

## PATHOLOGICAL CAUSES OF ABNORMAL UTERINE BLEEDING (AUB) IN A SAMPLE OF WOMEN IN BABYLON GOVERNORATE

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### ABSTRACT

**Background:** Abnormal uterine bleeding (AUB) is one of the most common complications that affect women during her reproductive life. The incidence is high during the reproductive age of the female; it is assessed that it influences 30% of all ladies at a few time in their lives. Roughly 5% look for care each year. **Aim of study:** The present study was conducted to evaluate the most common causes of abnormal uterine bleeding and their frequencies in related to age groups of the patient. **Material and Methods:** in 100 endometrial samples that was result as either endometrial curetting or hysterectomy specimens. The cases had been collected randomly (July 2018 – July 2020) from some of private labs and Al-Hilla Teaching Surgical Hospital. Depending on the morphological findings and clinical history the diagnosis was made. **Results:** Out of 100 cases of AUB 66 cases (66%) due to organic causes while 34 cases (34%) due to non-organic causes. The most frequent organic cause was leiomyoma 25 cases (38%) followed by pregnancy related conditions 15 cases (31.82%) and the most frequent histopathological pattern of non organic causes was proliferative endometrium 18 (52 %) followed by secretory endometrium 12 (23%). **Conclusions** *Leiomyoma*, the proliferative endometrium and endometrial hyperplasia were recorded the most frequent causes of AUB in pre and peri- menopausal age groups.

**KEYWORDS:** Abnormal uterine bleeding (AUB), classification of AUB.

### INTRODUCTION

Abnormal uterine bleeding is one of the most common complications that affect the life and healthy state of women during her reproductive life.<sup>[1]</sup> Abnormal uterine bleeding (AUB) is defined as “bleeding from the uterine corpus that is abnormal in regularity, volume, frequency or duration”. AUB and its sub group, heavy menstrual bleeding.<sup>[2]</sup>

The incidence is high during the reproductive age of the female;; it is affects 30% of all women at some time in their lives.<sup>[3]</sup> Identify the causes of AUB remains a major challenge for investigators, clinicians and educators.<sup>[3,4]</sup>

Understanding and the information about the menstrual physiology offer assistance us in classifying the causes of AUB, and can aid in identify the condition. Assessment initiates with getting a history with add up to physical exam, total examination with or without pelvic imaging. The best preventive measure is teaching the patient and take cares on monitoring menstrual cycles and recognizing when offer assistance is fundamental.<sup>[5]</sup>

**Acute AUB** is defined as irregular and heavy menstrual bleeding last for the 6 months while **chronic AUB**, irregular, heavy, prolonged bleeding can result in anemia, interfere with daily activities, and increase alarms about uterine cancer. When vaginal bleeding during pregnancy is excluded, the term dysfunctional uterine bleeding was used.<sup>[4,6]</sup>

#### Cause of abnormal uterine bleeding

**A- Systemic causes** like problems in blood clotting and endocrine problems (Thyroid Dysfunction).<sup>[5]</sup>

**B- Gynecological causes**, these causes can be divided into hormone imbalances (anovulation, Polycystic ovarian syndrome), structural abnormalities in the uterus (polyps fibroid, adenomyosis), endometrial hyperplasia. some types of cancer like vaginal, cervical & endometrial carcinoma, infection of uterus and cervix.<sup>[6]</sup>

## Evaluation the patient with Abnormal uterine bleeding

**A- History:** The doctor should get a complete history from the patient. This include the most important points:<sup>[7]</sup>

**1-Menstrual history** we should take a complete information about {age at menarche, last menstrual period, Menses regarding the *frequency*, is divided into three categories: frequent (less than 24 days), normal (24 to 38 days), or infrequent (more than 38 days),*regularity* the cycle can be absent, regular (with a variation of +/- 2 to 7 days), or irregular (more than 20 days),the *duration* can be either prolonged cycle (more than 8 days), or short duration (less than 4 days),the, *volume of flow* ; heavy flow (> 80 mL), or light (< 5 mL of blood loss).<sup>[8]</sup>

**2-Sexual and reproductive history, these include:** obstetrical history including the number of pregnancies and type of labour fertility ,recent contraception, history of sexually transmitted infections.

**3-Associated symptoms.**

**4-Family history and Social history**

**The physical exam should include** assess the patient for the vital signs, body mass index , pallor , excessive hair growth patterns ,thyroid gland enlargement, an abdominal and pelvic exam, as well as a pap smear if needed, should have been performed.<sup>[9]</sup>

## Evaluation

**Laboratory testing:** general investigation should have been done for any patient and there is special investigation variable in relation to the case such as hormonal assessment,<sup>[10]</sup>

**Imaging studies.**<sup>[10,11]</sup>

**1- Transvaginal ultrasound** It is a primary and early study that can be done to determine the size and shape of the uterus in a patient who is experiencing abnormal uterine bleeding.

**2-MRI** this can be useful in surgical planning, provides detailed images.

**3-Hysteroscopy and sonohysterography.**<sup>[12,13]</sup>

**Endometrial tissue sampling** it should be done for women at high risk for hyperplasia or malignancy. women with AUB who are 45 years or older, an endometrial biopsy is considered to be the first-line test . Endometrial sampling should also be indicated in women younger than 45 with failure of treatment or persistent bleeding or women with obesity and/or polycystic ovarian syndrome (PCOS).<sup>[14]</sup>

## Differential Diagnosis

This must exclude the complications that occur during pregnancy such as abortion, ectopic pregnancy, also other causes considering the anatomical location like benign growths or malignancy of vulva, vagina and uterus.<sup>[15,16]</sup>

## MATERIALS AND METHODS

### Samples

This retrospective study were done in the period between July 2018 to July 2020, the cases were collected

randomly from laboratory of histopathology in Al-Hilla Teaching Hospital and from some private laboratories in Babylon governorate.

## Clinical and pathological data of the patients

A total of 100 female patients with abnormal vaginal bleeding cases were included in this study and the clinicopathological information were obtained from the pathology reports including the age, the presentation and the diagnosis. The patients were classified into the three age groups: (< 40 years) early reproductive age , women of perimenopausal age (40-55 years), and postmenopausal women (55 years and older) as seen in table (1) and according to the cause so the patients divided into two main groups as seen in table (2).

## The first group includes patients with abnormal uterine bleeding due to non-organic causes includes

1. Secretory endometrium.
2. Proliferative endometrium.
3. Disordered proliferative endometrium.

**The second group includes patients with abnormal uterine bleeding due to organic causes:** leiomyoma, endometrial polyp, endometrial hyperplasia, endometrial carcinoma, pregnancy-related conditions

## Statistical analyses

Using the SPSS version 21 software statistical package using chi-square (P value at significance level < 0.05) and the correlation test (R at significant level 0.3), statistical analysis of all results was performed.

## RESULTS

As indicated in table 1, our study comprised 100 cases of AUB, 34 (34%) of which were caused by non- organic cause, while 66 (66%) by organic cause, The cases categorize according to non- organic cause and to the age group to those under 40 years and in those 40-55 years (perimenapausal) and over 55 years to 16/34 (47.1%),18/34 (27.3%)and no case were included over 55 years , while the cases classify according to organic cause and to the age group to those under 40 years and in those 40-55 years (perimenapausal) and over 55 years to 28(42%),33 (50%),5(8%) as shown in table (1).

According to the most common histopathological cause in AUB due to non organic cause,there were 18(52.9%) due to the proliferative endometrium divided into the age group to those under 40 years and in those 40-55 years to 6(33.3%),12 (66.7%)subsequently and no case were included over 55 years ,while there were 12(35.3%) due to the secretory endometrium divided into the age group to those under 40 years and in those 40-55 years to 6(50%),6 (50%) and no case were included over 55 years and there were 4(11.8%) due to disordered maturation of endometrium divided into the age group to those under 40 years and in those 40-55 years to 2(50%), 2(50%)subsequently and no case were included over 55 years as shown in table (2), According to the most

common histopathological cause in AUB due to organic cause, there were 25(38%) due to the leiomyoma divided into the age group to those under 40 years and in those 40-55 years to 5(20%), 20 (80%) subsequently as seen in, and no case were included over 55 years, there were 18(27%) due to the endometrial hyperplasia. divided into the age group to those under 40 years and in those 40-55 years to 4(22.2%), 14 (72.8%) respectively and no case were included over 55 years, there were 15(23%) due to pregnancy related disorders divided into the age group to those under 40 years and in those 40-55 years to

15(100%), and no case were included in those 40-55 years and over 55 years, there were 4(6%) due to the endometrial polyp divided into the age group to those under 40 years and in those 40-55 years to 2(50%), 2(50%) respectively and no case were included over 55 years, there were 4(6%) due to the endometrial carcinoma, no case were included in the age group under 40 years and in and those 40-55 years, 4(100%) over 55 years as shown in table (2),

**Table (1): Distribution of the case in relation to age of the patients.**

Diagnostic group	<40 years	45-55 years	>55 years	Total
AUB due to non organic cause	16(47.1%)	18 (27.3%)	0	34(34%)
AUB due to organic cause	28(42%)	33 (50%)	5(8%)	66(66%)
Total	44(44%)	51 (51%)	5(5%)	100(100)

**Table (2): Distribution of the case in relation to the cause of AUB.**

AUB due to non organic cause	<40 years	40-55 years	>55 years	Total	P = 0.6
Proliferative endometrium	6(33.3%)	12 (66.7%)	0	18(52.9%)	
Secretory endometrium	6(50%)	6 (50%)	0	12(35.3%)	
Disordered maturation of endometrium	2(50%)	2(50%)	0	4(11.8%)	
Total	14 (44%)	20 (51%)	0	34(100)	
AUB due to organic cause					P = 0
Leiomyoma	5(20%)	20(80%)	0	25(38%)	
Endometrial polyps	2(50%)	2(50%)	0	4(6%)	
Pregnancy related disorders	15(100%)	0	0	15(23%)	
Endometrial hyperplasia	4(22.2%)	14(72.8%)	0	18(27%)	
Endometrial carcinoma	0	0	4(100%)	4(6%)	
Total	26(39%)	36(55%)	4(6%)	66(100%)	

## DISCUSSION

Abnormal uterine bleeding is a serious condition that can be managed with medication or surgery in women of reproductive age. Surgery may be able to cure structural causes of abnormal bleeding, but if there are no structural causes, medicinal treatment can frequently restore regular menstrual periods.<sup>[17]</sup>

When menstruation lasts between 2 and 7 days, occurs every 21 to 35 days, and is not excessive, it is considered normal. AUB occurs when uterine bleeding differs in frequency or quantity from that described above, or when a woman experiences spotting or bleeding between menstrual periods. Ovulation disorders and Structural abnormalities of the female genital organs considering the two most common causes in women who are postmenopausal should seek medical attention immediately if they have any bleeding, as the causes and concerns differ from those experienced by women of reproductive age.<sup>[18]</sup>

In our study, there is a highly significant correlation between AUB due to organic cause and women age group (< 40y) & (45-55 y) 28 (42%) 33 (50%) respectively, and no significant correlation of AUB due to non-organic causes and age group as 16(47.1%) 18

(27.3%) (p value < 0.05). Also, leiomyoma and endometrial hyperplasia are the most common organic causes of AUB that are, clustered mainly in permenapausal age group (45-55 y), 20 (80%), 14 (72.8%) respectively was the most frequent, this could be due to inclusion of biopsy of hysterectomy specimens in our study while in the other were not. These results were agree with Ghani, et. al.<sup>[19]</sup> while disagreed with and Dadhania, et. al.<sup>[20]</sup>

The rate of pregnancy-related causes of AUB diminished steadily with expanding age inside the reproductive life. Conversely, with increasing the age of the patient, neoplasms and inflammatory lesions are the main causes of AUB as revealed in table (2). The findings of Weeks and Duffy are agree with our results that state with increasing age of the patient, increasing risk factors of these diseases.<sup>[21]</sup>

In our study, of uterine bleeding decreased gradually with increasing age within the reproductive life Regarding the Pregnancy related disorders are the most common cause affect age group (<40 years), 15(100%).

Regarding women (> 55y), we found that the endometrial carcinoma is the most common cause of

postmenopausal vaginal bleeding account for 4(6%), this result with Clarke MA,et.al.<sup>[22]</sup> we never find any result against our findings.

Regarding the non organic cause of AUB the statistical difference was not significant (p value > 0.6) as shown in table 2, the proliferative endometrial pattern was the most frequent non organic cause (66.7%) most of them affect the per- menopausal age group (40-55y) which agreed with Ghani et.al,<sup>[19]</sup> Al Mola etal and.<sup>[23]</sup> and Sarwar etal.<sup>[24]</sup> in which the most frequent non organic cause was due to secretory endometrium, these differences could be due to difference in size of the sample.

Endometrial polyps clustered in the age group (>40y) & (40-55y) (50) & (50%) respectively, and (0%) in those patients above the age of 55 years. The increment of incidence of endometrial polyps 10-24%; with increasing age agreed with our descriptions with previous reports that found , its peak occur during the fifth decade of life and gradually diminish after menopause, also; there is no direct evidence for having the endometrial polyp any risk of malignant transformation associated to the adjacent normal endometrium.<sup>[25,26]</sup>

## CONCLUSION

Leiomyoma, the proliferative endometrium and Endometrial hyperplasia were recorded the most frequent causes of AUB in pre and peri- menopausal age groups while The incidence of the malignant tumors of endometrium was increasing with age.

## Recommendations

D&C should be performed for all women with AUB and the specimense should be sent for histopathological examination.

The problem of AUB burdens the economy, employers, as well as women and their families . Postmenopausal bleeding is an disturbing and serious feature because of increasing incidence of endometrial carcinoma in this age group.

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