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Original article

CLINICAL SPECTRUM AND PREVALENCE OF ABNORMAL UTERINE BLEEDING IN A TERTIARY CARE HOSPITAL

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ABSTRACT

Background : Abnormal uterine bleeding (AUB) is one of the most common complaint among women presenting to the Gynaecology department. It is a debilitating condition with high direct and indirect costs especially in developing countries. The purpose of this study was to describe the prevalence and clinical spectrum of AUB in Indian population. Material and methods: A prospective cross-sectional study was done on 6,139 women presenting with the complaints of abnormal uterine bleeding to the Gynaecology outpatient department of Dr. Ram Manohar Lohia Institute of Medical Sciences, Lucknow from 1st August, 2019 to 31st July 2020. FIGO-AUB system was used for terminologies and definitions of symptoms of AUB. Results : The prevalence of AUB was found to be 36%. Overall prevalence of structural and non-structural causes in our hospital was 65.61% and 34.38%. AUB-O was the most frequent finding in women, accounting for 1712(27.88%) cases. AUB-L was found in 1507(24.54%) women, AUB-A in 997(16.24%) women, AUB-M in 961(15.65%) women, AUB-P in 563(9.1%) women, AUB-E in 167(2.72%) women, AUB-I in 144(2.34%) women, AUB-C in 85(1.38%) women, and AUB-N in 3(0.0005%) women. The most common menstrual pattern were prolonged, irregular and heavy menstrual bleeding seen in 63.45%, 59.32% and 59.89% women respectively. Highest prevalence of AUB(49.88%) was seen in >40 years of age.

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Introduction

Abnormal uterine bleeding (AUB) is a significant clinical entity. AUB and its sub group, heavy menstrual bleeding (HMB), are common conditions affecting 14–25% of women of reproductive age [1], [2] and may have a significant impact on their physical, social, emotional and material quality of life [3] Along with the direct impact on the woman and her family, there are significant costs to both economy and health service. In the year 2011, the FIGO had published the PALM-COEIN classification system for standardizing terminology, diagnosis and investigations in women presenting with AUB1. The classification system includes nine categories which are organised as "PALM-COEIN". PALM group consists of five structural aetiologies which can be diagnosed with an ultrasound and/or histopathology (polyp, adenomyosis, leiomyoma, Malignancy and hyperplasia).

Chronic nongestational AUB in the reproductive years is defined as bleeding from the uterine corpus that is abnormal in duration, volume, frequency, and/or regularity, and has been present for the majority of the preceding 6 months. Acute AUB, on the other hand, is defined as an episode of heavy bleeding that, in the opinion of the

clinician, is of sufficient quantity to require immediate intervention to minimize or prevent further blood loss. Acute heavy menstrual bleeding may present in the context of existing chronic AUB or can occur in the absence of such a background history. It is usually associated with discomfort, anxiety, iron deficiency anemia, decreased work productivity and income, negative impact on relationship with partner and many result in surgical interventions including hysterectomy.[4] The diagnosis of AUB depends on the comprehensive assessment of the medical history, combined with blood tests and ultrasound or hysteroscopic examination.. Structural changes. AUB is reported to occur in 9-14% women between menarche and menopause.[5] The prevalence increases with age, reaching 24% in women aged 36-40[6] and varies in each country. In India the reported prevalence of AUB is around 17.9%.[7] Therefore, this research provides the basis for clinical judgment in terms etiology of AUB and the analysis of various types of bleeding patterns in accordance with the FIGO classification system.

AIM OF THE STUDY

1. To find the prevalence of causes of AUB.
2. To find the prevalence of different menstrual patterns in AUB.

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MATERIALS AND METHODS

This was a prospective cross sectional study done from 1st August 2019 to 31st July 2020 in the department of Obstetrics and Gynaecology, Dr. Ram Manohar Lohia Institute of Medical Sciences, Lucknow.

INCLUSION CRITERIA

The subject inclusion criteria were as follows:

- Women aged 15 to 55 years
- AUB, including any of the following[1]:
 - ü menstrual cycle of <24 days or of >38 days or amenorrhea;
 - ü irregularity of menses, shortest to longest cycle variation of >8-10 days;
 - ü duration of flow of >8 days;
 - ü volume of monthly blood loss sufficient to interfere with the woman's quality of life
 - ü Spontaneous bleeding occurring between menstrual periods Can be either cyclical, or random
- Patients who gave written informed consent to participate in this study and were ready for follow up.

EXCLUSION CRITERIA:

- Vaginal bleeding caused by pregnancy and pregnancy-related factors
- Refusal to participate in this study
- Patients who refused for follow up.

METHODS

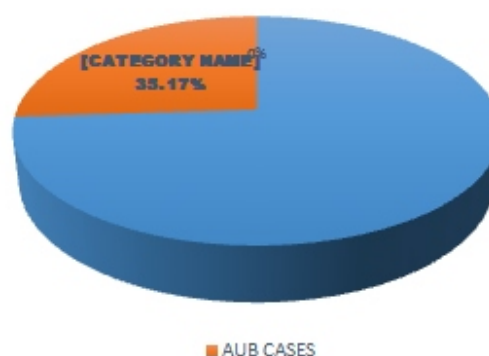
A detailed patient history, such as age, height, weight, menstrual history, age at menarche, medical and surgical history was obtained. General examination and gynaecological examination (breast examination, P/A, P/S, P/V examination) was done. Urine pregnancy test was done to rule out pregnancy followed by laboratory test results which included complete blood count, peripheral blood smear, sex hormone levels, bleeding time, clotting time, prothrombin time & activated partial prothrombin time, factor 8 and 9 levels, thyroid function tests, liver function tests, renal function tests, transvaginal ultrasound and hysteroscopic examination, as well as endometrial biopsy in indicated cases were obtained. All participants were interviewed in person by trained investigators for menstrual pattern to obtain any disturbances in the regularity of menses, frequency, duration and volume of uterine bleeding. Menstrual record paper (Appendix 1) was distributed to the patients to be kept as a menstrual diary for 3 months. The menstrual diary was used to record abnormal menstruation (e.g., menstrual period cycle and duration, volume of monthly blood loss). After 3 months, the main causes of AUB were determined according to the medical history, physical examination and investigations. The definition, the diagnostic criteria and procedures for AUB were based on the 2018 FIGO guidelines[1]. The diagnosis of "PALM," the cause of structural change, was confirmed by imaging techniques or histopathological methods. In addition, the diagnosis of uterine "COEIN," without disease of structural change, was confirmed by imaging technologies or histopathological methods on the basis of organic disease combined with sex hormone and blood coagulation laboratory tests. Meanwhile, for any one or more causes associated with AUB, only the most likely diagnosis of AUB was included. Before the study began, the ethical clearance was taken from Institutional ethics committee

of the Research and written informed consent was obtained from all participants. Data was assessed by Microsoft excel and managed in SPSS version 16. The outcome of statistical analysis was calculated as percentage and proportion and represented as tables and figures.

RESULTS

It was observed that the prevalence of AUB was 35% (Figure 1). Out of total of 17,452 patients attending the gynaecology OPD in the said study period of one year, 6139 patients fulfilled the inclusion criteria and were included in the study.

Figure 1: Prevalence of AUB



The patients' demographic and obstetrical characteristics are presented in Table 1. The average age of women who met the inclusion criteria was 35.8±8.2 years. The mean body mass index was 27.5± 2.8.

Table 1: Demographic profile of the patients

Characteristics	No. of patients	Percentage%
AGE		
<20	333	5.4%
20-30	1009	16.4%
30-40	1735	28.2%
> 40	3062	50%
PARITY		
P0	352	5.7%
P1	406	6.6%
P2	2802	45.7%
P3	2263	36.9%
>=P4	316	5.1%
BMI		
<18.5	184	3%
18.5-24.9	1105	18%
25-29.9	3070	50%
30-34.9	1658	27%
≥35	123	2%
BACKGROUND		
Rural	3185	51.9%
Urban	2954	48.1%

The prevalence of the cause of AUB using the PALM-COEIN classification is shown in Table 2. Structural cause of AUB accounted for 65.61% of cases, whereas non-structural cause of AUB accounted for 34.38% of cases. AUB-O was the most frequent finding in women with AUB, accounting for 1712 (27.88%) cases. AUB-L was found in

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Table 2: Distribution of patients according to diagnosis

Diagnosis	No. of patients	Percentage%
PALM	4028	65.61%
AUB-P	563	9.1%
AUB-A	997	16.24%
AUB-L	1507	24.54%
AUB-M	961	15.65%
COEIN	2111	34.38%
AUB-C	85	1.38%
AUB-O	1712	27.88%
AUB-E	167	2.72%
AUB-I	144	2.34%
AUB-N	3	0.00048%

AUB diseases with prevalence among different age groups are shown in Table 3. The highest prevalence of AUB was seen in >40 years of age (49.9%), followed by 28.3% at 31 to 40 years, 16.4% at 21 to 30 years, and 5.4% at <=20 years of age.

Table 3: Prevalence of AUB in various age groups

AGE (years)	No. of patients (%)	AUB-P (%)	AUB-A (%)	AUB-L (%)	AUB-M (%)	AUB-C (%)	AUB-O (%)	AUB-E (%)	AUB-I (%)	AUB-N (%)
<=20	333(5.4)	0	0	0	0	77(9.1)	256(15)	0	0	0
21-30	1009(16.4)	132(24)	58(5.8)	28(2)	16(1.7)	8(9)	702(41)	18(1.8)	47(3.2)	0
31-40	1735(28.3)	216(38)	420(42)	394(26)	170(17.7)	0	411(24)	15(9)	56(3.8)	3(10)
> 40	3062(49.9)	215(38)	519(52)	1085(72)	775(80.6)	0	343(20)	134(80.2)	41(28.5)	0
Total	6139	563	997	1507	961	85	1712	167	144	3

The bleeding patterns of women with AUB are shown in Table 4. The most common menstrual pattern were prolonged, irregular and heavy menstrual bleeding seen in 63.45%, 59.32% and 55% women respectively. Most of the patients had more than one complain.

Table 4: Menstrual patterns and their prevalence

Parameter		Number of patients	Percentage%
Frequency	Absent	1490	24.27%
	Infrequent	2783	45.33%
	Normal	1121	18.26%
	Frequent	745	12.13%
Duration	Normal	2244	36.6%
	Prolonged	3895	63.45%
Regularity	Regular	2497	40.67%
	Irregular	3642	59.32%
Volume	Light	621	10.11%
	Normal	1841	30%
	Heavy	3677	59.89%
Intermenstrual bleeding	None	5537	90.1%
	Random	602	9.8%

DISCUSSION

The menstrual cycle is an important biological marker of women's health. [9] The result of this study showed that one third of the women suffered from AUB and its prevalence was higher when the population was confined to older women. The literature related to this study was pretty limited, because the definition used for AUB in previous studies were diverse. During the one year study from August 2019 to July 2020, 17,452 patients came to the Gynaecology OPD of Dr. Ram Manohar Lohia Institute of Medical Sciences, Lucknow out of which 35.17% had AUB. This is more than those of other studies which may be due to different ethnicity, classification and definitions of AUB. Overall incidence of detectable non-structural causes in our hospital is 52.5%.Ovulatory dysfunction (27.88%) was most common cause followed by leiomyoma (24.54%) and Adenomyosis (16.24%) which was similar to study done by Gouri et al.[10] In our study, some patients had mixed etiologies of AUB. AUB-L, AUB-A and AUB-P were more prevalent in >40 years (46.9%) as compared to other age groups, showing that the prevalence of Leiomyoma and Adenomyosis increases with age which was similar to study done by Sun et al.[11] This study found that AUB caused by endometrial polyps accounted for 9.1% of cases, lower than that reported by Clark et al, where AUB-P accounted for 20%~ 30% of cases.[12-14] . Incidence of identifiable coagulation abnormalities was 1.38%. Incidence of endometrial cause was 2.72%. Incidence of detectable ovulation dysfunction is 27.88 %. In this study, prolonged menstrual bleeding was found to be 63.45%, followed by irregular bleeding in 59.32% of cases. Similar study done by Radha Nair et al[13] found heavy menstrual bleeding in 64% of cases.

CONCLUSION

AUB is a serious problem affecting the quality of life of women. Overall, AUB-O is the most common cause and is followed by AUB-L, which is the most common cause of structural changes. The most common manifestation is a prolonged period followed by an increase in volume. The prevalence rates of AUB-A and AUB-P rank third and fourth, respectively. Not using the standard terminology leads to difficulty in interpretation of the literature. In addition, no population-based study has been conducted in India regarding the prevalence of AUB based on the 2018 FIGO definitions of AUB. To address this lack of information, the aim of the present study was to investigate the prevalence of AUB using the current revisions of the FIGO-AUB System. All clinicians who provide care for women with the complaint of AUB must have an organized logical approach to the evaluation and treatment of the problem. There should be use of a standard international terminology for classification.

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Conflict of interest: The authors declare that they have no conflict of interest.

Ethical approval: The study was approved by the Institutional Ethics Committee. All procedures performed in this study were in accordance with the ethical standards of the Institutional and/or National Research Committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards

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