



Comparative Study of Transvaginal Sonography and Hysteroscopy with Histopathological Findings in Diagnosing Abnormal Uterine Bleeding in Perimenopausal Women at Tertiary Care Center

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KEYWORDS

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ABSTRACT:

Background- Abnormal uterine bleeding (AUB) is change in frequency of menses, duration of flow or amount of blood loss. Abnormal uterine bleeding is the most common gynecological problems that many factors are involved in its creation.

Aim and objectives- To determine the diagnostic efficacy of Transvaginal sonography (TVS) compare with Hysteroscopy by correlating the reports with histopathological examination.

Material and Methods- This is a prospective comparative study carried out on 52 patients of age group 40-55 years with complaint of perimenopausal bleeding attending Gynaecology OPD at Mahatma Gandhi hospital and Medical College, Sitapura, Jaipur.

Results- Mean age of the patients is 44.5±5.36 years. The most common bleeding pattern seen is heavy menstrual bleeding (50%). The most common abnormal finding seen is thickened endometrium on TVS (38%), on hysteroscopy (27%) and on histopathology (65%).

Introduction:

World Health Organization (WHO) defines perimenopause as 2 to 8 years of the time period preceding menopause and the 1-year post final menses.¹ In perimenopausal women, AUB is diagnosed when there is a substantial change in frequency, duration or amount of bleeding during or between periods. The percentage goes to almost 69% in a given age group.^{2,3} AUB is defined as 'bleeding from the uterine corpus that is abnormal in volume, regularity and/or timing that has been present for the majority of the last 6 months.'¹ AUB was redefined by Federation of International Gynaecology and Obstetrics (FIGO) in 2009 by the FIGO Menstrual Disorders Group (FMDG).^{4,5} This condition has enormous consequences with regard to social life, morbidity and clinical workload.^{6,7}

The various causes of AUB can range from endometrial polyp, leiomyoma, adenomyosis, endometrial hyperplasia, ovulatory dysfunction, and endometrial carcinoma. Ultrasonography, hysteroscopy, and dilatation and curettage (D and C) are the traditional diagnostic modalities.⁸ Most of these abnormalities are related to endometrial cavity lesions. For the evaluation of AUB, TVS is a main diagnostic modality as the initial step.⁹ Almost in one-sixth of these perimenopausal patients, endometrial lesions are missed or are not diagnosed when TVS is used alone. With recent advances in minimally invasive gynecology, hysteroscopy is an emerging tool and recommended to evaluate the endometrium in perimenopausal women with abnormal bleeding further when ultrasound is normal.^{10,11}

Transvaginal sonography is preferred over biopsy of women with vaginal bleeding because it is a less



invasive procedure, generally painless, has no complications¹²

Aim and Objectives:

To compare and determine the diagnostic efficacy of Transvaginal sonography (TVS) with Hysteroscopy by correlating the reports with histopathological examination. To assess sensitivity and specificity of endometrial lesion by Transvaginal sonography and Hysteroscopy. To compare sensitivity of endometrial lesion by transvaginal sonography and hysteroscopy with histopathology as a standard final diagnosis.

Materials and Methods:

Prospective comparative study done at Mahatma Gandhi Medical College and Hospitals, Obstetrics and Gynaecology department for a duration of 1 year (August 2022 - July 2023) in 52 perimenopausal women with AUB.

Inclusion Criteria: Women with abnormal uterine bleeding such as heavy menstrual bleeding, intermenstrual bleeding, irregular and continuous bleeding related to uterine causes.

Perimenopausal women (40-55 years).

Exclusion Criteria: Pregnant women, Coagulation disorders, Vaginal, vulval or cervical causes of bleeding.

Methods: Women ≥ 40 years with abnormal uterine bleeding. Informed written consent obtained from all participants who met inclusion and exclusion criteria.

Evaluation: Detailed medical history, Comprehensive clinical examination was conducted. Laboratory Investigations: Routine blood investigations, Imaging: Transvaginal ultrasound (TVS) using a 7.5MHz probe to assess endometrial thickness and to identify any uterine or adnexal pathology.

Diagnostic Procedures: All patients underwent diagnostic hysteroscopy (2.9mm) under short GA and findings carefully documented: Classification of endometrial appearance as proliferative, secretory, hyperplastic or other abnormalities such as submucous fibroids, polyps, or areas suggestive of malignancy.

Biopsy: Endometrial biopsy was obtained through hysteroscopic grasper at end of procedure.

Results:

Table 1: Age wise distribution-

Age	No. of patients	Percentage (%)
40-44 years	25	48%
45-49 years	20	38%
50-55 years	7	14%
Total	52	100%

Table 2: Parity wise distribution

Parity	No. of cases	Percentage (%)
Nulliparous	2	4%
Multiparous	50	96%

Table 3: Symptoms wise distribution

Bleeding pattern	No. of patients	Percentage (%)
Regular, Heavy bleeding	26	50%
Regular, Frequent, heavy bleeding	16	31%
Intermenstrual bleeding	8	15%
Irregular, heavy bleeding	2	4%
Total	52	100%

**Table 4:** Distribution according to Trans-vaginal ultrasonography findings

Endometrial finding on TVS	No. of cases	Percentage (%)
Thickened endometrium	14	27%
Endometrial polyp	7	13%
Submucous fibroids	4	8%
Adenomyosis	2	4%
No abnormally detected	25	48%
Total	52	100%

Table 5: Distribution of cases according to Hysteroscopic findings

Endometrial findings on hysteroscopy	No. of patients	Percentage (%)
Thickened endometrium	12	23%
Endometrial polyp	8	15%
Submucous fibroids	4	8%
No abnormally detected	28	54%
Total	52	100%

Table 6: Sensitivity, Specificity, PPV, NPV of TVS

	Sensitivity	Specificity	PPV	NPV
Normal	83.33	82.14	80	85.18
Endometrial Hyperplasia	84.61	92.30	78	94.73
Endometrial polyp	62.5	95.45	71.42	93.33
Adenomyosis	33.33	97.95	50	96
Sub mucosal fibroid	75	97.91	75	97.91

Table 7: Sensitivity, Specificity, PPV, NPV of Hysteroscopy

	Sensitivity	Specificity	PPV	NPV
Normal	91.66	78.57	78	91.66
Endometrial Hyperplasia	76.92	94.87	83.33	92.5
Endometrial polyp	100	100	100	100
Sub mucosal fibroid	100	100	100	100

**Discussion:**

This study conducted at obstetrics and gynaecology department, MGMCH, Jaipur in 52 perimenopausal women. In our study maximum cases of AUB found in age group 40-44 years (48%), which correlate with study conducted by Gadge A et.al³ 40-44 years (45%). In this study observed majority of cases in multiparous women 96%, similar to Audimulapu S et.al¹³ and Jonathan Arnold et.al¹⁴ 94% and 90%, respectively. Out of all the 52 patients with AUB, Most common clinical presentation was heavy menstrual bleeding (50%), which was comparable with study by Saroj A. Bolde et.al¹⁵ 47% and Gadge A et.al³ (44%). In present study most common abnormality found on TVS was endometrial hyperplasia \approx 10-14 mm in 27%, similar to study conducted by Audimulapu S et.al¹³ 30% and Slobada L et.al¹⁶ 23%. Our study observed sensitivity, specificity, PPV and NPV for diagnosis of endometrial hyperplasia on TVS are 84.61%, 92.3%, 78% and 94.73%, respectively, which correlate with findings of Shokouhi B¹⁶ 90.75%, 84%, 97.7% and 84%, respectively. The present study showed 76.92% sensitivity, 94.87% specificity, 83.33% PPV and 92.5% NPV for diagnosis of endometrial hyperplasia on Hysteroscopy, similar to study by Sheetal et.al¹⁸ 75%, 92.5%, 71.4% and 93.6%, respectively. Our study found normal endometrial findings in 48% on , 54% and 46% on TVS, Hysteroscopy and histopathology, respectively and abnormal endometrial pathology in 52%, 46% and 54% on TVS, hysteroscopy and histopathology respectively. Out of all abnormal endometrial pathology other than endometrial hyperplasia polyps and submucosal fibroids seen in 13% and 8% on TVS, 15% and 8% on hysteroscopy, 15% and 8% on histopathology in correlation with study by Veena B.T et.al.¹⁹

Conclusion-

TVS is a good initial diagnostic modality but hysteroscopy is option for assessment of AUB, it allows direct visualization of the cavity and also sampling for histopathological examination. The results showed that hysteroscopy is an important tool in the diagnosis of various endometrial and intrauterine lesions, with high sensitivity and specificity, and low false negativity. Hysteroscopy examination is superior to transvaginal sonography but should not replace histological examination.

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