

# Study of Histopathological Patterns of Endometrium in Abnormal Uterine Bleeding

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## Abstract

**Background:** Abnormal uterine bleeding (AUB) is common gynecological condition and has a major impact on the quality of life. Endometrial sampling is done to evaluate various lesions and rule out malignancy.

**Aims and Objectives:** The aim of the study was to study the histomorphological pattern of endometrium in patients with AUB.

**Materials and Methods:** A prospective observational study done in 1-year duration among 432 women in reproductive and perimenopausal age group attending the gynecology outpatient department at Government Lalla Ded hospital Srinagar with complaints of AUB. A tissue sample was taken either by Pipelles biopsy or Dilatation and curettage, and was examined by pathologist.

**Results:** AUB was mostly seen in the women with age group of 36–45 years with the menorrhagia being the most common complaint. Multiparity was an important risk factor for the development of AUB. On histopathology, normal cyclical endometrium was the most common finding followed by hyperplasia.

**Conclusion:** Histopathological examination is the gold standard investigation for the patients presenting with AUB. Patients with AUB show a varying spectrum of endometrium pattern, ranging from normal cyclical endometrium to carcinomas.

**Key words:** Abnormal uterine bleeding, Endometrial biopsy, Menorrhagia

## INTRODUCTION

Abnormal uterine bleeding (AUB) is a broad term that describes irregularities in the menstrual cycle involving frequency, regularity, duration, and volume of flow outside of pregnancy. Up to one-third of women will experience AUB in their life, with irregularities mostly occurring at menarche and perimenopause. A normal menstrual cycle has a frequency of 24–38 days, lasting 2–7 days, with 5–80 mL of blood loss and with regularity (shortest to longest cycle variation  $\leq 7-9$  days. Variation in any of these four parameters constitute AUB.<sup>[1]</sup>

The cause of AUB varies with age; the first step is to exclude pregnancy in reproductive age group. After excluding pregnancy, a thorough investigations are done using the PALM-COEIN<sup>[2]</sup> classification proposed by The International Federation of Gynaecology and Obstetrics (FIGO) which focuses on causes by structural pathologies PALM (Polyps, Adenomyosis, Leiomyomas, and Malignancy or atypical endometrial hyperplasia) while the COEIN causes are non-structural and are diagnosed by a wider approach of clinical assessment, history, and investigations (Coagulopathies, Ovulatory disorders, Endometrial disorders, Iatrogenic and Not otherwise classified [COEIN]).

Various diagnostic techniques are available for the evaluation of AUB which includes laboratory tests (Complete Blood Count, platelet count and function, Prothrombin Time, activated Partial Thromboplastin Time, Human chorionic gonadotrophin, Thyroid profile, Follicle stimulating hormone, Luteinizing hormone, and Prolactin), imaging studies (pelvic ultrasonography and magnetic

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**Month of Submission :** 05-2023  
**Month of Peer Review :** 06-2023  
**Month of Acceptance :** 06-2023  
**Month of Publishing :** 07-2023

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resonance imaging), and endometrial sampling (Dilatation and Curettage, Endometrial aspiration). Management of AUB is not complete without tissue diagnosis, especially in perimenopausal and postmenopausal women.

FIGO recommends endometrial tissue testing as a first-line management in women of perimenopausal age group who have AUB.<sup>[3]</sup>

**Aim**

The aim of the study was to study histopathological pattern of endometrium in patients presenting with AUB.

**MATERIALS AND METHODS**

This prospective study was done on the women attending the gynecology OPD at Government Lalla Ded Hospital with the complaints of AUB during the period of 1 year (January 2022–December 2022).

**Inclusion Criteria**

Women of reproductive and perimenopausal age group with complaints of heavy/prolonged/irregular/recurrent menstrual bleeding were included in the study.

**Exclusion Criteria**

Women with gestational cause, hemostatic disorders, and isolated cervical or vaginal pathology were excluded from the study. Women with polyps and fibroids were also excluded from the study.

The detailed history was taken which included demographic data, present history, past history, family history, drug history, and obstetric history. The detailed menstrual history was taken which included menarche, last menstrual period, duration of cycle, cycle length, number of pads per day, history of passage of clots, and any history of dysmenorrhea.

**Specimen Sampling and Laboratory Procedure**

Endometrial samples were obtained by Pipelles aspiration (out-patient department) and Dilatation and Curettage (operation theatre) and sent to the Histopathology Laboratory of Government Medical College Srinagar in 10% formalin.

In the laboratory, the samples were kept overnight in formalin for fixation. Next day morning, specimen was inspected, and a gross description was documented. Thereafter, the tissue was directly transferred into the cassette, lens paper was used for minute tissue bits to prevent loss of tissue during the processing. The baskets with tissue cassettes were put in automated

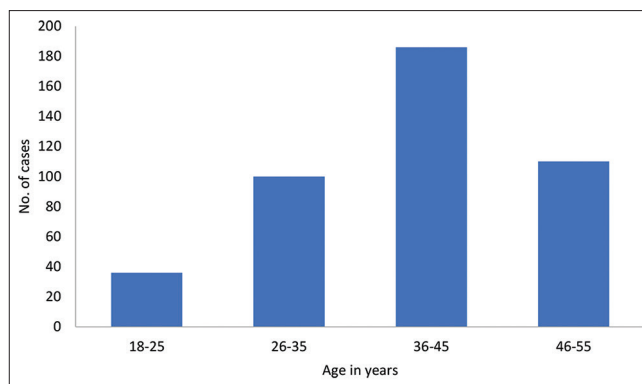


Figure 1: Age distribution in abnormal uterine bleeding

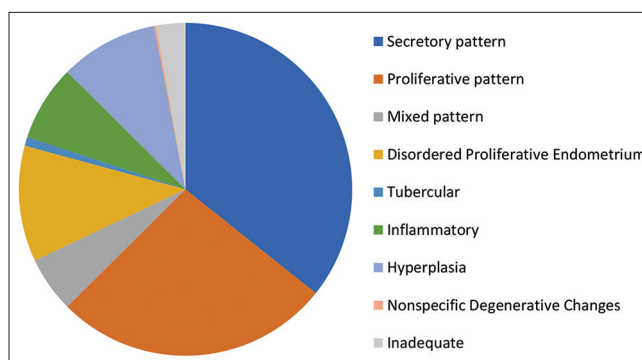


Figure 2: Histopathological findings in abnormal uterine bleeding

Table 1: Age Distribution in AUB

Age (years)	Number of patients	Percentage
18–25	36	8.40
26–35	100	23.14
36–45	186	43.04
46–55	110	25.42
Total	432	100.00

Table 2: Histopathological findings in AUB

Histopathological findings	Number of patients	Percentage
Proliferative pattern	124	28.84
Secretory pattern	165	38.07
Mixed Pattern (proliferative+secretory)	25	5.70
Disordered proliferative endometrium	22	5
Tubercular	4	1.00
Inflammatory	34	7.98
Hyperplasia	44	10.17
Non-specific degenerative changes	1	0.24
Inadequate	13	3.00
Total	432	100.00

tissue processor. Next day morning, tissue embedding was done, paraffin blocks were made and submitted for microtomy, 4–5 microns thick sections were made and stained by Hematoxylin and Eosin stain in the Automated

Stainer. Histopathological microscopic examination and diagnosis were made on Haematoxylin and Eosin-stained slides.

Statistical method: Data were entered in a Microsoft excel spreadsheet and results were summarized as frequency and percentage. Graphically, the data were presented by bar and pie diagrams.

## RESULTS

During 1-year period, a total of 432 endometrial samples with a clinical diagnosis of AUB were studied.

Patient's age ranged from 18 to 55 years and most of them were seen in the age group 36–45 years, followed by 46–55 years [Figure 1 and Table 1].

The AUB was most common in multiparous patients (204 patients, 47.3%).

The most common complaint was menorrhagia (220 patients, 51%).

Normal cyclical endometrium was found to be the most common pattern in histopathological examination of the samples with secretory endometrium in 165 patients (38.07%) and proliferative endometrium in 124 patients (28.84%). It was followed by disordered hormonal endometrium 5% (22), endometrial hyperplasia 10.17% (44), inflammatory endometrium 7.98% (52), and mixed pattern 5.7% (25) [Figure 2 and Table 2].

## DISCUSSION

AUB is the commonest disease in gynecology accounting for 30–40% cases of outpatient department. AUB significantly affects the quality of life of otherwise healthy women. Endometrial sampling is a safe and easy procedure, even recommended by FIGO as first-line management in AUB.

In our study, AUB was mostly seen in age group of 36–45 years (43.04%) followed by 46–55 years (25.42%). In the studies done by Patne and Sirpurkar, Patil *et al.*, maximum number of patients were in the age group of 31–40 years, 33.8% and 45.26%, respectively.<sup>[4,5]</sup>

AUB was mostly seen in the multiparous females (47.3%) in this study which is consistent with the studies done by Patne and Sirpurkar, Behera *et al.*, 60.95% and 52.9%, respectively.<sup>[4,6]</sup>

Menorrhagia was the most common complaint (51%) among the females with AUB in our study. Patne and Sirpurkar, Behera *et al.* and Karim *et al.* also found that the maximum patients visit the outpatient department with the complaints of menorrhagia; 42.85%, 57.12%, and 42%, respectively.<sup>[4,6,7]</sup>

The most common histopathological pattern in our study was normal cyclical endometrium comprising of 38.07% secretory pattern and 28.84% proliferative pattern. This was followed by hyperplasia (10.17%), endometritis (7.98%), mixed proliferative and secretory pattern (5.7%), disordered proliferative endometrium (5%), tubercular pattern (1%), and non-specific degenerative changes (0.24%). Singh and Sonawane. also found that the patterns of normal cyclical endometrium were the most common (36.7%), followed by hyperplasia (21%).<sup>[8]</sup>

## CONCLUSION

In this study, we found that 36–45 years age group is most susceptible to AUB. Multiparity increases the chances of AUB. Menorrhagia being the most common complaint among the females with AUB. Normal cyclical endometrium is the commonest histopathological finding followed by hyperplasia. Histopathological study is a safe and effective method not only for diagnosis but also for management of AUB. Histopathological examination also helps in detecting hyperplastic and disordered endometrial changes which are usually associated with carcinoma endometrium especially women of perimenopausal and postmenopausal age groups.

## ACKNOWLEDGMENT

During the present study and preparation of the manuscript, we would like to thanks Prof. (Dr.) Rizwana Habib Kanth, Professor and Head, Dept of Obs and Gynae, for her valuable inputs and support.

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**How to cite this article:** Zahir F, Syed S, Bashir A, Mir S. Study of Histopathological Patterns of Endometrium in Abnormal Uterine Bleeding. *Int J Sci Stud* 2023;11(4):30-33.

**Source of Support:** Nil, **Conflicts of Interest:** None declared.