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Original Article

Study of Abnormal Uterine Bleeding in Women of Perimenopausal Age

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ABSTRACT

Background: Abnormal uterine bleeding (AUB) is a common gynaecological problem in perimenopausal women and often results from hormonal imbalance or underlying uterine pathology. Early evaluation is essential to exclude premalignant and malignant conditions and to guide appropriate management.
Objectives: To study the clinical profile, etiological factors, bleeding patterns, and treatment modalities of abnormal uterine bleeding in perimenopausal women.
Materials and Methods: This prospective observational study was conducted in the Department of Obstetrics and Gynaecology at K.M. Medical College and Hospital from March 2020 to August 2021. A total of 100 perimenopausal women aged 40–55 years presenting with abnormal uterine bleeding were included. Detailed clinical evaluation, relevant investigations, endometrial assessment, and classification of aetiology using the PALM–COEIN system were performed. Data were analysed using SPSS software.
Results: The majority of patients were aged 41–45 years (54%). Menorrhagia was the most common bleeding pattern (66%). Mild anaemia was observed in 40% of patients. According to the PALM–COEIN classification, adenomyosis (AUB-A) was the most frequent aetiology (37%). Most patients required surgical management, with dilatation and curettage with polypectomy (32%) and laparoscopic hysterectomy with bilateral salpingo-oophorectomy (28%) being the common procedures. Endometrial histopathology predominantly showed benign patterns, though atypical hyperplasia was observed in a small proportion of cases.
Conclusion: Abnormal uterine bleeding in perimenopausal women is multifactorial, with adenomyosis being the leading cause. Early evaluation, endometrial assessment, and individualised management are essential to improve outcomes and prevent complications.

Keywords*: Abnormal uterine bleeding; Perimenopause; Adenomyosis; PALM–COEIN classification; Menorrhagia; Endometrial evaluation; Hysterectomy.*

INTRODUCTION

Abnormal uterine bleeding (AUB) is one of the most common gynaecological complaints among women of perimenopausal age and accounts for a significant proportion of outpatient and emergency visits. It is defined as bleeding from the uterine corpus that is abnormal in volume, frequency, duration, or regularity and occurs in the absence of pregnancy [1]. AUB has a considerable impact on a woman's physical health, psychological well-being, and quality of life, often resulting in anemia and increased healthcare utilization [2].

The perimenopausal period, typically occurring between 40 and 55 years of age, is characterized by declining ovarian function and hormonal fluctuations. These endocrine changes frequently lead to anovulatory cycles, endometrial instability, and irregular menstrual bleeding patterns, making women in this age group particularly susceptible to abnormal uterine bleeding [2]. Although many cases are benign, AUB in perimenopausal women requires careful evaluation due to the increased risk of endometrial hyperplasia and malignancy [3].

To standardize terminology and improve diagnostic clarity, the International Federation of Gynecology and Obstetrics (FIGO) introduced the PALM–COEIN classification system for causes of AUB. This system categorizes etiologies into structural causes (Polyp, Adenomyosis, Leiomyoma, Malignancy and hyperplasia) and non-structural causes (Coagulopathy, Ovulatory dysfunction, Endometrial, Iatrogenic, and Not yet classified), thereby facilitating a systematic and evidence-based approach to evaluation and management [1,4].

The evaluation of AUB includes detailed history taking, thorough clinical examination, laboratory investigations, imaging studies, and endometrial assessment when indicated. Endometrial sampling is particularly important in perimenopausal women, especially in the presence of risk factors such as obesity, diabetes mellitus, hypertension, and prolonged unopposed estrogen exposure, to exclude premalignant and malignant conditions [3,5].

Management of abnormal uterine bleeding depends on the underlying etiology, severity of symptoms, age, parity, associated comorbidities, and patient preference. Treatment options range from medical therapy to surgical interventions, including dilatation and curettage, hysteroscopic procedures, and hysterectomy [5,6]. An individualized treatment approach is essential to achieve symptom control while minimizing morbidity.

In view of the high prevalence of abnormal uterine bleeding during the perimenopausal period and the need for accurate diagnosis and appropriate management, the present study was undertaken to evaluate the clinical profile, etiological factors, and treatment modalities of abnormal uterine bleeding in perimenopausal women attending a tertiary care hospital.

MATERIALS AND METHODS

Study area: This prospective observational study of 100 cases of abnormal uterine bleeding between 40-55 years of age, attending to OPD & Gynae emergency, was conducted during March 2020 to August 2021, in the Dept. of Obstetrics & Gynaecology, K M MEDICAL COLLEGE AND HOSPITAL.

Study design: prospective observational study

Study period: 1.5 years

Sample size: 100

Study population: The cases under study were selected from the OPD gynae and gynae emergency patients coming with the complaint of abnormal uterine bleeding between 40 to 55 years of age

Methodology: Hospital ethical committee approval was obtained to conduct the study, and a valid written consent was taken from all the cases. A detailed history was taken, and a thorough clinical examination was done, complemented by relevant investigations required for the study. All the data were duly recorded in the standard prepared proforma. Details of each patient's case were recorded and analysed with respect to aetiopathology, age, parity, marital status, socioeconomic status, treatment options and other medical disorders. Patients were followed up from 3 to 8 months, with an average of about 4.5 months.

Inclusion criteria:
All perimenopausal (40 to 55 years) women presenting with abnormal uterine bleeding.

Exclusion criteria:
All women with active or recent pelvic inflammatory disease, patients in the menstruation phase, pregnancy or suspected pregnancy complications and cervical stenosis

Clinical study:
All cases were properly and thoroughly evaluated by taking a detailed history, clinical examination and the necessary investigations. All cases taken for study were booked

1. Age, parity, past medical and surgical history and past obstetric history were recorded.
2. Routine general and systemic examinations were carried out to detect any abnormalities.
3. Past obstetric history was recorded.

Statistical methods
Statistical Analysis was performed with the help of statistical software SPSS Version 20. Using this software, basic cross-tabulation, inferences and associations were performed.

Ethical justification:

Informed consent was taken for inclusion in the study. According to the guidelines set up by the Helsinki Declaration, the following was adhered to in all the patients enrolled in the study.

- The patients enrolled in the research project have given written informed consent, and their decision not to volunteer for the research was respected and was NOT the basis for any form of treatment discrimination.
- Each patient was adequately informed of the aims, methods, sources of funding, any possible conflicts of interest, institutional affiliations of the researcher, the anticipated benefits and potential risks of the study and the discomfort it may entail to her and the remedies thereof.
- Every precaution was taken to protect the privacy of the patient, the confidentiality of the patient's information, and to minimise the impact of the study on her physical and mental integrity and her personality.
- Each patient was given the right to abstain from participation in the study or to withdraw consent to participate any further at any point in time from the study without reprisal.
- Due care and caution were taken at all stages of the research to ensure that the patient is put to minimum risk and she does NOT suffer from any irreversible adverse effects and, generally, benefit by this experimental study.

Statistical Analysis:

For statistical analysis, data were entered into a Microsoft Excel spreadsheet and then analysed by SPSS (version 27.0; SPSS Inc., Chicago, IL, USA) and GraphPad Prism version 5. Data had been summarised as mean and standard deviation for numerical variables and count and percentages for categorical variables. The Z-test (Standard Normal Deviate) was used to test the significant difference of proportions. p-value ≤ 0.05 was considered statistically significant.

RESULT AND OBSERVATIONS

Table 1: Age Distribution of Study Participants (n = 100)

Age Group (years)	Frequency (n)	Percentage (%)
41–45	54	54.0
46–50	30	30.0
51–55	16	16.0
Total	**100**	**100.0**

The majority of patients belonged to the 41–45 years age group (54.0%), followed by 46–50 years (30.0%) and 51–55 years (16.0%). The age distribution was found to be statistically significant ($Z = 3.44$, $p = 0.00058$), indicating a higher prevalence of abnormal uterine bleeding in the younger perimenopausal age group.

Table: 2 Distribution of Demographic and Clinical Characteristics of Study Participants (n = 100)

Variable	Category	Frequency (n)	Percentage (%)
Age Group (years)	41–45	54	54.0
	46–50	30	30.0
	51–55	16	16.0
Marital Status	Married	93	93.0
	Unmarried	7	7.0
Parity	Nullipara	14	14.0
	Para 1	40	40.0
	Para 2	32	32.0
	Para 3	14	14.0
Medical Illness	Diabetes Mellitus	7	7.0
	Hypertension	16	16.0
	Hypothyroidism	7	7.0
	Nil	70	70.0

The majority of patients were in the 41–45 years age group (54.0%) and were married (93.0%). Most women were para 1 (40.0%) or para 2 (32.0%). Seventy percent of participants had no associated medical illness, while hypertension (16.0%) was the most common comorbidity.

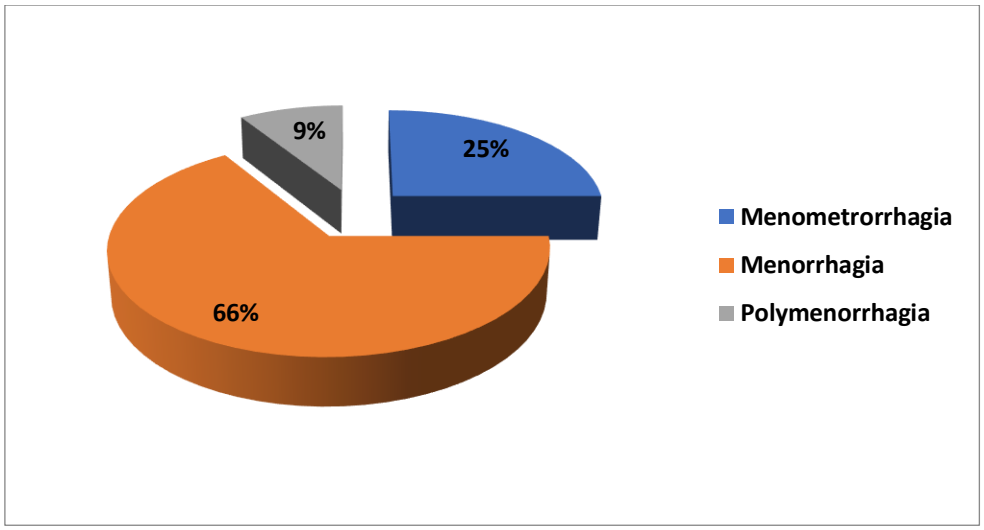

Figure 1: Distribution of Bleeding Pattern

In our study, 25 (25.0%) patients had Menometrorrhagia, 66 (66.0%) patients had Menorrhagia and 9 (9.0%) patients had Polymenorrhagia in menstrual pattern.

The value of z is 5.8219. The value of p is < .00001. The result is significant at p < .05

Table: 3 Distribution of Anemia Status and Aetiology of Abnormal Uterine Bleeding (n = 100)

Variable	Category	Frequency (n)	Percentage (%)
Anemia Status	Absent	30	30.0
	Mild	40	40.0
	Moderate	23	23.0
	Severe	7	7.0
Aetiology (PALM–COEIN)	AUB-A	37	37.0
	AUB-L	23	23.0
	AUB-O	8	8.0
	AUB-P	32	32.0

Mild anemia was the most common finding, observed in 40.0% of patients, followed by moderate (23.0%) and severe anemia (7.0%). According to the PALM–COEIN classification, AUB-A (37.0%) was the most common aetiology, followed by AUB-P (32.0%), AUB-L (23.0%), and AUB-O (8.0%). The distribution of anemia was not statistically significant (Z = 1.48, p = 0.139)

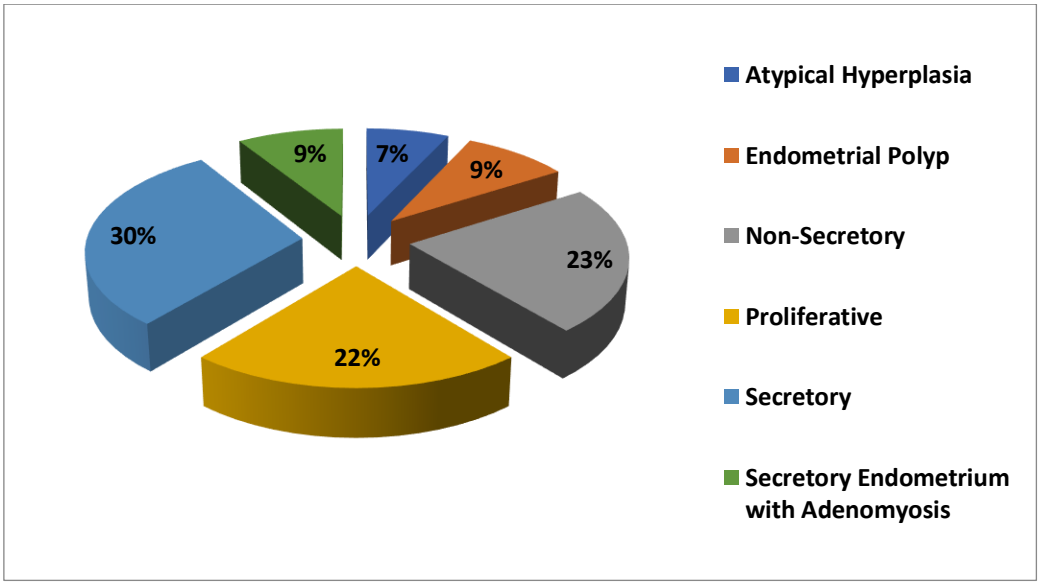

Figure 2: Distribution of Endometrial Pattern

In our study, 7 (7.0%) patients had Atypical Hyperplasia, 9 (9.0%) patients had Endometrial Polyp, 23(23.0%) patients had Non-Secretory,22 (22.0%) patients had Proliferative, 30 (30.0%) patients had Secretory and 9 (9.0%) patients had Secretory Endometrium with Adenomyosis. The value of z is 1.1215. The value of p is .26272. The result is not significant at $p < .05$.

Table:4 Distribution of Treatment Modalities and Age Statistics of Study Participants (n = 100)

Variable	Category / Parameter	Frequency (n)	Percentage (%)	Mean ± SD	Min–Max	Median
Treatment Modality	D&C + Polypectomy	32	32.0	—	—	—
	Medical Management	8	8.0	—	—	—
	TAH	9	9.0	—	—	—
	TAH + BSO	7	7.0	—	—	—
	TLH	16	16.0	—	—	—
	TLH + BSO	28	28.0	—	—	—
Age (years)	—	100	—	45.79 ± 4.51	40–55	45

Dilatation and curettage with polypectomy was the most common treatment modality (32.0%), followed by TLH with BSO (28.0%) and TLH alone (16.0%). Medical management was used in 8.0% of cases. The distribution of treatment modalities was not statistically significant ($Z = 0.62$, $p = 0.535$). The mean age of the study population was 45.79 ± 4.51 years, with a median age of 45 years.

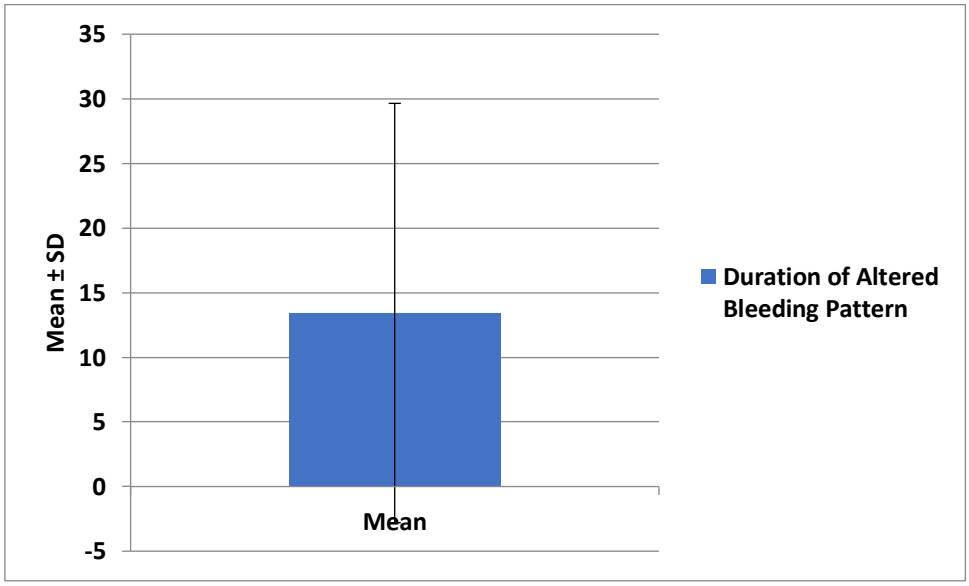

Figure 3: Distribution of mean Duration of Altered Bleeding Pattern

The mean Duration of Altered Bleeding Pattern (mean±s.d.) of patients was 13.4260± 16.2215.

DISCUSSION

Abnormal uterine bleeding is a common and distressing problem among perimenopausal women and represents a significant clinical challenge due to its varied etiologies and impact on quality of life. In the present study, the majority of patients belonged to the 41–45 years age group, indicating that abnormal uterine bleeding is more prevalent in the early perimenopausal period. Similar findings have been reported in previous studies, which suggest that hormonal fluctuations and anovulatory cycles during early perimenopause contribute significantly to menstrual irregularities [7,8].

Most women in the present study were married and multiparous, with para 1 and para 2 forming the largest groups. This observation is consistent with other studies where multiparity has been associated with increased gynaecological consultations due to cumulative hormonal exposure and structural uterine changes over time [9]. However, parity distribution in the present study was not statistically significant, suggesting that abnormal uterine bleeding in perimenopausal women may not be strongly influenced by parity alone.

Menorrhagia was the most common bleeding pattern observed in this study, followed by menometrorrhagia and polymenorrhagia. This pattern is in agreement with studies by Fraser et al. and Munro et al., who reported heavy menstrual

bleeding as the predominant presentation of abnormal uterine bleeding in perimenopausal women [1,10]. The statistically significant distribution of bleeding patterns highlights the clinical importance of detailed menstrual history in evaluation of AUB.

Anemia was a frequent associated finding, with mild anemia being the most common. Chronic blood loss due to prolonged or heavy menstrual bleeding is a well-recognized cause of iron deficiency anemia in women with AUB [11]. Although the severity of anemia was not statistically significant in the present study, its high prevalence emphasizes the need for early diagnosis and management to prevent long-term complications.

Using the FIGO PALM–COEIN classification, AUB-A (adenomyosis) was the most common etiology, followed by AUB-P (polyp) and AUB-L (leiomyoma). This finding correlates with several studies reporting adenomyosis as a leading cause of AUB in perimenopausal women due to increasing myometrial and endometrial changes with advancing age [12,13]. The PALM–COEIN system proved useful in categorizing causes of AUB and guiding appropriate management strategies.

Histopathological evaluation of the endometrium revealed secretory and proliferative patterns as the most common findings, while atypical hyperplasia was observed in a small proportion of patients. Similar distributions have been reported in other studies, emphasizing that while most endometrial changes in perimenopausal women are benign, the risk of premalignant lesions cannot be overlooked [14]. This underscores the importance of endometrial assessment in this age group, especially in women with persistent or heavy bleeding.

Surgical management was the most commonly employed treatment modality in the present study, with dilatation and curettage with polypectomy and laparoscopic hysterectomy being the predominant procedures. Medical management was used in a smaller proportion of patients. These findings are comparable to those of earlier studies, which report hysterectomy as a definitive treatment for AUB in women who have completed childbearing and have failed medical therapy [15,16]. The choice of treatment was individualized based on patient age, etiology, severity of symptoms, and patient preference.

Overall, the findings of the present study highlight that abnormal uterine bleeding in perimenopausal women is multifactorial, with adenomyosis and heavy menstrual bleeding being the most common contributors. A systematic evaluation using standardized classification systems and individualized treatment planning is essential for optimal patient outcomes.

CONCLUSION

Abnormal uterine bleeding is a common problem in perimenopausal women, with heavy menstrual bleeding being the most frequent presentation. Adenomyosis was the leading etiology, and anemia was a common associated finding. Most patients required surgical management, particularly dilatation and curettage with polypectomy and laparoscopic hysterectomy. Although most endometrial findings were benign, the presence of atypical hyperplasia highlights the importance of endometrial evaluation in this age group. A systematic and individualized approach is essential for effective management and improved patient outcomes.

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