



ROLE OF HYSTEROSCOPY AND TRANSVAGINAL SONOGRAPHY IN DIAGNOSIS OF AUB

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ABSTRACT

Introduction: Abnormal uterine bleeding is defined as any bleeding from the genital tract which is a deviation from the normal menstrual cycle in quantity, frequency or cyclicity. Abnormal uterine bleeding can arise from a bewildering number of sources. (1) The most frequent culprits in this age group include anovulation, polycystic ovary syndrome, structural abnormalities (polyps, fibroids), endometrial hyperplasia, cancer, foreign bodies, pregnancy related complications, disorders of haemostasis, trauma and infection. Annually 5-10% of women of reproductive age seek medical care for AUB, which negatively impacts quality of life. (2) Hence this study was done to see correlation between hysteroscopy and ultrasonography for diagnosis of AUB. **Methods:** This prospective study of comparative study of hysteroscopy with ultrasonography and its correlation with histopathology was conducted among cases of abnormal uterine bleeding women attending gynecological OPD of Muzaffarnagar Medical College, Muzaffarnagar, Uttar Pradesh during December 2019 to July 2021. **Results:** among 100 women with abnormal uterine bleeding attending OPD were included in this study. Out of 100 subjects, maximum cases were from the age group of 40-45 years (54) followed by 45-50 years (35%). Minimum subjects were from the age group of > 50 years (11%). majority of patients 88 (88%) were multiparous and only 12 patients (12%) were nulliparous. On USG, 57% and 43% of the subjects had normal and abnormal pathology. As per USG; adenomyosis, polyp, endometrial hyperplasia, endometritis and fibroid was revealed among 6%, 6%, 30%, 1% and 7% of the subjects respectively. On hysteroscopy, 46% and 54% of the subjects had normal and abnormal pathology. Among the subjects without pathology; proliferative and secretory endometrium was noted among 35 and 11 subjects respectively. As per hysteroscopy; submucous fibroid, endometrial polyp, endometrial hyperplasia, endometritis, endometrial malignancy, intrauterine adhesion and adenomyosis was revealed among 15%, 6%, 18%, 3%, 1%, 1% and 3% of the subjects respectively. **Conclusion:** Sensitivity and specificity of USG considering Hysteroscopy as gold standard was 71.22% and 88.50% respectively.

KEYWORDS :

INTRODUCTION

Abnormal uterine bleeding is defined as any bleeding from the genital tract which is a deviation from the normal menstrual cycle in quantity, frequency or cyclicity. Abnormal uterine bleeding can arise from a bewildering number of sources. (1) The most frequent culprits in this age group include anovulation, polycystic ovary syndrome, structural abnormalities (polyps, fibroids), endometrial hyperplasia, cancer, foreign bodies, pregnancy related complications, disorders of haemostasis, trauma and infection. Annually 5-10% of women of reproductive age seek medical care for AUB, which negatively impacts quality of life. (2) Abnormal uterine bleeding (AUB) in reproductive-age women is common, and leads to one-third of outpatient visits this proportion crosses the two-third threshold in peri or post-menopausal group.

The English terms polymenorrhea, metrorrhagia, menorrhagia, menometrorrhagia and hypermenorrhea, are extensively used to describe different abnormalities of menstrual bleeding.

It has been observed over the decades that inconsistencies in nomenclature and lack of standardized methods of classification have hampered investigation and management of AUB. In an effort to bring improvement, **Federation of International Gynecology and Obstetrics (FIGO)** have approved a classification system for abnormal uterine bleeding. It classifies the causes into two categories structural and functional. It is described by the acronym **PALM – COEIN**.³²

PALM (structural): P- Polyp, A-Adenomyosis, L-Leiomyoma, M-Malignancy.

COEIN (functional): C-Coagulopathies, O-Ovulatory dysfunction, E-Endometrial, I-Iatrogenic, N-Not yet classified.

A careful history and physical examination are the most useful tools for starting the evaluation of AUB. Infrequent, irregular, unpredictable menstrual bleeding that varies in amount, duration and character and is not preceded by any recognizable or consistent pattern of premenstrual molimina and unaccompanied by any visible or palpable genital tract abnormality, can be diagnosed as anovulatory bleeding. Conversely, regular monthly periods that are heavy or prolonged are more likely related to anatomical lesion or a bleeding disorder than to anovulation.⁴

There are a variety of available methods for evaluation of the uterine cavity that have developed considerably over the last few years. These are:

- Uterine curettage and Dilatation** has been, for decades, the universal procedure for diagnosis of intrauterine diseases. Although simpler than the former, it is an invasive procedure as well. It has the disadvantage of being blind, therefore, the surgeon is not able to remove or even detect the entire lesion.⁵
- Transvaginal ultrasonography** is currently used as a method of choice for investigation of the endometrium, either in cases of genital bleeding, or for screening in asymptomatic women, especially in the postmenopause as it is a non-invasive method, well tolerated by patients and it allows immediate interpretation of the observed images.
- On the other hand, **Hysteroscopy** has the advantage of providing a direct visualization of the uterine cavity and the endometrium, allowing guided biopsy of any suspected lesion. However, it is an invasive procedure, relatively expensive, which demands specific equipment and trained staff and even in big cities it is not available for the entire population.⁹ **Hysteroscopy** involves direct visualization of the uterine cavity and biopsy can be taken

under direct visualization.

- d. It is well accepted that various disease pathology can be detected accurately by histopathological examination (HPE). Endometrial histopathology is recommended in AUB. In women >40years and in women <40years who have high risk factors for carcinoma endometrium. The more accurate the diagnosis of endometrial pathology better the chances for alternative treatment and hysterectomies could be avoided. The accuracy or the superiority of the relatively non invasive methods like TVS, Hysteroscopy and SIS over histopathology have not been clearly established. 8

AIM AND OBJECTIVES

To evaluate AUB by transvaginalsonography and hysteroscopy in reproductive and premenopausal women attending Gynae OPD of MMCH during a period of 2019-2022.

MATERIAL AND METHOD

This prospective study of comparative study of hysteroscopy with ultrasonography and its correlation with histopathology was conducted among cases of abnormal uterine bleedingwomen attending gynecological OPD of Muzaffarnagar Medical College, Muzaffarnagar, Uttar Pradesh during December 2019 to July 2021. The study protocol for all procedures was approved by the Institutional Review Board for Ethical Clearance of the institution and was performed in accordance with the Code of Ethics of the World Medical Association according to the Declaration of Helsinki of 1975, as revised in 2000. All patients were asked to sign a written consent form prior to commencement of the study.

Results

Table 1: Distribution of women according to age

Age Group (in years)	N	%
40-45	54	54
45-50	35	35
>50	11	11
Total	100	100

Out of 100 subjects, maximum cases were from the age group of 40-45 years (54%) followed by 45-50 years (35%). Minimum subjects were from the age group of >50 years (11%) as shown in table 1.

Table 2: Distribution of women according to parity

Parity	N	%
Nulliparous	12	12
Multiparous	88	88
Total	100	100

Out of 100 patients presenting with AUB included in our study, majority of patients 88 (88%) were multiparous and only 12 patients (12%) were nulliparous (table 2)

Table 3: Distribution of women according to education

Education	N	%
Illiterate	42	42
Primary	14	14
Secondary	17	17
Graduate/Postgraduate	27	27
Total	100	100

In this study, 42% of the subjects were illiterate. 27% of the subjects had studied upto graduate/postgraduate level (table 3)

Table 4: Distribution of women according to clinical presentation

Clinical Presentation	N	%
Heavy Menstrual Bleeding	41	41
Oligomenorrhoea	19	19

Polymenorrhoea	26	26
Post Menopause Bleeding	14	14
Total	100	100

Most common clinical complaint was heavy menstrual bleeding (41%) followed by polymenorrhoea (26%) and oligomenorrhoea (19%) while least common clinical complaint was post menopause bleeding (14%) as shown in table 4.

Table 5: Findings on USG

Findings	N	%
Normal	50	57
Adenomyosis	6	6
Polyp	6	6
Endometrial Hyperplasia	30	30
Endometritis	1	1
Fibroid	7	7

On USG, 57% and 43% of the subjects had normal and abnormal pathology. As per USG; adenomyosis, polyp, endometrial hyperplasia, endometritis and fibroid was revealed among 6%, 6%, 30%, 1%and 7% of the subjects respectively (table 5)

Table 6: Thickness of endometrium on TVS

Thickness	N	%
<4 mm	24	24
4-8 mm	45	45
8-15 mm	19	19
>15 mm	12	12

According to USG, endometrium thickness <4 mm, 4-8 mm, 8-15 mm and >15 mm was found in 24%, 45%, 19% and 12% of the subjects respectively (table 6)

Table 7: Findings on Hysteroscopy

Findings	N	%
Normal	46	46
Proliferation	35	35
Secretory	11	11
Abnormal	54	54
Submucos Fibroid	15	15
Endometrial Polyp	6	6
Endometrial Hyperplasia	18	18
Endometrial Polyp and Hyperplasia	7	7
Endometritis	3	3
Irregular growth s/o Malignancy	1	1
Intrauterine Adhesion	1	1
Adenomyosis	3	3

On hysteroscopy, 46% and 54% of the subjects had normal and abnormal pathology. Among the subjects without pathology; proliferative and secretory endometrium was noted among 35 and 11 subjects respectively. As per hysteroscopy; submucous fibroid, endometrial polyp, endometrial hyperplasia, endometritis, endometrial malignancy, intrauterine adhesion and adenomyosis was revealed among 15%, 6%, 18%, 3%, 1%, 1% and 3% of the subjects respectively (table 10, graph 7).

Table 8: Diagnostic efficacy of USG considering Hysteroscopy as gold standard

USG	Value
True Positive	48
False Negative	17
False Positive	2
True Negative	33
Sensitivity	71.22%
Specificity	88.50%
p value	<0.01

Sensitivity and specificity of USG considering Hysteroscopy as gold standard was 71.22% and 88.50% respectively (table 8)

This prospective study was conducted among women attending gynecological OPD of Muzaffarnagar Medical College, Muzaffarnagar, Uttar Pradesh among 100 perimenopausal women with abnormal uterine bleeding attending OPD were included in this study. In the present study, hysteroscopy was performed using a hysteroscope and dilatation and curettage was done, endometrial tissue was obtained and sent for histopathology. The findings of the study are summarized as below:

- In present study, maximum women belonged to the age group 40-45 years. 54 patients (54%) belong to this age group. 35 patients (35%) belong to age group between 45-50 years. Only 11 patients (11%) belong to age group more than 50 years.
- Majority of patients 88 (88%) were multiparous and only 12 patients (12%) were nulliparous.
- 42% of the subjects were illiterate. 27% of the subjects had studied upto graduate/postgraduate level.
- Majority of women (41%) presented with heavy menstrual bleeding. The second commonest presenting complaint was polymenorrhoea (24%).
- In our study all women had undergone ultrasonography. Out of 100 women, 57% and 43% of the subjects had normal and abnormal pathology. As per USG; adenomyosis, polyp, endometrial hyperplasia and endometrial carcinoma and endometritis was revealed among 6%, 6%, 29%, 1%, and 1% of the subjects respectively.
- In our study hysteroscopy was performed in all 100 women with AUB out of 46% and 54% of the subjects had normal and abnormal pathology. Among the subjects without pathology; proliferative and secretory endometrium was noted among 35 and 11 subjects respectively. As per hysteroscopy; submucous fibroid, endometrial polyp, endometrial hyperplasia, endometritis, endometrial malignancy, intrauterine adhesion and adenomyosis was revealed among 15%, 6%, 18%, 3%, 1%, 1% and 3% of the subjects respectively
- Out of 4 malignant cases, US showed endometrial thickness > 15 mm in a two cases while in the rest two, it showed endometrial thickness upto 10 mm. According to Hysteroscopy, 2 cases were having Endometrial Hyperplasia, while the rest one case showed Proliferative Endometrium and other revealed Irregular polypoid surface with areas of necrosis in our study.
- Sensitivity and specificity of USG considering Hysteroscopy as gold standard was 71.22% and 88.50% respectively.

Abnormal uterine bleeding is a symptom and not a disease. It is a common problem of perimenopausal and postmenopausal women. TVS is a simple, non-invasive and higher acceptable technique to the patient. It can identify women with perimenopausal bleeding in which the likelihood of endometrial pathology is high and in whom tissue sampling should be performed.

So we concluded that TVS should be used as routine first step diagnostic technique, but it may miss some small lesions, so hysteroscopy should be considered as a standard modality to evaluation of abnormal uterine bleeding in perimenopausal and postmenopausal bleeding.

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