



COMPARATIVE DIAGNOSTIC EFFICACY OF TRANSVAGINAL-ULTRASONOGRAPHY, HYSTEROSCOPY AND HISTOPATHOLOGICAL EXAMINATION IN CASES OF ABNORMAL UTERINE BLEEDING

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ABSTRACT

Introduction: Abnormal uterine bleeding (AUB) is one of the leading causes for seeking gynecological advice. AUB may be defined as any variation from the normal menstrual cycle and includes change in regularity or frequency of menses, in the duration of flow, or in the amount of blood loss. Accordingly, AUB is divided into heavy menstrual bleeding (HMB), frequent/infrequent, intermenstrual, postcoital, pre/postmenstrual bleeding, prolonged/shortened periods, acute and chronic AUB. **Methods:** The prospective and comparative study was conducted in the department of Gynecology and Obstetrics in tertiary care center over six months. Abnormal uterine bleeding is the deviation from normal menstrual cycle pattern and includes full range of symptoms. It is one of the most common complaints that brings a woman to the gynecologist and there are multiple causes behind the abnormal uterine bleeding. **Results:** The most common AUB was Menorrhagia (42%) followed by Metrorrhagia (19%), Menometrorrhagia (15%), Polymenorrhagia (2%), Polymenorrhagia (7%), Oligomenorrhagia (7%), Post menopausal bleeding (13%), and Post coital bleeding (5%). The most common TVS finding was normal size uterus (61%) followed by bulky uterus (39%), endometrial hyperplasia (46%), polyps (34%) and fibroid (31%). Most common endometrial pattern on histopathology was proliferative endometrium, seen in 62 % followed by endometrial hyperplasia seen in 30 %. Polyp was diagnosed in 73 %. **Conclusion:** The initial investigation for all AUB patients must be transvaginal ultrasonography. Transvaginal sonography is simple, noninvasive, more acceptable and cost-effective. Hysteroscopy (HS) is an effective procedure having both diagnostic and therapeutic applications.

KEYWORDS : AUB, USD, HMB

INTRODUCTION

Abnormal uterine bleeding (AUB) is one of the leading causes for seeking gynecological advice. AUB may be defined as any variation from the normal menstrual cycle and includes change in regularity or frequency of menses, in the duration of flow, or in the amount of blood loss. Accordingly, AUB is divided into heavy menstrual bleeding (HMB), frequent/infrequent, intermenstrual, postcoital, pre/postmenstrual bleeding, prolonged/shortened periods, acute and chronic AUB.¹ The PALMCOEIN (polyp; adenomyosis; leiomyoma; malignancy and hyperplasia; coagulopathy; ovulatory dysfunction; endometrial; iatrogenic and not yet classified) classification system for AUB has been approved by International Federation of Gynaecology and Obstetrics (FIGO).² In recent times, several methods including TVS, saline infusion sonography and hysteroscopy, have been developed to assess the uterine cavity, with their own advantages and disadvantages.

TVS is a rapid, non-invasive and cost-effective method which assesses structural uterine pathologies. TVS detects fibroids, adenomyosis, endometrial thickness and morphology as well as regularity of endo-myometrial border.³ Office hysteroscopy (OH) on the other hand, allows direct visualization of the uterine cavity and guides sampling of any suspected lesion and has an established diagnostic value for many uterine conditions. Hysteroscopy is highly sensitive and specific for endometrial polyps and submucous myomas. However, hysteroscopy is not as cost-effective and convenient as ultrasonography, as the latter is associated with relatively less patient discomfort and does not necessitate anaesthesia.⁴ In the present context of increasing cost awareness and an ever-increasing litigious environment, a balance has to be achieved between the practice of "blanket medicine" aiming at performance of all investigations and a condition-based approach.⁵ The present study was aimed to evaluate comparative diagnostic efficacy of transvaginal-ultrasonography, hysteroscopy and histopathological examination in cases of abnormal uterine bleeding.

METHODS

The prospective and comparative study was conducted in the department of Gynecology and Obstetrics in tertiary care

center over six months. Abnormal uterine bleeding is the deviation from normal menstrual cycle pattern and includes full range of symptoms. It is one of the most common complaints that brings a woman to the gynecologist and there are multiple causes behind the abnormal uterine bleeding. Ultrasonography and inpatient hysteroscopy are the two methods used to evaluate the causes of AUB. In addition, hysteroscopy also provides an opportunity to treat few pathologies at the same sitting. In this prospective study we compared TVS and hysteroscopy with histopathology reports in 100 cases of abnormal uterine bleeding.

Data were collected using a pre-designed semi-structured study proforma. A patient information sheet will be provided to every eligible subject for the study and thereafter written informed consent will be taken from the participants in this study. The details of all the participants will be recorded in the standardized format. All the women will undergo the history and clinical examination and various investigation will be performed.

Statistical Analysis

The data were analyzed by using SPSS version 20. The data was analyzed by simple proportions and percentages. The association and relation between different parameters were analyzed using chi-square test.

RESULTS

Baseline Characteristics

The mean age of the patients was 32.44 ± 5.89 years. It was observed that most of the patients, 37%, were in the age group of 31 to 40 years and 31% in the age group of 41-50. 53% of patients with AUB had regular cycles in the past, while remaining had history of irregular menstrual pattern in the past. The most common parity was multiparous (49%) followed by nulligravida (27%), and primiparous (24%).

Abnormal uterine bleeding

Table 2 shows that the most common AUB was Menorrhagia (42%) followed by Metrorrhagia (19%), Menometrorrhagia (15%), Polymenorrhagia (2%), Polymenorrhagia (7%), Oligomenorrhagia (7%), Post menopausal bleeding (13%), and Post coital bleeding (5%).

Findings of transvaginal ultrasound (TVS)

Table 3 shows that the most common TVS finding was normal size uterus (61%) followed by bulky uterus (39%), endometrial hyperplasia (46%), polyps (34%) and fibroid (31%).

Finding of Histopathology

Most common endometrial pattern on histopathology was proliferative endometrium, seen in 62 % followed by endometrial hyperplasia seen in 30 %. Polyp was diagnosed in 73 %.

DISCUSSION

Abnormal uterine bleeding is the deviation from normal menstrual cycle pattern and includes full range of symptoms. It is one of the most common complaints that brings a woman to the gynecologist and there are multiple causes behind the abnormal uterine bleeding. Ultrasonography and inpatient hysteroscopy are the two methods used to evaluate the causes of AUB. In addition, hysteroscopy also provides an opportunity to treat few pathologies at the same sitting. In this prospective study we compared TVS and hysteroscopy with histopathology reports in 100 cases of abnormal uterine bleeding.

The mean age of the patients was 32.44±5.89 years. It was observed that most of the patients, 37%, were in the age group of 31 to 40 years and 31% in the age group of 41-50. 53% of patients with AUB had regular cycles in the past, while remaining had history of irregular menstrual pattern in the past. The most common parity was multiparous (49%) followed by nulligravida (27%), and primiparous (24%). In a study by Goyal et al, the age of our patients ranged from 19 to 55 years but maximum number of patients who developed menstrual abnormalities belonged to 41–50-year age group (n = 51). 10 patients were above 51 years of age and 10 patients below 30 years. The parity distribution of the subjects ranged between 0 and 5. Fifty-one patients in our study were para 2, which is in keeping with the modern trends of family size. There were two nulliparas and six with parity four or above.⁶

The most common AUB was Menorrhagia (42%) followed by Metrorrhagia (19%), Menometrorrhagia (15%), Polymenorrhagia (2%), Polymenorrhagia (7%), Oligomenorrhagia (7%), Post menopausal bleeding (13%), and post coital bleeding (5%). In a study by Goyal et al Menorrhagia was the most common complaint amongst our patients (n = 58) followed by metrorrhagia (n = 32). Menometrorrhagia and continuous bleeding for >21 days were less common symptoms seen in 7 and 3 women respectively.⁶

The most common TVS finding was normal size uterus (61%) followed by bulky uterus (39%), endometrial hyperplasia (46%), polyps (34%) and fibroid (31%). Most common endometrial pattern on histopathology was proliferative endometrium, seen in 62 % followed by endometrial hyperplasia seen in 30 %. Polyp was diagnosed in 73 %. In a study by Reddy et al OH findings in correlation with HPE where atrophic endometrium showed 100% sensitivity and accuracy while hyperplasia, polyp, secretory and proliferative endometrium findings were diagnosed with 100%, 46.15%, 84.62% and 70.73% sensitivity respectively. TVS findings in correlation with HPE where atrophic endometrium showed 100% sensitivity and accuracy, while hyperplasia, polyp, secretory and proliferative findings were diagnosed with 42.86%, 45.45%, 61.54% and 82.93% sensitivity respectively. The accuracy of diagnosing polyp, hyperplastic endometrium, secretory and proliferative endometrium were 90.67%, 89.33%, 92% and 76% respectively with a p value of <0.001.⁷ In a study by Upadhyay et al USG detected 2 patients with fibroid out of which 1 had normal finding and 1 had polyp on hysteroscopy and histopathology. USG detected 7 patients with adenomyosis out of which 4 had normal finding and 1

had fibroid and 2 had atrophic endometrium on hysteroscopy and histopathology.⁸

CONCLUSION

We conclude that the initial investigation for all AUB patients must be transvaginal ultrasonography. Transvaginal sonography is simple, noninvasive, more acceptable and cost-effective. Hysteroscopy (HS) is an effective procedure having both diagnostic and therapeutic applications. Hysteroscopy offers an invaluable advantage of direct visualization of any abnormality within the uterine cavity. Hysteroscopic-guided biopsy is considered as the “new gold standard” in evaluating a case of abnormal uterine bleeding.

Table 1: Baseline Characteristics

Baseline Characteristics	Frequency (n=100)	Percentage (%)
Age (Years)		
≤20	1	1%
21-30	16	16%
31-40	37	37%
41-50	31	31%
51-60	6	6%
61-70	7	7%
>70	2	2%
Past Menstrual Cycle		
Regular	53	53%
Irregular	47	47%
Parity		
Nulligravida	27	27%
Primiparous	24	24%
Multiparous	49	49%

Table 2: AUB

AUB	Frequency (n=100)	Percentage (%)
Menorrhagia	42	42%
Metrorrhagia	19	19%
Menometrorrhagia	15	15%
Polymenorrhagia	2	2%
Polymenorrhagia	7	7%
Oligomenorrhagia	7	7%
Hypomenorrhagia	0	0%
Post menopausal bleeding	13	13%
Post coital bleeding	5	5%

Table 3: Findings of transvaginal ultrasound (TVS)

Finding of TVS	Frequency (n=100)	Percentage (%)
Normal size uterus	61	61%
Bulky uterus	39	39%
Endometrial hyperplasia	46	46%
Polyps	34	34%
Fibroid	31	31%

Table 4: Finding of Histopathology

Finding of Histopathology	Frequency (n=100)	Percentage (%)
Proliferative	62	62%
Secretory	22	22%
Hyperplastic endometrium	30	30%
Atrophic endometrium	3	3%
Polyp	73	73%
Sub-mucosal leiomyoma	1	1%
Others	2	2%

REFERENCES

1. Mahapatra. Clinicopathological evaluation of abnormal uterine bleeding. Accessed December 5, 2023. <https://www.jhrr.org/article.asp?issn=2394-2010;year=2015;volume=2;issue=2;spage=45;epage=49;aurlast=Mahapatra>
2. Singh A, Anant M. The evaluative role of diagnostic hysteroscopy and ultrasonography in abnormal uterine bleeding. *Int J Res Med Sci.* 2017;5(3):1002-1006. doi:10.18203/2320-6012.ijrms20170651
3. Krishnamoorthy N, N FS. Role of transvaginal sonography and hysteroscopy in abnormal uterine bleeding: does the diagnostic yield increase by combining transvaginal sonography, hysteroscopy and biopsy? *Int J Reprod Contracept Obstet Gynecol.* 2014;3(4):919-923.
4. Bosteels J, van Wessel S, Weyers S, et al. Hysteroscopy for treating subfertility associated with suspected major uterine cavity abnormalities. *Cochrane Database Syst Rev.* 2018;12(12):CD009461. doi:10.1002/14651858.Cd009461.pub4
5. Pal L, Lapensee L, Toth TL, Isaacson KB. Comparison of Office Hysteroscopy, Transvaginal Ultrasonography and Endometrial Biopsy in Evaluation of Abnormal Uterine Bleeding. *JSLs.* 1997;1(2):125-130.
6. Goyal BK, Gaur I, Sharma S, Saha A, Das NK. Transvaginal sonography versus hysteroscopy in evaluation of abnormal uterine bleeding. *Med J Armed Forces India.* 2015;71(2):120. doi:10.1016/j.mjafi.2014.12.001
7. R SRM, Subhashchandra MR, Patil NB, Yaliwal RG. The efficacy of transvaginal ultrasonography and office hysteroscopy in evaluation of abnormal uterine bleeding. *Int J Reprod Contracept Obstet Gynecol.* 2023;12(7):2036-2040. doi:10.18203/2320-1770.ijrcog20231787
8. Upadhyay A, Tyagi M, Gupta S, Bansal R, Varma Y. Comparative study of hysteroscopy with ultrasonography and its correlation with histopathology in cases of abnormal uterine bleeding in perimenopausal women. *Int J Reprod Contracept Obstet Gynecol.* 2022;11(3):791-797. doi:10.18203/2320-1770.ijrcog20220558