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Evaluating the causes of abnormal uterine bleeding in perimenopausal women: A cross sectional study

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Abstract
Abnormal uterine bleeding (AUB) is a common complaint among perimenopausal women. This cross sectional study aimed to evaluate the causes of AUB in perimenopausal women and identify the most common underlying factors. It is a major cause of hysterectomy, and thus is a major health problem.
Methods: This was a hospital based cross sectional study conducted on perimenopausal women with complaints of abnormal uterine bleeding admitted in Obstetrics and Gynaecology, Vardhman Mahaveer medical College and Safdarjung hospital, New Delhi.
Results: Total number of gynaecological examination in the hospital i.e. 603, 16.5% comprised of perimenopausal women with complaints of Abnormal Uterine Bleeding, who were taken up for the study. Obesity was found to be most commonly associated risk factor, followed by hypertension and thyroid disorders.
Conclusion: AUB continues to be one of the most commonly encountered complaints in gynaecologic practice. Determining the most likely Etiology of acute AUB is essential for choosing the most appropriate and effective management for the individual patient and is accomplished by obtaining a history, performing a physical examination, and requesting laboratory and imaging tests, when indicated.

Keywords: AUB, etiology, gyaecological practice

Introduction
Perimenopause is a transitional phase leading up to menopause, characterized by hormonal fluctuations and changes in menstrual bleeding patterns. AUB is a significant concern during this period, affecting quality of life and causing anxiety. Abnormal uterine bleeding (AUB) is one of the most common presenting complaint encountered by a Gynaecologist. It is a major cause of hysterectomy, and thus is a major health problem [1].
The most common cause of AUB is dysfunctional uterine bleeding (DUB) which has no any detectable organic cause. It is usually due to hormonal disturbances: reduced level of progesterone causes low levels of prostaglandin F2alpha and cause menorrhagia (Abnormally heavy flow); increased levels of tissue plasminogen activator (A fibrinolytic enzyme) lead to more fibrinolysis. Organic causes of AUB includes benign pelvic lesion (Fibroid, adenomyosis, cervical and endometrial polyp, tuberculosis), infection, trauma, iatrogenic (Hormonal replacement therapy, contractive use, anticoagulant therapy), malignancy of cervix, endometrium or ovary, systemic illness (Hypertension, diabetes mellitus, thyroid disorders), etc. AUB can be classified as ovulatory or anovulatory, depending on whether ovulation is occurring or not [2]. The regularity is said to be normal if variation is not more than of 2 – 20 days in between cycles, normal duration of menses is of 4 – 8 days, normal frequency of cycles is 24 – 38 days, normal amount of blood loss is 5 – 80 ml per cycle [3]. World Health Organisation defines Perimenopause as the period 2 -8 years preceding menopause and 1 year after the final menses [4].
The popular classification of non-gestational causes of AUB was introduced by FIGO (International Federation of Gynecology and Obstetrics) in 2011 and revised in 2018 (Figure 1) The causes of non-gestational AUB have been classified into nine categories arranged according to the acronym PALM-COEIN, including the structural causes ("PALM"): polyp, adenomyosis, leiomyoma, malignancy/hyperplasia, and non-structural causes ("COEIN"): coagulopathy, ovulatory dysfunction, endometrial, iatrogenic, and "not otherwise classified" [5].

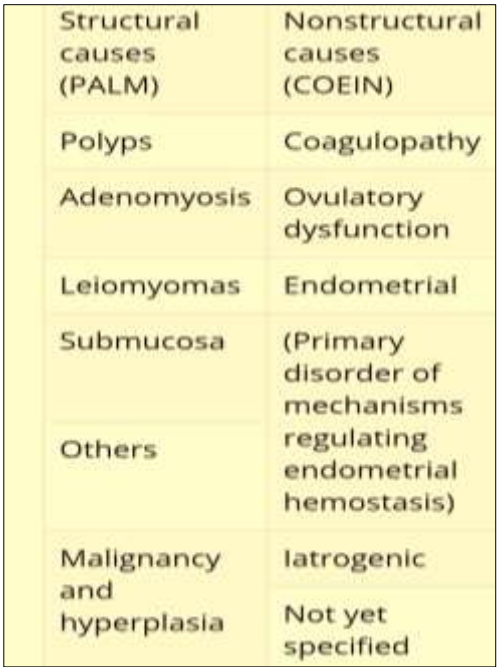

Fig 1: PALM- COIEN classification

Materials and Methods

Descriptive type of observational study was conducted among women with AUB who presented to the Gynaecology OPD.

- **Study Design:** Hospital based cross sectional study.
- **Study Period:** January 2024 to December 2024.
- **Study Setting:** The study was conducted at Department of Obstetrics and Gynecology, Vardhman Mahaveer medical College and Safdarjung hospital, New Delhi.
- **Study Population:** Patients admitted in Department of Obstetrics and Gynecology, Vardhman Mahaveer medical College and Safdarjung Hospital, New Delhi.

Inclusion Criteria: Women >40 years with complaints of abnormal uterine bleeding.

Exclusion Criteria

- Postmenopausal women
- Women with cervical causes of bleeding
- Pregnant women
- Local lesions

Methodology

This prospective study enrolled 100 perimenopausal women experiencing AUB. All perimenopausal women with complaints of Abnormal Uterine bleeding admitted in the hospital underwent a complete clinical workup after written and informed consent. Participants underwent a comprehensive evaluation including:

- Medical history-Assessment of menstrual history, medical conditions, and medications
- **Physical examination:** Pelvic examination and assessment of uterine size and morphology. On gynaecological examination, cervix (Position of cervix, condition of cervix- erythematous, hypertrophy, mobility, presence of polyp, ectopy), uterus (Size, position, consistency, and mobility) and adnexa assessed.
- **Laboratory tests:** Complete blood count, ESR, platelet count, RFT, LFT, Coagulation profile, Thyroid profile. blood chemistry, and hormone level assessments (FSH, LH, and estrogen).
- **Imaging studies:** Transvaginal ultrasound and/or saline infusion sonography (SIS) to evaluate the uterus and ovaries.
- **Endometrial sampling:** Office-based endometrial biopsy or dilation and curettage (D&C) to assess for endometrial hyperplasia or cancer.

Observations and Results

Table 1: Proportion of cases of perimenopausal AUB

Total No. of Gynaecological Admissions	603
Total No. of cases of perimenopausal women with complaints of AUB	100 (16.5%)

Of the total number of gynaecological admissions in the hospital i.e. 603, 16.5% comprised of perimenopausal women with complaints of Abnormal Uterine Bleeding, who were taken up for the study.

Table 2: Distribution of cases according to type of menstrual abnormality

Menstrual abnormality	No. of Cases	%
Amenorrhoea	7	7%
Menorrhagia	29	29%
Metrorrhagia	16	16%
Menometrorrhagia	22	22%
Amenorrhoea F/By Bleeding	11	11%
Oligomenorrhoea	10	10%
Polymenorrhagia	5	5%

Most patients presented with menorrhagia, which is a commonly found menstrual abnormality in perimenopausal women followed by menometrorrhagia.

Table 3: Distribution of Associated Risk factor

Risk factor	No. of cases	Percentage%
Obesity	12	12%
Thyroid Disorders	6	6%
History of Pcos	2	2%
Hypertension	1	1%
Diebetes mellitus	0	0.00

Obesity was found to be most commonly associated risk factor, followed by hypertension and thyroid disorders.

Table 4: Duration of Symptoms of Patients Presenting With AUB

Duration	No. of cases	Percentage (%)
Less than 6 months	53	53%
More than 6 months	25	25%
More than 12 months	22	22%

In this study, it is observed that the maximum number of patients attended the hospital for getting checked after suffering for 3–6 months (53%).

The limitations of our study include its monocentric nature, the possibility of inaccurate or incomplete information from the medical files of patients, and the relatively small sample size and heterogeneity of the research population, which can be a significant source of bias. These limitations can lead to the omission of some important risk factors that contribute to the occurrence of functional AUB, but also to an overestimation of the influence of some factors with an

objectively weaker influence on the occurrence of this disorder. Also, in our cross-sectional study, the patients were not followed up after the first contact with the investigators, and the investigators were not involved in diagnostic procedures performed. Therefore, the results of additional diagnostics remained unknown.

Discussion

Result

The study was conducted from January 2024 to December 2024 in Vardhman Mahaveer medical College and Safdarjung hospital, New Delhi in collaboration with Department of Pathology, Vardhman Mahaveer medical College and Safdarjung hospital, New Delhi. Out of 603 gynaecological admissions during the study period, there were 100 perimenopausal women who presented with the complaints of abnormal uterine bleeding and were included in the study. The Risk factor found to be most commonly associated with Abnormal Uterine Bleeding in the present study was Obesity, present in Hypothyroidism tends to cause menorrhagia or polymenorrhoea, these symptoms being present in 29% cases. Ajmani. N, Sarbhai. V (2015) studied the prevalence of thyroid disorders in patients with 100 women of 15-45 yrs of age with menstrual disorders and found that, 44% had thyroid disorders in which subclinical hypothyroidism was prevalent in 20%, overt hypothyroidism in 14%, and overt hyperthyroidism in 8% of the women. Autoimmune thyroid antibodies were present in 30% patients of women with menstrual disorders [6].

In Patil *et al.* study, endometrial hyperplasia (40%) was most commonly associated with AUB [7]. Study done by Bhosle *et al.* showed 17.8% of cases with simple hyperplasia [8]. In study by El-khayat *et al.* among those who had endometrial thickness of 20 mm or greater, hyperplasia was found only in 20% [9].

In this study, 103 numbers of perimenopausal hysterectomized patients were analyzed. Most number of patients (69.67%) were between 40 and 45 years age group. The common menstrual problem was menorrhagia (43.69%). This finding was comparable with the study of Jetley *et al*. [10].

In this study, the proportion of obese women in the case group was considerably higher than in the control group, indicating that obesity is a risk factor for AUB. This condition may be attributed to the conversion of excessive androgens in the adipose tissue of obese women into estrone via aromatisation, leading to endometrial hyperplasia [11].

Conclusion

AUB continues to be one of the most commonly encountered complaints in gynaecologic practice. This study highlights the importance of comprehensive evaluation in perimenopausal women with AUB. Hormonal fluctuations, endometrial hyperplasia, and uterine fibroids were the most common underlying causes. Accurate diagnosis and targeted treatment can significantly improve quality of life for these women. Transvaginal ultrasonography is a better diagnostic procedure to use to exclude endometrial and intrauterine abnormalities. It can be used as a routine first line investigation in patients with abnormal uterine bleeding.

Medical therapy is an effective treatment option in case of perimenopausal AUB. A newer hormonal treatment option for AUB is MIRENA. It is used in very limited numbers of patients in our setup due to it being very expensive. The definitive surgical treatment is Hysterectomy as it removes the underlying diseased organ.

Conflict of Interest: Not available

Financial Support: Not available

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