

## A Retrospective Study of Endometrial Pattern and it's Clinico-Pathological Correlation in Abnormal Uterine Bleeding (AUB)

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Received: 15-05-2022 / Revised: 25-06-2022 / Accepted: 10-07-2022

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Conflict of interest: Nil

### Abstract

**Aim:** To evaluate clinically gynecological causes of abnormal uterine bleeding and to study endometrial pattern in AUB.

**Material & Methods:** This is a retrospective study conducted at the Department of Obstetrics & Gynecology, Bhagwan Mahavir Institute of Medical Sciences, Pawapuri, Nalanda, Bihar, India. Records from history sheets and files of patients admitted in gynaec ward for hysterectomy for AUB over a period of one year were collected.

**Results:** A total of 100 cases were selected for this study. The majority of the women 51% presented with menorrhagia. Histopathological reports revealed that endometrium was proliferative in 52% and secretory in 20%.

**Conclusion:** Abnormal uterine bleeding predominantly affects women of perimenopausal age group which is alarming and needs thorough evaluation as it could be the only clinical manifestation of endometrial cancer.

**Keywords:** Abnormal uterine bleeding, Histopathology, Menorrhagia

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### Introduction

Abnormal uterine bleeding (AUB) is a common problem affecting the women of reproductive age group and may also have a significant impact on their physical, social, and emotional aspects directly affecting their quality of life. [1] AUB is a bleeding pattern differing from normal menstrual pattern or after menopause in frequency, duration, and amount of blood flow. [2]

According to the International Federation of Gynecology and Obstetrics (FIGO), acute AUB could be classified as “an episode of bleeding in a woman of reproductive age, who is not pregnant, that

is of sufficient quantity to require immediate intervention to prevent further blood loss.” In addition, chronic AUB is “bleeding from the uterine corpus that is abnormal in duration, volume, and/ or frequency and has been present for the majority of the last 6 months.” [3] In the premenopausal period, it may cause anemia, and in the postmenopausal period, it may raise the suspicion of malignancy. [4]

The cause of AUB varies according to age, endometrial response to hormones and their variations, and other structural lesions [5]. AUB can be due to functional

disturbances referred to as dysfunctional uterine bleeding and organic pathologic conditions, such as chronic endometritis, endometrial polyps, endometrial hyperplasia, submucosal leiomyoma, or endometrial neoplasm [6].

Currently, the most commonly used technologies for outpatient evaluation of the endometrium are biopsy, hysteroscopy, and Trans Vaginal Ultrasound (TVS). Endometrial biopsy by Dilatation and Curettage or office endometrial biopsy is considered the gold standard in AUB [7].

According to the center for disease control and prevention in United States about 5 per 1000 women undergo hysterectomy annually in USA and about 1 in 4 women will have hysterectomy by the age of 60 years [8].

This study is a retrospective study of pattern of uterine pathologies at hysterectomy in order to identify the most common causes of AUB and to correlate them with clinical diagnosis and histopathology.

#### Material & Methods:

This is a retrospective study conducted at the Department of Obstetrics &

Gynecology, Bhagwan Mahavir Institute of Medical Sciences, Pawapuri, Nalanda, Bihar, India. Records from history sheets and files of patients admitted in gynaec ward for hysterectomy for AUB over a period of one year were collected. Women with bleeding due to pregnancy related complications such as abortion, gestational trophoblastic diseases, ectopic pregnancy and clinically diagnosed cases of local lesions like carcinoma cervix were excluded from the study.

Information was collected regarding age, parity, clinical features, menstrual history and pre-op diagnosis/ indications for hysterectomy. Histopathology reports of the same patients were collected from department of pathology and their diagnosis was noted. Data was analyzed by using percentages.

#### Results:

A total of 100 cases were selected for this study. Out of 100 women included in this study 63% women were in the age group of 36 yrs-50 yrs. (perimenopausal) followed by 25% in the age group of 21-35 yrs. and 12% were in the age group beyond 50 yrs. (Table 1).

**Table 1: Patients in different age group**

Age	Number of patients
<20 yrs.	0
21-35 yrs.(Reproduction)	25
36-50 yrs. (Perimenopausal)	63
>51 yrs.	12

Abnormal uterine bleeding was high in parity 34% and grand multipara 23%. This shows incidence of abnormal uterine bleeding increases as the parity increases. (Table 2).

**Table 2: Correlation of parity with AUB**

Parity	Number of cases	Percentage
1	10	8.2%
2	27	25.8%
3	34	34.11%
Grand multipara	23	25.8%

The majority of the women 51% presented with menorrhagia, 24% with metrorrhagia, polymenorrhagia was present in 19% of cases and 6% presented with postmenopausal bleeding (Table 3).

**Table 3: Different bleeding patterns in AUB**

Menorrhagia	51	45.8%
Metrorrhagia	24	28.2%
Polymenorrhagia	19	20%
Postmenopausal	6	5.8%

Clinically 37% were fibroid uterus 41% were diagnosed as DUB. Adenomyosis was diagnosed in 9% of cases, fibroid polyp in 3% of cases. Postmenopausal bleeding was seen in 6% of cases (Table 4).

**Table 4: Clinical diagnosis of AUB**

Diagnosis	Number of cases
Fibroid	37
DUB	41
Adenomyosis	9
Postmenopausal	6
DUB+Fibroid	4
Fibroid polyp	3

Histopathological reports revealed that endometrium was proliferative in 52% and secretory in 20%. Atrophic endometrium was seen in 3% and endometritis in 8%. Adenomyosis was seen in 7% of cases and endometrial hyperplasia was seen in 10% of cases (Table 5).

**Table 5: Endometrial pattern in AUB**

Type	Number of cases
Proliferative Endometrium	52
Secretory Endometrium	20
Endometritis	8
Atrophic Endometrium	3
Adenomyosis	7
Endometrial hyperplasia	10

### Discussion:

Endometrium is a dynamic portion among the female reproductive system which undergoes proliferation and shedding and regenerates as a cyclical process in response to hormonal exposure. [9-10] It changes its function as a physiological phenomenon depending on age and highly influenced by endogenous hormones. This

process continues from menarche to menopause and remains as an indicator of reproductive markers for females. [11-12]

Ovulatory disorders with a share of 26.66% were the most common cause of AUB in the functional category (COEIN) in our study which was similar to findings of Mishra and Sultan. [13] In the later reproductive years, there may be unusual

disturbed ovulations labeled as “luteal out-of-phase” events contributing toward AUB. [14] The deficiency in locally produced vasoconstrictors such as endothelin-1 and prostaglandin F2a and increased vasodilators such as prostaglandin E2 and prostacyclin may lead to heavy menstrual bleeding. However, the tests are not yet available to clinicians for evaluating such abnormalities. [14]

Any change or alterations in bleeding is termed under the broad entity ‘Abnormal uterine bleeding’ which is categorized depending upon duration of bleeding, amount of flow. [15-16] The amount and duration of bleeding is highly variable especially at menarche and perimenopausal as observed in this present study as well. The reason attributed is systemic in hormonal effects. [17] Bleeding occurring after menopause is termed as ‘post-menopausal bleeding’ which is usually Pathognomic and always warrants thorough evaluation both clinically and diagnostic aspects. Evaluation of endometrial pathology is based on clinical, radiological and histopathological analysis. [18-19] Among radiological investigations, ultrasound scan is simple reliable procedure with few limitations. Hence dilatation and curettage followed by histopathological evaluation of biopsy samples is considered as a gold standard mode of evaluation for AUB. [20]

The incidence of endometrial hyperplasia in our study was 9.4% which was almost comparable with study conducted by Dangal *et al.* where it was 10.7%. The incidence of atropic endometrium is only 5.8% and endometritis was 9.4% whereas it was 34.5% & 6% in study conducted by Dangal *et al.* [21]. This is probably because numbers of postmenopausal women in this study group were more. Among the hyperplasia simple hyperplasia was seen in 4.7%, complex hyperplasia without atypia in 3.5% and complex hyperplasia with atypia was seen in 1.17%

cases. Our results were comparable with other authors [22,23].

## Conclusion

Abnormal uterine bleeding predominantly affects women of perimenopausal age group which is alarming and needs thorough evaluation as it could be the only clinical manifestation of endometrial cancer.

## References

1. Whitaker L, Critchley HO. Abnormal uterine bleeding. *Best Pract Res Clin Obstet Gynaecol* 2016; 34:54-65.
2. Jetley S, Rana S, Jairajpuri ZS. Morphological spectrum of endometrial pathology in middle-aged women with atypical uterine bleeding: A study of 219 cases. *J Midlife Health* 2013; 4:216-20.
3. Bahamondes L, Ali M. Recent advances in managing and understanding menstrual disorders. *F1000Prime Rep* 2015; 7:33.
4. Inal ZO, Inal HA, Kucukosmanoglu I, Kucukkendirici H. Assessment of endometrial sampling and histopathological results: Analysis of 4,247 cases. *Eurasian J Med* 2017; 49:44-7.
5. B. S. Vani, R. Vani, and Jijiya Bai P. “Histopathological evaluation of endometrial biopsies and curetting’s in abnormal uterine bleeding.” *Tropical Journal of Pathology and Microbiology*, 2019;5(4):190-97.
6. Sandeepa, Supriya, H. T. Jayaprakash, and M. C. Ashwini. Abnormal uterine bleeding: Histopathological patterns of endometrium in elderly. *Indian Journal of Pathology and Oncology*, 2016;3(4):662-64.
7. Desai, Kairavi, Kiran P. Patole, and Manasi Kathaley. Endometrial evaluation by histopathology in abnormal uterine bleeding in perimenopausal and postmenopausal patients.” *MVP Journal of Medical Science*, 2014;1(2):75-79.

8. Bren L; Alternative to Hysterectomy: new technologies, more options. *FDA Consum.* 2001; 35(6): 23-28.
9. Tavassoli FA, Devilee P. Tumours of the uterine corpus. In: WHO classifications of tumours. Pathology and genetics of tumours of the breast and female genital organs. Lyon France; 2003.
10. Rosai J. Female reproductive system – Uterus – corpus. In: Rosai J Ed. *Rosaiandackerman's surgical pathology* 9th ed. New Delhi: Elsevier, A division of Reed Elsevier; 2004.
11. Awwad JT, Toth TL, Schiff I. Abnormal Uterine Bleeding in the Perimenopause. *Int J Fertil Menopausal Stud.* 1993;38(5):261–269.
12. Speroff L, Fritz MA. Menopause and the peri-menopausal transition. In: *Clinical gynaecologic endocrinology and infertility.* Jaypee Brothers Med Publishers (P) Ltd; 2005: 621–288.
13. Mishra D, Sultan S. FIGO's PALM-COEIN classification of abnormal uterine bleeding: A clinico-histopathological correlation in Indian setting. *J ObstetGynaecol India* 2017; 67:119-25.
14. Munro MG, Broder M, Critchley HO, Matteson K, Haththotuwa R, Fraser IS. An international response to questions about terminologies, investigation, and management of abnormal uterine bleeding: Use of an electronic audience response system. *SeminReprod Med* 2011; 29:436-45.
15. Padubidri VG, Daftary SN. Perimenopause, Menopause, Premature Menopause and Post-menopausal Bleeding. Padubidri VG, Daftary SN, editors. *Howkins and Bourne Shaw's Textbook of Gynaecology.* Elsevier, A division of Reed Elsevier India Private Limited; 2008.
16. Kumar A, Mittal S. Endometrial sampling: How? & why? *Obs Gynae Today.* 2007; 12:284–287.
17. Buckley CH, Fox H. The anatomy and histology of the endometrium. In: *Gottlieb LS, Neville AM, Walker C editors. Biopsy Pathology of the Endometrium.* In: *Br Libr Cataloguing Publication Data;* 1989:11–29.
18. Bharani B, Phatak SR. Feasibility and yield of endometrial biopsy using suction curette device for evaluation of abnormal pre and postmenopausal bleeding. *J Obstet Gynecol India.* 2008;58(4):322–326.
19. Sagar S. Clinicopathological correlation of abnormal uterine bleeding at the age of 45 years and above. *J Obstet GynecolIndia.* 1980; 165-174.
20. Khaleel H. Morgagni's diaphragmatic hernia with Large ASD SECONDUM AND SEVER PHT mimicking a severe congenital heart disease in a newborn and cause delayed diagnosis of Morgagni's diaphragmatic hernia. a case report. *Journal of Medical Research and Health Sciences,* 2022;5(3), 1832–1837.
21. Sloboda L, Molnar E, Popovic Z, Zivkovic S. Analysis of pathohistological results from the uterine mucosa 1965-98 at the gynecology department in Senta. *Med Pregl.* 1999; 52:263–265.
22. Dangal G; A study of endometrium of patients with Abnormal uterine bleeding at Chitwan valley. *Kathmandu University Medical Journal,* 2003; 1(2): 110-112.
23. Layla S, Nabeel S; Histopathological Pattern of Endometrial Sampling Performed for Abnormal uterine bleeding. *Bahrain Medical Bulletin,* 2011; 33(4):1-6.