Original Paper

The Prevalent Cases of Endometrial Carcinoma in Different Life Periods of Women-Clinical and Histopathological Diagnosis

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ABSTRACT: Abnormal uterine bleeding is a term used to describe any irregular bleeding from the uterus that is not part of a woman's normal menstrual cycle and can happen during different life periods. Abnormal uterine bleeding can have structural etiologies (polyp, adenomyosis, leiomyoma, malignancy) or nonstructural etiologies (coagulopathy, ovulatory dysfunction, and not-classified). The post- and pre-menopausal period requires a detailed investigation to establish the etiology of the bleeding because the chances that the woman has a malignancy are plentiful in this period. The treatment plan is determined based on the underlying cause of the bleeding. The main objective of this paper was to determine the prevalence of endometrial carcinoma in different periods, focusing on the postmenopausal period. This research was a cross-sectional study and included 79 cases of abnormal uterine bleeding in different periods of women's lives. Our study found that abnormal uterine bleeding occurs more frequently during the premenopausal period (59%) and that the causes of irregular bleeding during this period were mainly benign. Our study focused on the postmenopausal period, where we found that 32.9% of irregular uterine bleeding occurs during this period, and the leading causes were malignant pathologies (83.3%), mainly endometrial adenocarcinomas. The average age was 66.7 years. During the study, it was observed that 50% of women with abnormal uterine bleeding due to malignancy were classified as overweight, 25% were obese, and 25% had normal weight. It was confirmed that obesity is a co-factor of malignancy in the postmenopausal period, and the pathophysiological mechanism is well understood now. Our study also found a high number of co-morbidities among women with abnormal uterine bleeding due to malignancy. We came to the conclusion that any abnormal uterine bleeding should be initially investigated in a multidisciplinary manner, an accurate diagnosis should be determined, and then a treatment plan should be established. The treatment strategy should be determined depending on the cause of abnormal bleeding.

KEYWORDS: Abnormal uterine bleeding; premenopausal period; postmenopausal period; malignancy.

Introduction

Abnormal uterine bleeding (AUB) is a term used to describe any irregular bleeding from the uterus that is not part of a woman's normal menstrual cycle.

This can include bleeding that is heavier or lighter, and it can happen during different life periods for a woman, including menarche, the reproductive period, perimenopause, and postmenopausal bleeding.

By PALM-COEIN classification, abnormal uterine bleeding can have structural etiologies (polyp, adenomyosis, leiomyoma, malignancy, and hyperplasia) or nonstructural etiologies (coagulopathy, ovulatory dysfunction, endometrial, iatrogenic, and not-classified) [1].

Diagnosing abnormal uterine bleeding typically involves a combination of medical history, physical examination, and diagnostic tests, including laboratory and imaging tests, as well as an endometrial biopsy [2,3].

The specific tests depend on the patient's symptoms and medical history. The post-and pre-menopausal period requires a detailed investigation to establish the aetiology of the bleeding because in this period the chances that the woman has a malignancy are great [4].

Once a diagnosis has been made, the treatment plan is determined based on the underlying cause of the bleeding.

Aim

The main objective of this paper was to determine the prevalent cases of endometrial carcinoma in different periods, focusing on the postmenopausal period.

Material and Methods

This investigation was a prospective cross-sectional study.

The study was conducted in patients with abnormal uterine bleeding from the uterus, of different ages, with an interval of 25-85 years, admitted to the Department of Gynaecology of a tertiary public service institution.

Sample Size

The study included 79 cases of abnormal uterine bleeding, in different periods of women's lives.

The sampling technique was consecutive. Women who underwent dilatation and curettage (D&C) for endometrial sampling with complaints of AUB were included in the study by obtaining histopathological samples.

Age, duration of abnormal uterine bleeding, and observed histopathological spectrum were recorded.

Patients with systemic disease/cause of bleeding such as low platelet count or miscarriage were excluded from the study.

Cases were stratified into reproductive, peri-menopausal, and post-menopausal age groups.

Reproductive age was considered from the age of puberty to the perimenopausal age (approximately 12 to 39 years).

Perimenopausal age was around menopause and was different for every woman (roughly 40-50 years old).

The postmenopausal age group was defined as the permanent cessation of menstruation, confirmed after 12 consecutive months of amenorrhea (median age 50 years and above).

Specimens were immediately fixed in 10% formalin, appropriately labelled for patient name, sex, age, and type of procedure/specimen, and transferred to the histopathology laboratory.

Tissue processing was performed and slides were stained with haematoxylin and eosin under strict quality assurance.

Microscopic evaluation was done by two experienced consultant histopathologists more than 5 years after the study, blinded to the study objectives.

Each specimen was independently evaluated by two consultant histopathologists.

Materials and the route followed

This study was conducted over a period of 10 months, from December 2021 to September 2022, in a public tertiary service institution using the purposive sampling method.

After adequate information about the purpose, methodology, and benefits of the study, the patient agreed to participate in the study and informed consent was obtained from them.

They were also assured of confidentiality and autonomy.

Socio-demographic data including age, educational level, and economic status were collected.

Identification of patient risk factors such as weight, height, BMI, presence of comorbidities, smoking history, and treatment received, and period of diagnosis were also analysed.

Data were entered into SPSS version 21.

Results were presented as mean±SD for age, frequencies and percentages were calculated for descriptive variables, i.e. normal menstrual pattern, hormonal imbalance pattern, endometrial polyp, chronic endometritis, atrophic endometrium, endometrial hyperplasia, and endometrial carcinoma.

Stratification of age and duration of abnormal uterine bleeding was done to control for confounding factors.

A written informed consent was obtained from all the patients, as well as the approval of the Local Ethics Committee. Anonymity and confidentiality of women's data were ensured.

Results

Out of a total of 79 cases with irregular uterine bleeding; 56.9% (45 cases) of the women were in the perimenopausal period, 32.9% were in the postmenopausal period, while 10.2% were in the reproductive period (Figure 1).
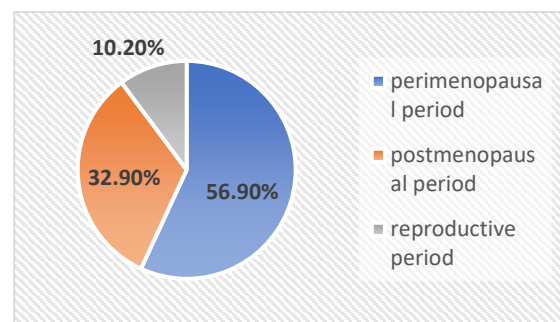

Figure 1. The percentage of abnormal uterine bleeding, according to the periods.

The average age of women with irregular uterine bleeding in the postmenopausal period was 62.03 years, in the perimenopausal period 47.5 years, and in the reproductive period it was 33.3 years. 46.8% of women with irregular uterine bleeding were smokers, while 53.2% were non-smokers (Table 1).

Table 1. Socio-demographic data.

Socio-demographic data	Postmenopausal bleeding	Perimenopausal bleeding	Reproductive ages uterine bleeding	Total
The average ages of women	62.03 years	47.5 years	33.3 years	
Smoking				
YES	5 cases	25 cases	7 cases	37 cases or 46.8%
NO	21 cases	20 cases	1 case	42 cases or 53.2%
				Total 79 cases 100%
Educational level				
High	6 cases	18 cases	3 cases	27 cases 34.2%
Secondary	15 cases	20 cases	4 cases	39 cases 49.4%
Lower	5 cases	7 cases	1 case	13 cases 16.4%
				Total 79 cases 100%
Economic status				
High	2 cases	5 cases	2 cases	9 cases 11.4%
Middle	13 cases	19 cases	3 cases	35 cases 44.3%
Low	11 cases	21 cases	3 cases	35 cases 44.3%
				Total 79 cases 100%

In 79 cases with irregular uterine bleeding in different lifestyles, exploratory curettage and histopathological analysis were performed, resulting in 67 cases (84.8%) of abnormal uterine bleeding due to benign causes such as endometrial hyperplasia simplex, endometrial polyp, endometrial atrophy, submucous fibroids, etc.

Meanwhile, 12 cases (15.2%) of abnormal uterine bleeding were due to malignant causes such as endometrial adenocarcinoma (Figure 2).
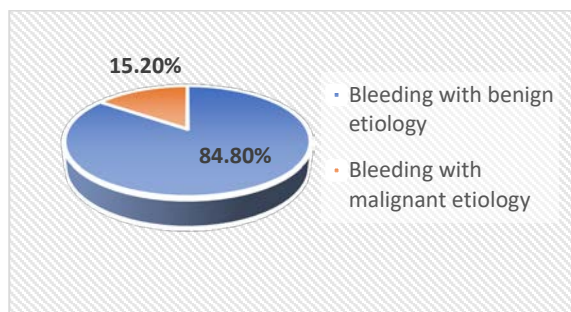

Figure 2. The percentage of abnormal uterine bleeding, according to the etiology.

Out of a total of 12 cases with malignant pathology, 10 cases (83.3%) were women with abnormal uterine bleeding in the postmenopausal period, while 2 cases (16.7%) were women with irregular bleeding in the perimenopausal period.

All women with abnormal uterine bleeding in the reproductive period had benign causes such as endometrial polyp, ovulatory dysfunction, etc. (Figure 3).
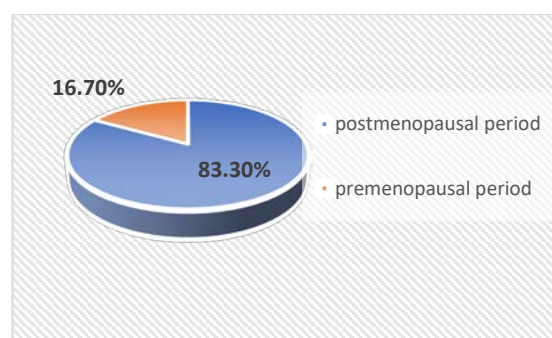

Figure 3. Distribution of cases with malignant pathology according to periods.

The average age of women with malignant pathology was 66.7 years, while the average postmenopausal period was 17.3 years.

The average age of menopause onset was 49.4 years.

Out of 12 cases with malignant pathology, 6 cases (50%) had Class I obesity with an average BMI of 31.63kg/m2, 3 cases (25%) were overweight with an average BMI of 28.0kg/m2, and 3 cases had normal weight with an average BMI of 23.3kg/m2.

All women with abnormal uterine bleeding due to malignant causes had co-morbidities and used daily medication therapy, with the most common co-morbidities being: arterial hypertension, Class I obesity, type II diabetes mellitus, chronic anaemia, etc. (Table 2).

Table 2 Distribution in percentages of co-morbidities.

Co-morbidities	Cases (percentage)
Arterial Hypertension	12/12 (100%)
Class 1 Obesity	6/12 (50%)
Type 2 diabetes mellitus	5/12 (41.6%)
Anaemia chronic disease	4/12 (33.3%)
Overweight	3/12 (25%)

Discussions

Abnormal uterine bleeding can occur at any stage of a woman's life, and depending on when it happens; it can have different causes and treatments.

Our study found that abnormal uterine bleeding occurs more frequently during the premenopausal period (56.9%), and the causes of irregular bleeding during this period are mainly benign, similar to the results of a study by Berndt-Johan Procopè [5].

Although less frequent, the most common cause of abnormal bleeding during the postmenopausal period is malignancy.

Due to the malignancy-related causes of irregular uterine bleeding that occur in the postmenopausal period of a woman, our study focused on this period, where we found that 32.9% of irregular uterine bleeding occurs during this period, and the main causes were malignant pathologies (83.3%), mainly endometrial adenocarcinoma.

With an average age of 66.7 years, the same results were found in a large number of studies on the malignant causes of abnormal uterine bleeding in the postmenopausal period [6,7,8,9].

The diagnosis of the cause of abnormal uterine bleeding was made in our study using exploratory curettage and histopathological analysis for the postmenopausal, perimenopausal, and reproductive periods, while the adolescence period was excluded from this diagnostic plan, respecting the age-specific characteristics, as was done in many other studies [10,11,12,13].

In our study, the average age of women entering menopause was 49.4 years, which was found to be similar to the average age of menopause in the world, which is between 47.5 and 51.4 years [14].

During the study, it was observed that 50% of women with abnormal uterine bleeding due to malignancy were classified as overweight, 25% were obese, and 25% had normal weight.

It was confirmed that obesity is a co-factor of malignancy in the postmenopausal period, and the pathophysiological mechanism is well understood now these findings are also described in many other studies [15,16,17].

Additionally, our study also found a high number of co-morbidities among women with abnormal uterine bleeding due to malignancy, such as hypertension, class I hypertension, class I obesity, type II diabetes mellitus, chronic anemia, and overweight, which is also confirmed by Yang X et al. study [18].

Conclusions

We came to the conclusion that any abnormal uterine bleeding should be initially investigated in a multidisciplinary manner, the accurate diagnosis should be determined, and then a treatment plan should be established.

The treatment strategy should be determined depending on the cause of abnormal bleeding.

In any abnormal uterine bleeding in the premenopausal period, especially in the postmenopausal period, it is cost-effective to perform an exploratory curettage and confirm the histopathological diagnosis first, and then determine the treatment strategy.

Since the role of metabolic syndrome in endometrial cancer is well known, all women in the pre and postmenopausal periods are recommended to have regular physical activity, reduce stress, maintain a normal weight, and properly manage hypertension, diabetes mellitus, anaemia, and hyperlipidaemia.

Conflict of interests

None to declare

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