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## Prevalence of Abnormal Uterine Bleeding and Associated Risk Factors in Women - A Prospective Observational Analysis



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### ABSTRACT

Abnormal Uterine Bleeding is a common but debilitating condition that can cause significant morbidity. This prospective observational study, conducted from January 2021 to June 2021 in the gynecology department of 1000 bedded multi-specialty tertiary care teaching hospital aimed to assess the prevalence, risk factors, causes, and complications of abnormal uterine bleeding. A sample size of 135 patients who fulfilled the inclusion and exclusion criteria was selected. In our study, the prevalence of AUB was found to be 42.2% and the risk factors identified were; Age (41-50 years), BMI (overweight and obese), and parity (multiparous women). Thickened endometrium was the commonest sonographic finding (21%) observed. The frequent clinical presentation noted was pelvic pain (36.8%) and dysmenorrhoea (22.8%). Menorrhagia was the predominant menstrual pattern determined (42.1%). A maximum number of patients were managed with pharmacological therapy (33.3%) and 21% of patients underwent total abdominal hysterectomy. The extensive complication was found to be anemia in 63.2% of women. Since the prevalence rate of AUB was considerable, awareness about AUB should be provided to women by clinical pharmacists about the physician, and in addition, women should be encouraged to report their menstrual abnormalities actively. Early detection would help in prompt management, thereby reducing morbidity. After proper diagnosis, patients can be treated pharmacologically or surgically following the cause leading to a better success rate.



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## INTRODUCTION:

Abnormal uterine bleeding (AUB) is defined as irregular bleeding from the uterine corpus where the pattern of menstruation is abnormal in regularity, frequency, volume, or duration.<sup>1</sup> According to Sharma et al study, the prevalence of AUB in India is reported to be around 17.9%.<sup>2</sup> Approximately, about one-third of patient visits to the gynecologist are for AUB and it accounts for more than 70% of all gynecological consults in the perimenopausal and postmenopausal years.<sup>3</sup> AUB can occur at any age and has different types of clinical presentations. The bleeding is uncertain and one of the most common complaints experienced by women is excessive uterine bleeding, where the cycles last for more than 7 days or there is blood loss of greater than 80 mL per menses.<sup>4</sup>

AUB may hurt women's physical, social and emotional Health-Related Quality of Life (HRQoL) from the efforts associated with managing menstrual bleeding and the consequences of excessive blood loss such as fatigue and iron deficiency anaemia.<sup>5</sup> The key to successful management is a thorough evaluation of patients to exclude serious pathology such as carcinoma and recognize which mechanism is responsible for the occurrence of AUB.<sup>6</sup>

Working collaboratively with the patients and physicians, pharmacists can provide an advanced level of care that result in the effective treatment of the condition. When long-term care is provided to the patient, it helps in improving the quality of life as well as reducing complications, ultimately leading to a reduction in total healthcare expenditures. With these definitive steps for achieving outcomes to improve patients' health status, the objectives of the current study were to determine the prevalence of abnormal uterine bleeding and the causes and risk factors associated with it.

## REVIEW OF LITERATURE:

**Shabir Ahmed Choudhury et al (2020)** conducted a prospective cohort study between June 2018 and June 2019 on abnormal uterine bleeding; its prevalence, causes, and management in a tertiary care hospital. In this study, the prevalence of AUB was found to be 20.48%. 46% of the patients were between the age group of 41-45 years. The most common histological pattern observed was proliferative endometrium (42%). Heavy menstrual bleeding was found to be the most frequent problem (58.45%). 30% of AUB was due to leiomyoma and 47% of patients underwent a hysterectomy.<sup>7</sup>

**Nishi Mitra et al (2020)** conducted a retrospective study from May 2019 to October 2019 on Etiological factors of abnormal uterine bleeding in a tertiary care center. Most of the patients in this study were between 45-50 years of age (44%). Menorrhagia was the commonest menstrual disorder encountered (52%). 72% of women were multiparous and the major cause of AUB was identified to be leiomyoma (42%).<sup>8</sup>

#### **METHODOLOGY:**

A prospective observational study was conducted for a period of 6 months from January 2021 to June 2021 in the Gynaecology department of a 1000-bedded multi-specialty tertiary care teaching hospital. The study was approved by the hospital ethical committee (EC/2021/0501/CR/08) and written consent was obtained from all the patients involved in the study. The sample size was calculated with a population size of 200, a confidence interval of 5, and a confidence level of 95%.

Patient particulars such as age, reasons for admission, anthropometric measurements, vital signs, co-morbidities present, past medical history, medication history, and social history were documented in a standard proforma. A detailed clinical history interview was conducted to obtain information regarding the background characteristics and reproductive and menstrual history of the study participants. The prescriptions were individually screened with the help of data procured to assess the prevalence, causes, possible risk factors, complications, and consequences of AUB in the patients.

Patients were enrolled as per the inclusion and exclusion criteria.

#### **Inclusion criteria:**

➤ All the in-patients and out-patients of the gynecology department aged between 18-60 years and willing to participate in the study.

#### **Exclusion criteria:**

➤ Patients with insufficient data in the records, intensive care patients, and patients who were not willing to participate in the study.

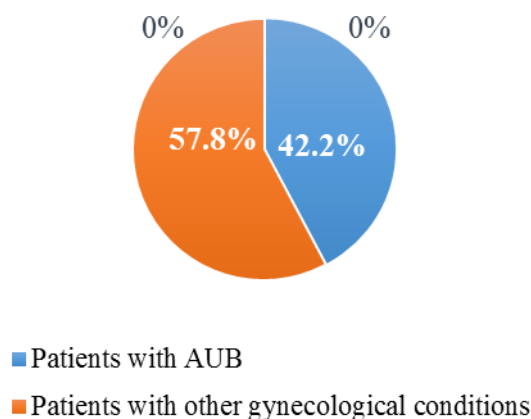
#### **STATISTICAL ANALYSIS:**

Data were entered in a Microsoft Excel spreadsheet and statistically described as frequencies (number of cases) and percentages (%). Descriptive statistics were done for continuous data

and the values were expressed as mean  $\pm$  standard deviation (SD). Results were represented in the form of tables and figures wherever necessary.

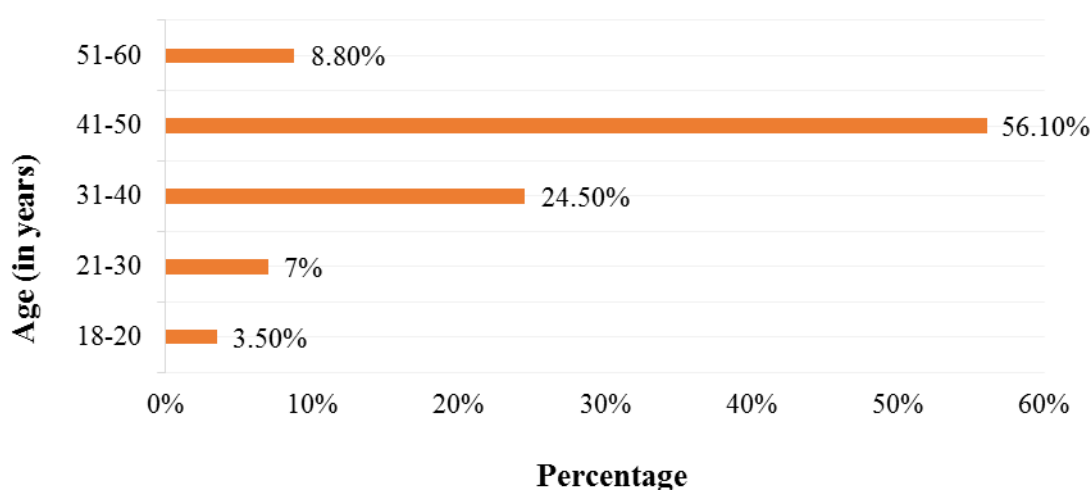
**RESULTS:**

Of the total of 135 patients involved in the study, 57 patients presented with abnormal uterine bleeding, and the prevalence rate was found to be 42.2% (Figure 1).



**Figure No 1 - Prevalence of abnormal uterine bleeding**

Figure 2 shows that a maximum number of patients were in the age group of 41-50 years (56.1%) followed by patients in the age group of 31-40 years (24.5%). The mean age of the patients concerned with AUB in our study was found to be  $42.68 \pm 8.42$ .



**Figure no 2 - Age categorization of patients**

About the measurement of BMI, over 42.1% of patients were overweight and 28% of patients were obese (Figure 3). The average BMI among the patients was found to be about  $27.17 \pm 3.95$ .

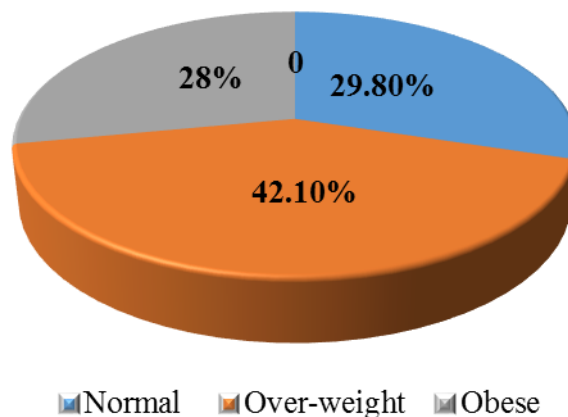


Figure 3 - BMI categorization of patients

When parity is considered, predominant women were para 2 patients (49.1%), consequent to para 3 (29.8%) and para 1 patients (15.8%). Only 5.2% of nulliparous women were affected by AUB. (Figure 4).

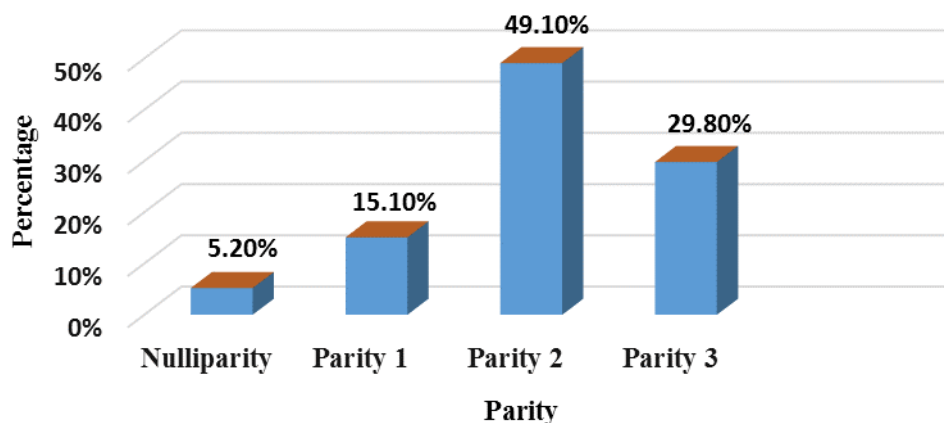
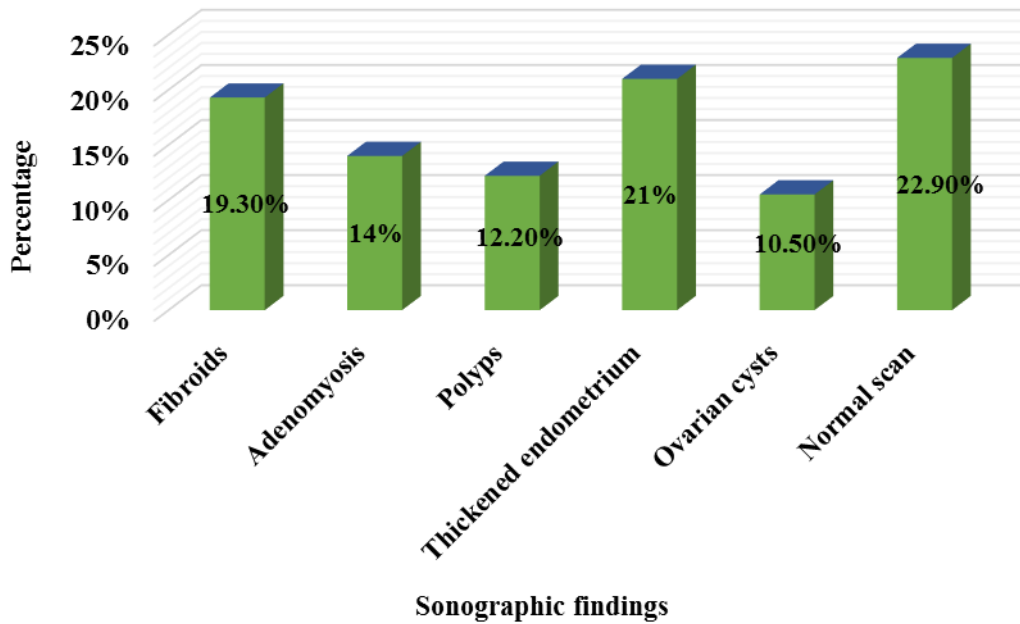


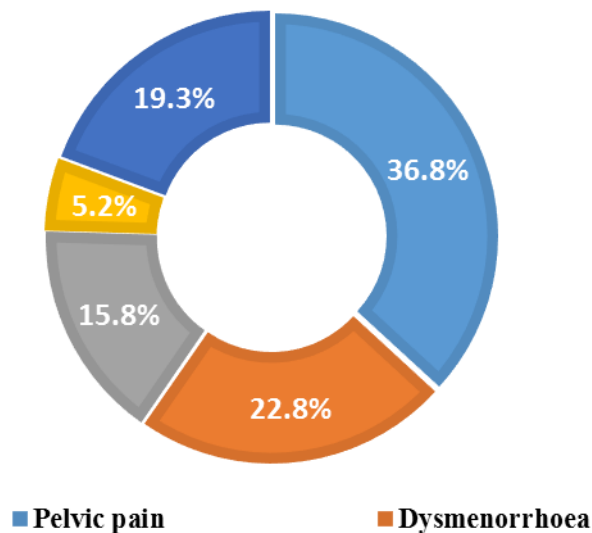
Figure no 4 - Parity categorization of patients

Figure 5 demonstrates the sonographic findings in patients with AUB. Around 22.9% of patients had normal scan reports. When atypical reports were interpreted, 21% of patients were affected with thickened endometrium, 19.3% with fibroids, 14% with adenomyosis, 12.2% with endometrial polyps, and 10.5% with ovarian cysts.



**Figure no 5 - Sonographic findings of abnormal uterine bleeding**

The most common clinical presentation experienced by the participants was pelvic pain (36.8%), followed by dysmenorrhoea (22.8%), lethargy (15.8%), and mood changes (5.2%). 19.3% of patients had no associated symptoms of AUB. (Figure 6)



**Figure no 6 - Associated symptoms of AUB**

The widespread menstrual pattern observed was menorrhagia (42.1%). Heavy menstrual bleeding consequent to amenorrhoea was noted in 24.5%, post-menopausal bleeding in

19.3%, polymenorrhoea in 8.8%, and oligomenorrhoea in 5.3% of women respectively. (Figure 7)

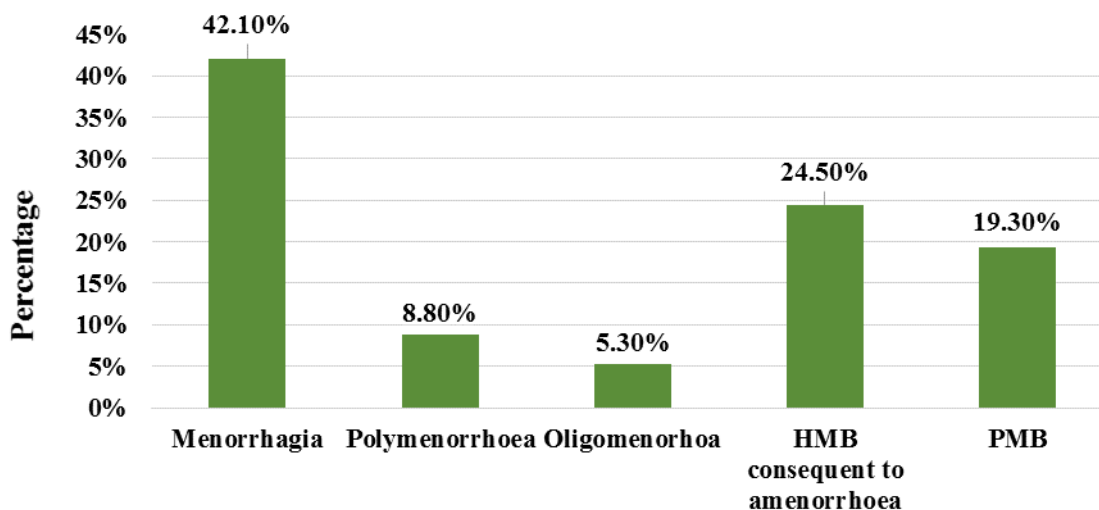


Figure no 7 - Menstrual patterns observed

Figure 8 shows the approaches used to manage AUB. A maximum number of patients were managed with pharmacological therapy (33.3%). Total abdominal hysterectomy was the most commonly done surgery (21%), ahead of other procedures such as total laparoscopic hysterectomy (19.3%), total abdominal hysterectomy with bilateral salpingo-oophorectomy (14%), and finally dilatation and curettage (12.3%).

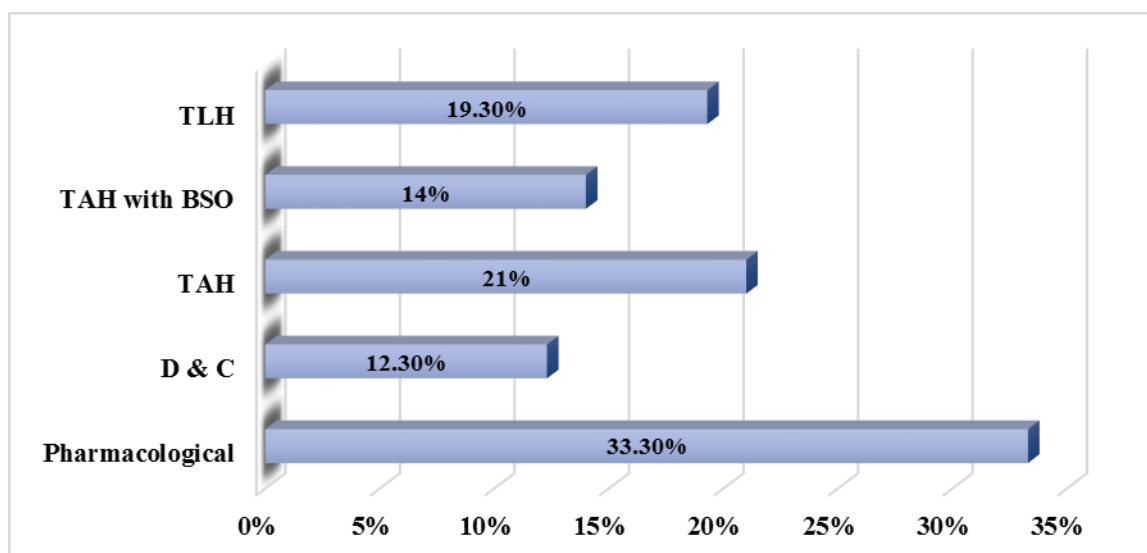
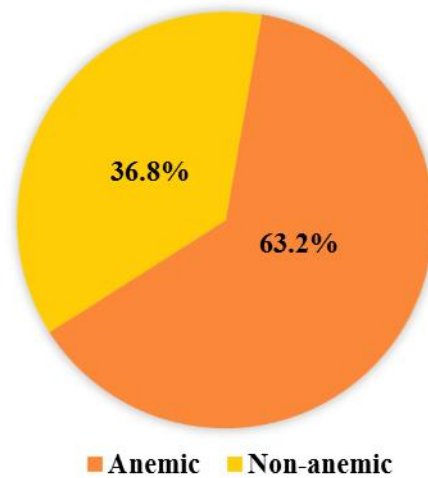


Figure no 8 - Management of abnormal uterine bleeding

In the present study, a significant complication consequent to AUB was found to be anemia. Anemia was prevalent in 63.2% of women affected with AUB. (Figure 9)



**Figure 9 - Complication of AUB**

#### **DISCUSSION:**

Abnormal uterine bleeding is one of the frequently confronted complaints in the gynecology department. The contributing aetiologies may be physiological, pathological, or pharmacological. Precise clinical management demands that the primary cause is determined. Until the pathology of the underlying cause is diagnosed, a proper method of treatment is impossible. The ultimate goal of therapy is mitigation of the menstrual flow to reduce morbidity, thereby improving the quality of life of women.

In our study, the commonest age group of women presenting with abnormal menstrual bleeding was 41-50 years (56.1%), which was close to the study conducted by Sarala et al<sup>9</sup> who reported that 60% of AUB was prevalent in 41-50 years of age. A similar incident was reported by Yusuf et al<sup>10</sup> Behera B et al<sup>11</sup> and Saraswathi et al<sup>12</sup> in their study. Kajal Sinha et al reported that with increasing age the occurrence of menstrual disorders also increases and excessive bleeding was observed in the age of 40 years and above.<sup>1</sup> This may be attributed to the fact that as women near menopause, cycles shorten and often become intermittently anovulatory due to a diminished number of ovarian follicles and oestrogen levels.<sup>13</sup>

When BMI is taken into account, most of the patients were overweight (42.1%) followed by normal weight and obese patients. Nouri M et al<sup>14</sup> in their analysis observed that about two-thirds of women under study were overweight. Sharma AS<sup>15</sup> also reported a similar incidence



of increased BMI in more than half of the study population. This indicates that a strong correlation exists between increased BMI and AUB. Therefore, weight reduction should be emphasized as a preventive measure for AUB and should also be considered a conventional treatment secondary to medical and surgical approaches.

The present study recorded that AUB was majorly seen in para 2 patients (49.1%) and only 5.2% of patients were nulliparous. By these observations, we can conclude that AUB incidence is highest in parous women, especially in multiparous women than in primiparous or nulliparous women. Similar results have been shown by Dr. Kumar Suneet<sup>16</sup> and Nishi Mithra et al<sup>8</sup> in their study. Although parity has not been implicated as a cause of AUB, the presence of hormonal variations during pregnancy has a significant role to play in determining the menstrual pattern after pregnancy.

Menorrhagia was the commonest menstrual pattern encountered in the current study (42.1%). These results were similar to the study performed by Chhikara et al<sup>17</sup> who observed the most common symptom as menorrhagia (40%). Muzaffar et al (51.9%)<sup>18</sup> and Rohidas VS et al (47%)<sup>19</sup> also observed menorrhagia as the most typical mode of presentation of AUB.

Our study shows that majority of patients had pelvic pain (36.8%) followed by dysmenorrhoea (22.8%) as the prevalent associated symptoms of AUB, which was similar to the study published by Nair R et al.<sup>20</sup> About 19.3% of patients in our study had no associated symptoms. These results were comparable with the study performed by Neetu Singh et al,<sup>21</sup> who reported that 52.72% of patients had no associated symptoms.

Our sonographic reports indicated that 21% of patients manifested with thickened endometrium, 14% with adenomyosis, 19.3% with uterine fibroids, 12.2% with endometrial polyps, and 10.5% with ovarian cysts. Venugopalan et al<sup>22</sup> in a similar study observed fibroid uterus (40%) as the most common cause followed by ovarian cysts (34%) and adenomyosis (6%). Rohidas V Set al<sup>19</sup> in their study reported that 23% of cases had endometrial polyps, 17% had adenomyosis and 15% had endometrial hyperplasia.

Heavy menstrual bleeding leads to reduced hemoglobin levels, which eventually leads to anemia. If nutritional iron deficiency is already present in women, menorrhagia further aggravates the condition increasing morbidity. The prevalence of anemia in our study was identified to be 63.2%. A study conducted by Rohidas V Set al<sup>19</sup> reported anemia prevalence as 73% in women with Abnormal Uterine Bleeding.

Results of our study reveal that pharmacological treatment was given to 33.3% of patients. The most common surgical treatment given was hysterectomy (40%) followed by dilation and curettage (12.3%). Our results were similar to the study conducted by Astha S et al<sup>23</sup> where hysterectomy was done in 37% of patients, followed by dilatation and curettage in 29% respectively. Choudary SA et al<sup>7</sup> reported that hysterectomy was performed in 47% of patients, followed by only drugs without surgery in 21% of patients. While making treatment decisions, factors such as patient preference, side effects, and retention of fertility should be taken into account. Surgical management is considered for clinically unstable patients and for patients who failed to respond to pharmacological management. In developing countries like India, where most women do not return for follow-up and are non-compliant with hormonal therapy, a hysterectomy will be the best choice, provided the patient has been fully counseled.<sup>7,24</sup>

#### **CONCLUSION:**

As the prevalence rate of AUB was considerable, awareness about AUB should be provided to women and in addition, women should be encouraged to report their menstrual abnormalities so that primary care can be accessed at the earliest to prevent complications that can easily hamper their quality of life and fertility. A comparative clinicopathological study on large scale will help the results to be more effective in exploring the overall cost of the treatment and proper interventions can be recommended that could lead to better management. Thus, the outcome of this study suggested that innovative and step-wise algorithms regarding pharmaceutical care activities can be framed to enhance the understanding of AUB by active counseling sessions with the clinical pharmacist about the physician.

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#### **DECLARATION OF CONFLICTING INTERESTS:**

The author(s) declared no potential conflicts of interest concerning the research, authorship, and/or publication of this article.

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