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Categorization of Peri - Menopausal Women with AUB according to PALM - COEIN FIGO Classification

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Abstract: ***Background: The most prevalent menstruation symptom during perimenopause is abnormal uterine bleeding (AUB). The working group on menstrual disorders of the International Federation of Gynaecology and Obstetrics has created a categorization system (PALM - COEIN) for causes of AUB in non - gravid women. The present study was undertaken to categorize perimenopausal women with AUB according to the PALM - COEIN classification. Material and methods: The present prospective observational study was conducted on n=300 perimenopausal women. A detailed history and clinical examination were performed in all patients and clinical diagnosis was assessed as per PALM - COEIN classification. Results: The majority of the patients were of the 45 - 50 years of age group (47%) followed by 40 - 45 years (41%) and >50 years (12%). Hypertension was found in 20% of patients whereas, diabetes mellitus, obesity, and thyroid disorders were seen in 14%, 10%, and 5% of patients respectively. Heavy menstrual bleeding was the predominant symptom present in 62% of patients followed by irregular bleeding (22.33%), frequent menses (12.33%), and intermenstrual spotting (3.33%). In 28.33% of patients, the clinical diagnosis was leiomyoma followed by ovulatory (22.67%) and endometrial cause (20.67%). Conclusion: PALM - COEIN classification was found to be effective in the categorization of etiological factors related to the AUB in perimenopausal women.***

Keywords: Abnormal uterine bleeding, Adenomyosis, Leiomyoma, PALM - COEIN, Perimenopause.

1. Introduction

The most prevalent menstruation issue during perimenopause is abnormal uterine bleeding (AUB). A categorization system (PALM - COEIN) for causes of the AUB in non - gravid women has been developed by the working group on menstrual disorders of the International Federation of Gynaecology and Obstetrics (FIGO). The systems are useful, universally known, and help physicians and researchers with research, therapy, and prognostication. [1] AUB can be either chronic or acute. AUB prevalence varies considerably among populations, ranging between 10% and 30% in reproductive age, necessitating the use of a substantial amount of medical resources. [2 - 4]

According to a general definition, AUB refers to any uterine bleeding that occurs in absence of pregnancy but is abnormal in terms of regularity, frequency, volume, or duration. [2, 5]AUB is characterized as occurring between two and eight years before menopause and one year following the final menstruation. [6] It has been shown that follicular development is unpredictable at this period, and as a result, estrogen levels are variable and there are more anovulatory cycles, which increases the likelihood of abnormal uterine bleeding.

PALM - COEIN classification system comprised nine different categories namely Polyp, adenomyosis, leiomyoma, malignancy and hyperplasia, coagulopathy, ovulatory dysfunction, endometrial, iatrogenic, and not yet classified. The classification's PALM side deals with structural causes that may be assessed using imaging methods and/or histopathology, while the COEIN side looks into underlying medical abnormalities.

While there is always a chance of category reallocation, a complete histological workup and clinical correlation are essential. When evaluating a correlation, one can determine how accurately a clinical diagnosis falls into the category of AUB and when it is necessary to pursue a pathological correlation, particularly for the PALM component of the PALM - COEIN, whereas the COEIN (functional) component is assessed using other investigations, such as a hematological and endocrinological work up. FIGO advises endometrial tissue testing as the first line of treatment for perimenopausal women with AUB. [7]

To comprehend and recognize the reasons and contributors to the symptoms, the PALM - COEIN system structurally assesses AUB in females. Also, the PALM - COEIN method aids in determining the contribution of various pathologies in any patient. Moreover, any coincidental pathology without symptoms that makes little contribution to AUB can be recognized. [8] This study was conducted to categorize perimenopausal women with AUB according to the PALM - COEIN classification.

2. Material and method

This study was conducted at AL - AMEEN medical college, Vijaypur for 1year from June 2021 to June 2022 after the approval of IEC. During this study period, 300 perimenopausal women were enrolled in the outpatient department (OPD). Peri menopausal patients and persons having a history of unpredictable, irregular menses with abnormal bleeding for a prolonged duration were part of the study. Also, the patients with increased frequency of menses and intermenstrual bleeding for at least 3 months of duration were included in this study. Whereas, women with cervical cause for vaginal bleeding, pregnant women with bleeding, and reproductive age group with AUB were excluded from

the study. All the included patients underwent structured history, detailed physical and local examination, necessary blood investigations, and pelvic ultrasonography was done. Cervical & Endometrial biopsy and Hysterectomy specimens were obtained for histopathology if needed. According to the PALM - COEIN classification system, the possible causes were identified and the patients have categorized accordingly. Women with cervical causes for vaginal bleeding, pregnant women with bleeding, and the reproductive age group with AUB were excluded from the study.

Statistical analysis

SPSS V 16 software was used to analyze the data. Continuous variables were expressed in terms of mean±SD whereas, categorical variables were depicted in frequency and percentage. The chi - square test was used to find the association between variables. $P<0.05$ was considered statistically significant.

3. Results

The majority of the patients were of the 45 - 50 years of age group (47%) followed by 40 - 45 years (41%) and >50 years (12%) (table 1).

Table 1: Distribution of subjects according to age categories

Age (years)	Frequency (n)	Percentage (%)
40 - 45	141	47
46 - 50	123	41
>50	36	12
Total	300	100

Table 2 suggested that among study subjects hypertension was found in 20% of patients whereas, diabetes mellitus, obesity, and thyroid disorders were seen in 14%, 10%, and 5% of patients respectively.

Table 2: Distribution of subjects according to comorbidities

Comorbidities	Frequency (n)	Percentage (%)
Obesity	30	10
Thyroid disorder	15	5
Hypertension	60	20
Diabetes mellitus	42	14

Heavy menstrual bleeding was the predominant symptom present in 62% of patients followed by irregular bleeding (22.33%), frequent menses (12.33%), and intermenstrual spotting (3.33%) (table 3).

Table 3: Distribution of subjects according to presenting symptoms

Presenting symptoms	Frequency (n)	Percentage (%)
Heavy menstrual bleeding	186	62
Irregular bleeding	67	22.33
Inter menstrual spotting	10	3.33
Frequent menses	37	12.33
Total	300	100

Table 4 shows that in 28.33% of patients, the clinical diagnosis was leiomyoma followed by ovulatory (22.67%) and endometrial cause (20.67%).

PALM - COEIN	Frequency (n)	Percentage (%)
Polyp	8	2.67
Adenomyosis	28	9.33
Leiomyoma	85	28.33
Malignancy	8	2.67
Coagulation abnormality	3	1
Ovulatory	68	22.67
Endometrial cause	62	20.67
Iatrogenic	13	4.33
Not - classifies	25	8.33

4. Discussion

The PALM - COEIN classification was developed to rule out all possibilities of etiologies responsible for AUB. This system of classification is recognized by the “International Federation of Gynaecology and Obstetrics (FIGO) ”. The present study was undertaken to categorize perimenopausal women with AUB according to the PALM - COEIN classification.

In the current study, we studied n=300 peri menopausal women with AUB prospectively. Here in the current study population, the majority of women with AUB belonged to the 45 - 50 years age group followed by 40 - 45 years and >50 years. These findings are following the previous reports. [9 - 11] In the current study hypertension was the predominant comorbidity seen in 20% of patients followed by diabetes mellitus, obesity, and thyroid disorder observed in 14%, 10%, and 5% of the patients respectively. Similarly, studies of Mitra N. et al. and Subedi S. et al. suggested comparable findings. [10, 12] Moreover, the study of Mishra D, and Sultan S suggested a significant association between obesity and AUB. [11] This could be due to increased exposure to estrogen in obese women by peripheral aromatization of adrenal androgens increases the incidence of polyps, leiomyomas, and endometrial carcinoma. The risk of leiomyomas is seen to be increasing by 21 % for each 10 - kg increase in body weight. [13 - 15]

In this study heavy menstrual bleeding was the predominant presenting symptom seen in 62% of women followed by irregular bleeding, frequent menses, and inter menstrual spotting seen in 222.33%, 12.33%, and 3.33% of women respectively. Similarly, in the study of Mishra et al., the most common presenting symptom was heavy menstrual bleeding (32.6%) followed by inter menstrual heavy menstrual bleeding (28.3%). [11] Further, chronic an ovulation is a predominant phenomenon in perimenopause which is associated with an irregular and unpredictable pattern of bleeding that varies in amount, duration, and character. In our study, PALM - COEIN classification suggested leiomyoma as the major contributor of AUB followed by ovulatory, endometrial cause, adenomyosis, iatrogenic, polyp, malignancy, coagulation abnormality, and non - classifies factors. Similarly, various studies have shown leiomyoma as the most common cause followed by ovulatory causes. [10, 16, 17] These findings suggested that PALM - COEIN classification can facilitate the consideration of all possible etiologies. However, more accurate and consistent investigations are required to rule out organic disease mainly precancerous lesions and cancer. [10] A previous report suggested the classification system

along with histopathological assessment should be considered to determine AUB in peri - menopausal women.

5. Conclusion

Leiomyoma and ovulatory were the most common contributor of AUB suggested by the PALM - COEIN classification. Post - clinical assessment, perimenopausal women should be evaluated with confirmatory investigations including pap smear, ultrasonography, and histopathological investigations to identify detailed and accurate etiology which could be missed by the PALM - COEIN classification system.

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