DETERMINATION OF CAUSES OF MENSTRUAL DISORDERS USING PALM-COEIN CLASSIFICATION SYSTEM

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■ ABSTRACT

Objective: To determine the causes of menstrual disorders according to PALM-COEIN classification system by international federation of gynecology and obstetrics (FIGO).

Methodology: This descriptive study was conducted in Department of Obstetrics & Gynaecology, Hayatabad Medical Complex, Peshawar, from 8th August 2019 to 9th August 2020. Patients admitted for hysterectomy/ endometrial sampling due to abnormal uterine bleeding (AUB) were included in the study through non-probability convenient sampling. Detailed history, clinical examination and relevant investigations were recorded on a predesigned proforma. Abnormal uterine bleeding was then classified according to FIGO new system (PALM-COEIN). Descriptive statistics were used in the form of frequencies and percentages.

Results: A total of 78 patients underwent surgical intervention for abnormal uterine bleeding. The mean age of the participants was 44.0±3.9 years. Most of the patients were either multi or grand multipara (n=75, 96.2%). Majority reported to have regular bleeding (n=55, 70.5%), frequent cycles (n=56,71.8%), prolonged flow (n=54, 69.2%) and heavy blood loss (n=61,78.2%). The PALM portion comprised of 33 (42.3%) causes of AUB, while COEIN portion comprises of 29 (37.2%) causes while sixteen (20.5%) cases were having more than one underlying pathologies. AUB-L (Leiomyoma) was most common cause in the PALM group (n=13, 16.7%), while AUB-E (Endometrial) in the COEIN group (n=13, 16.7%).

Conclusion: Multiple/mixed etiologies were the most common causes of AUB, followed by AUB-L and AUB-E.

Keywords: Abnormal uterine bleeding; Heavy menstrual bleeding; Menstrual disorders.

■ INTRODUCTION

Menstrual disorders manifest in a wide range of clinical presentation.[1] There is inconsistency in the nomenclature used for categorization of various menstrual disorders. This issue has created problems in the management of abnormal uterine bleeding (AUB) and has affected the ability of the clinicians and investigators to study the condition appropriately. [2,3] In order to overcome these issues, international federation of gynecology and obstetrics (FIGO), for causes of AUB in non-pregnant women, developed a classification system (PALM-COEIN).[4] FIGO has also replaced the older terminologies used for menstrual disorders by new ones. AUB has been defined as "the menstrual cycle that is abnormal in volume, frequency, regularity, or duration and not related to pregnancy complications". FIGO has also described the pattern of menstrual cycle bleeding, including "length of menstrual cycle (frequent<24 days, normal= 24-38 days, infrequent>38 days), variability (prolonged>8days, normal= 4.5-8 days, shortened<4-5days) and amount of blood loss (>80 ml as heavy; 5-80ml as normal; <5ml as scanty)".[5,6] FIGO has also introduced the terminologies of Acute and chronic AUB. "Chronic AUB has been defined as abnormal bleeding from the uterus that has been present for the majority of the preceding six months while Acute AUB is an episode of heavy bleeding that urgently requires management to minimize the morbidity".[4,5]

The PALM-COEIN acronym consists of nine categories. PALM portion refer to structural causes of AUB and can be measured through imaging or by histopathology. It includes, "P (polyp), A (adenomyosis), L (leiomyoma), M(malignancies)", while the COEIN portion refers to nonstructural causes and includes "C (coagulation disorders), O (ovulatory), E (endometrial), I(iatrogenic), N (not yet classified)".[4,6,7]

AUB is a common clinical presentation in gynecological OPD. Trans vaginal ultrasound and MRI has an important role in the diagnosis of structural causes of AUB including sub classification of fibroids, adenomy-

osis and polyp.[8,9] Menstrual disorders have financial implications. Management should be individualized and structured for logical allocation of resources.[10,11] We have selected this topic because of scarcity of local data regarding the new classification system and in order to improve our practices as per the internationally standardized system.

METHODOLOGY

This descriptive study was conducted in Department of Obstetrics & Gynaecology, Hayatabad Medical Complex, Peshawar, from 8th August 2019 to 9th August 2020. All patients admitted in the ward for hysterectomy/ endometrial sampling for AUB were included in the study. Patients were selected through non-probability convenient sampling after informed written consent. Women having postmenopausal bleeding and those having abnormal bleeding due to pregnancy complications were excluded from the study.

PALM-COEIN system was used to classify the causes of AUB. Coagulation disorders, in this system, include a wide spectrum of systemic disorders of hemostasis and suspected in patients having pubertal menorrhagia, recurrent PPH, easy bruising, bleeding gums, and epistaxis; Chronic Endometritis was included in the endometrial causes; Ovulatory disorders were determined by history, serum progesterone and confirmed by histopathology; and latrogenic causes include use of hormones, contraceptive devices, and anticoagulants. The first word of the cause was used as a suffix to AUB to describe the specification. Detail history and clinical examination was done. Relevant investigations including full blood count (FBC), pelvic/TVS ultrasound, coagulation profile and hormonal assay (where required), histopathology (after hysterectomy/endometrial sampling). All the relevant data were entered in a predesigned proforma. The data were analyzed using SPSS version 21.

RESULTS

A total of 78 patents were included in the study. Majority of the patients were in the age group between 40-50 years, with a mean age of 44.0 ± 3.9 years. A total of 75 (96.15%) patients were either multi or grand multipara. Majority reported to have regular bleeding (n=55, 70.5%), frequent cycles (n=56,71.8%), prolonged flow (n=54, 69.2%) and heavy blood loss (n=61,78.2%). The PALM portion comprised of 33 (42.3%) causes of AUB, while COEIN portion comprises of 29 (37.2%) causes. AUB-L was most common cause in the PALM group, while AUB-E in the COEIN group; 13 (16.7%) cases each. Sixteen (20.5%) cases were having more than one underlying pathologies with 8 (10.2%) having AUB L and A; 6 (7.7%) having AUB O and E; and 2(2.6%) patients having AUB P and A. The details are given in tables.

DISCUSSION

There used to be a general inconsistency in the terminologies used for menstrual disorders as there was no universally accepted format to describe this problem which is expected to be resolved by the use of PALM-COEIN system.[12]

In a study conducted by Tater A et al, majority of the patients were in the age group between 40-49years, which is comparable to our study.[13] Similar findings were shown by Metra N in their study, where 44% of patients were in the 45-50 years age group.[12]

Most of our patients were either multipara or grand multipara, similar findings were reported by other studies.[14, 15] In our study regular, frequent cycle with prolong and heavy flow was the most common pattern of menstrual cycle. Ansari A et al has reported heavy, irregular cycle with intermenstrual bleeding.[14]

In our study majority of the patients were having regular, frequent cycle with prolong, heavy flow. Most of the patients were having mixed causes for AUB. Among the PALM group AUB-L was the most common cause of AUB, while among COEIN, AUB-E was the

Table 1: Demographic details (n=78)

Age	≤40	17 (21.79%)
	>40-50	53(67.94%)
	>50	8(10.25%)
Parity	P1	3(3.84%)
	P2-P4	25(32.05%)
	≥P5	50(64.10%)

Table 2: Parameters of menstrual cycle (n=78)

Parameters of menstrual cycle		Frequencies (Percentages)
Regularity	Regular	55(70.5%)
	Irregular	23(29.5%)
Frequency	Frequent	56(71.8%)
	Normal	17(21.8%)
	Infrequent	5(6.4%)
Duration of flow	Prolonged	54(69.2%)
	Normal	24(30.8%)
	Shortened	0%
Volume of blood loss	Heavy	61(78.2%)
	Normal	17(21.8%)

Table 3: Classification of causes of AUB according to PALM-COEIN (n=78)

PALM-COEIN	Frequencies	Percentages
AUB-P	5	6.4%
AUB-A	11	14.1%
AUB-L	13	16.7%
AUB-M	4	5.1%
AUB-C	0	0
AUB-O	11	14.1%
AUB-E	13	16.7%
AUB-I	5	6.4%
AUB-N	0	0
AUB-mixed	16	20.5%

most common cause.

In our study 42.3% causes were related to structural causes i.e., PALM, while 37.2% were nonstructural causes i.e., COEIN and 20.5% were mixed causes. Ansari A et al has reported 62.6% structural causes and 37.4% nonstructural causes of AUB.[14] In another study, Ovulatory disorders (57.7%) were the most common causes of AUB, followed by AUB-P (16.2%).[16]

In our study 20.51% cases were having multiple underlying causes for AUB, followed by AUB-L and AUB- E, each having 16.7% incidence. Ansari A has documented AUB-L (41.1%) ad AUB-O (37.28%) as the most common causes of AUB.[14] Similar results were shown in another study reporting AUB-L (25%), AUB-O (24%) and AUB-A (15%).[17] In another study, AUB-O accounted for 608 (57.7%) cases, followed by AUB-P in 171 (16.2%) and AUB-L in 130 (12%) women.[18]

The PALM-COEIN system was developed to standardize the nomenclature and to solve the problem of the heterogeneous methodologies and classifications of AUB that were previously used.[19] We need to adopt this new classification system at national level in order to standardize the terminologies for better understanding of clinicians and investigators.

CONCLUSION

Multiple/mixed etiologies were the most common cause of AUB, followed by AUB-L and AUB-E. Most of the patients were having frequent, regular cycle with prolonged flow and heavy blood loss.

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Author's Contribution

Conflict of Interest

Authors declared no conflict of interest

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Data Sharing Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.