AUB.

**Exclusion Criteria:** Patients who have cervical and vaginal pathologies other than endometrial hyperplasia, haemostatic disorders, patients on anticoagulants and those receiving hormone therapies were excluded.

**Data collection:** All post-menopausal women of ages 45-75 years who came in CMH Rawalpindi with primary complaint of AUB were gone through TVS. Endovaginal probe of Toshiba aplo 500 was used. On ultrasound, endometrial thickness was taken and presence of any other uterine or cervical pathology was ruled out. Endometrial biopsy was carried out using hysteroscopy. Final diagnosis was based upon histopathology report. Data was analyzed using SPSS vr 20. It was approved by our Ethical Board

## RESULTS

The detail of results is given in tables 1,2 and 3

Table 1: Age distribution.

Age (years)	n	%age
45-60	99	48.8
61-75	105	51.2
Total	203	100.0

Mean  $\pm$  SD = 61.1 $\pm$ 7.3 years

Table 2: Duration of disease.

Duration of AUB (months)	n	%age
$\leq 5$ months	142	69.9
$> 5$ months	61	30.1
Total	203	100

Mean  $\pm$  SD = 4.67  $\pm$  1.53months.

Table-3: TVS in Post-menopause women taking histopathology as gold standard.

	Positive result on Histopathology	Negative result on Histopathology
ET >4mm on TVS	103(TP)	12(FP)
ET ≤4mm on TVS	04(FN)	84(TN)

Sensitivity: 96.3%, Specificity: 87.5%, PPV= 89.6%, P value 0.01  
NPV=95.5%, Diagnostic Accuracy: 92.1%

## DISCUSSION

In this study, TVS has diagnosis of endometrial hyperplasia in 115(56.7%) cases. Histopathology findings confirmed endometrial hyperplasia in 107(52.7%) cases. In TVS positive patients, 103 were True Positive and 12 were False Positive. Among 88 TVS negative patients, 04 were False Negative whereas 84 were True Negative ( $p=0.01$ ). Overall sensitivity, specificity, PPV, NPV and diagnostic accuracy of TVS in diagnosing endometrial hyperplasia in post-menopause women with AUB taking histopathology as gold standard was 96.3%, 87.5%, 89.6%, 95.5% and 92.1% respectively.

In one study, the accuracy, sensitivity, specificity, PPV, and NPV are 88.3%, 90.7%, 84%, 97.7%, and 84% respectively in post menopause women<sup>6</sup> while in other study, sensitivity and specificity are up to 55.6% and 49.7% respectively<sup>3</sup>.

Dijkhuizen et al<sup>4</sup> reported similar sensitivity (88%) but lower specificity for diagnosing endometrial abnormalities in pre menopause women. Unlike these findings, Mukhopadhyay et al<sup>5</sup> observed lower sensitivity (43.8%) and higher specificity (95.7%) with PPV and NPV of 70% and 88%, respectively. This difference may be due to the difference in the population selected in each study and also due to difference in the years of the studies.

Bazot et al. studied TVS findings in 129 cases who were candidates for hysterectomy operation. It is found that the sensitivity, specificity, positive and negative predictive values of TVS are 100%, 83.3%, 40% and 82.9% respectively and diagnostic accuracy of TVS was 91.3%<sup>6</sup>.

In another study<sup>7</sup> regarding TVS, the sensitivity, specificity, PPV, NPV and DA in all EH cases were 77%, 94.6%, 84.4%, 91.6% & 89.8% respectively. In premenopausal cases, the results were, 67.4%, 94.3%, 80.6%, 89.2% & 87.3% and in postmenopausal cases, 89.1%, 95.2%, 89.3%, 95.2% & 93.3%, respectively.

Tsuda et al<sup>8</sup> reported a sensitivity of 97.4%, specificity 75.7%, PPV 23.8% & NPV 99.7% for detection of endometrial pathology in postmenopausal cases while Sousa et al. 2001<sup>9</sup> reported, 77.8%, 93.3%, 88.9% & 98.3% respectively. TVS is effective method for the evaluation of endometrium in perimenopausal and postmenopausal women.

## CONCLUSION

Diagnostic accuracy of TVS in diagnosing endometrial hyperplasia in post-menopausal women with AUB is high and has improved our ability to diagnose endometrial hyperplasia in post-menopause women with abnormal uterine bleeding.

**Conflict of interest:** None

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