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Original Research Article

A study of causes, investigation and management of structural causes of abnormal uterine bleeding in reproductive age group

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ABSTRACT

Background: Abnormal uterine bleeding (AUB) is debilitating condition affecting 14-25% of women of reproductive age. It has significant impact on women's personal, social, physical and quality of life. Present study is planned to study causes, investigation along with management of structural causes of abnormal uterine bleeding in reproductive age group.
Methods: Consecutive type of non-probability sampling was used for selection of study subjects. A total of 100 gynaecology OPD women diagnosed with menorrhagia of 15-45 years age group were enrolled in study.
Results: Mean age of the study subjects was between 26-35 years (47%). 67% were from low socio-economic class while 33% were from middle class. Maximum number of women (66%) had symptoms for less than 6 months. 47% presented with Menorrhagia. 89% were Multiparous, and 11% were Nulliparous. Most common structural causes of AUB was leiomyoma (41%) followed by polyps (23%), adenomyosis (17%), endometrial hyperplasia (15%) and endometrial carcinoma (4%). Prevalence of anemia was 73% in present study. Maximum leiomyoma were treated medically while higher percentage of polyps and hyperplasia was treated surgically. Most commonly performed surgery was polypectomy (20%) followed by dilatation and curettage (17%) and myomectomy (15%). Total abdominal hysterectomy was done in 8% cases while radical hysterectomy was done in 2% cases.
Conclusions: Benign lesions of endometrium account for majority of cases presenting with AUB in reproductive age group. Other premalignant and malignant causes should also be considered. High prevalence of anemia was observed in these cases. A comparative clinicopathological study will help in arriving at the cause and correct diagnosis. Histopathological examination is one of the major tools in evaluation of abnormal uterine bleeding and helps us in proper management and treatment of cases.

Keywords: Abnormal uterine bleeding, Anaemia, Endometrial hyperplasia, Leiomyoma, Menorrhagia, Polyps, Reproductive age group

INTRODUCTION

Abnormal uterine bleeding (AUB) is a significant debilitating clinical condition and affects 14-25% of women of reproductive age and up to 50% of peri-menopausal women.[1] It may have a significant impact on women's personal, social, physical and quality of life with significant financial burden to the country's economy.[2] Acute AUB is defined as bleeding in a non-pregnant woman of reproductive age of sufficient quantity to require immediate intervention to prevent further loss.[3,4] Chronic AUB is defined as bleeding from the uterine corpus that is abnormal in duration, volume, and/or frequency and has been present for most of the previous 6 months.[3]

Historical literature of AUB reveals no universally accepted method for classifying AUB, which hampered

the investigation and categorization of possible etiologies of AUB.[5] The classic terminology that describes AUB include terms that are not related to the underlying etiology (e.g., menorrhagia, polymenorrhea etc.). In order to standardize definitions, nomenclature and the possible underlying etiologies of AUB, it was redefined by International Federation of Obstetrics and Gynecology (FIGO) in 2009 by the FIGO Menstrual Disorders Group (FMDG).[3,4] This would simplify the investigation and comparison among homogenous populations and aid in research and evidence-based approach to AUB. The FIGO categorized AUB based on structured medical history, laboratory tests, ultrasound and or hysteroscopy based techniques.[3] The classification is based on the acronym "PALM- COEIN", which stands for polyp, adenomyosis, leiomyoma, malignancy (and hyperplasia) and comprises structural pathologies assessed visually.[3] The COEIN group stands for coagulopathy, ovulatory disorders, endometrial, iatrogenic, not otherwise classified and relates to non-structural etiologies that cannot be assessed by imaging or histopathology.[3]

Menstrual history and physical examination are the mainstay of evaluation of cases. After excluding pregnancy, the initial evolution includes a detailed history of bleeding and medical history focusing on risk factors for endometrial cancer, coagulopathies, medications in use, concomitant diseases, as well a complete physical examination focusing on signs of polycystic ovarian syndrome, insulin resistance, thyroid diseases, petechiae, bruises, vagina or cervix lesions, and uterine size. To further the investigation, blood counts, ferritin dosage and pelvic ultrasonography may be performed.[6]

In women with low risk for endometrial cancer and normal ultrasonography, excluding structural causes such as polyps, fibroids, endometrial thickening or other malignancies (classified in the PALM-COEIN system), the treatment can be pharmacological, through the use of drugs, or surgical. Structural lesions classified in the PALM-COEIN system have specific treatments according to the diagnosis.[7]

The goal of the treatment is the reduction of the menstrual flow, thereby reducing morbidity and improving quality of life. Treatment by drug or pharmacological therapy is considered the first line whenever possible. The effectiveness and adherence to this alternative is strongly linked to the medical care and excellency of the doctor-patient relationship. The provision of information about therapeutic resources, their mechanism of action, their benefits, risks, information on the expected outcomes, and guidance on the long-term use may be crucial for treatment continuity.[7]

The present hospital based observational study was planned to analyze the etiology, required investigations, management strategies and final outcome among cases with structural causes of abnormal uterine bleeding in reproductive age group.

METHODS

A prospective observational study (September 2017 to August 2019) was conducted at Department of Obstetrics and Gynaecology at tertiary care centre. A total of 100 cases of diagnosed with menorrhagia of 15-45 years age group were enrolled in the study.

Inclusion criteria

All gynaecology patients with menorrhagia of age group 15-45 years are included in the study.

Exclusion criteria

Patients not willing to be included in the study; patients with any comorbidities like uncontrolled hypertension, hormonal imbalance; active internal bleeding or any high-risk factors causing potential risk of bleeding; and patients with iatrogenic causes, endometrial and ovulatory disorder.

Study methodology

For all patients demographic details and clinical history was taken. Detailed history included: detailed menstrual history was taken as regards onset, course, duration, amount of bleeding, medical history (DM, HTN, thyroid disorders), surgical history were recorded. Detail general, systemic and local examination to record the size of the uterus, its mobility and the presence of any cervical or adnexal masses was also carried out. Along with this complete blood count, coagulation profile and serum electrolytes were done for all patients. Ultrasonography was done in all cases while hysteroscopy and D and C was done where indicated. Pathological lesions if any were removed and sent for HPE. At the end of the procedure, the hysteroscope was slowly withdrawn through the cervical canal. After hysteroscopy, curettage was performed in four quadrant, representative endometrial sample were preserved in formalin solution and sent for histopathological examination.

All the collected data was entered in Microsoft Excel Sheet 2010. The data was then transferred and analyzed using SPSS ver. 21.

RESULTS

In present study, mean age of the study subjects was 33.21 years with almost half of the cases were between 26-35 years (47%) (Table 1).

Out of the total 100 cases, 67% were from low socio-economic class while 33% were from middle class (Figure 1).

Table 1: Distribution of cases as per age group.

Age group (years)	Number of cases (N)	Percentage
≤20	7	7.0
21-25	23	23.0
26-30	22	22.0
31-35	25	25.0
36-40	20	20.0
41-45	3	3.0
Total	100	100.0

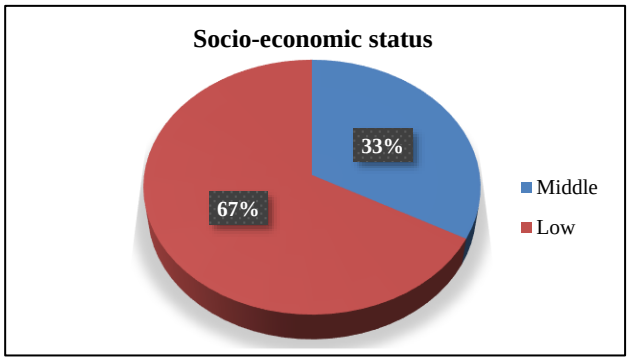

Figure 1: Distribution of cases as per socio-economic status.

Of the 100 patients, maximum number of women (66%) had symptoms for less than 6 months, 30 patients (30%) had symptoms for 6 months to 1 year and 4 patients (4%) had symptoms for more than 1 year (Figure 2).

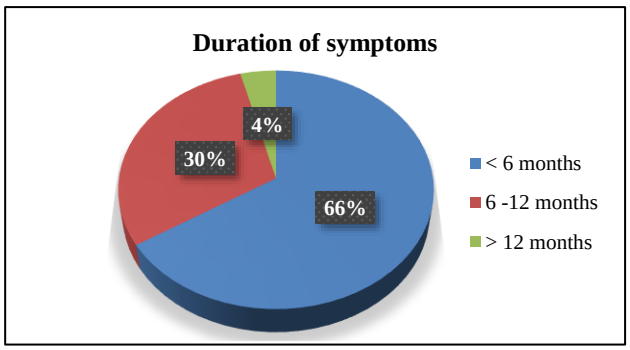

Figure 2: Distribution of cases as per duration of symptoms.

Table 2: Distribution of cases as per presenting symptoms.

Symptoms	Number of cases (N)	Percentage
Menorrhagia	47	47.0
Metrorrhagia	24	24.0
Polymenorrhoea	10	10.0
Polymenorrhagia	18	18.0
Continuous bleeding	1	1.0
Total	100	100.0

Out of total 100 patients, 47% presented with Menorrhagia. The next common presentation was metrorrhagia (24%) followed by polymenorrhagia (18%) and polymenorrhoea (10%) (Table 2).

Table 3: Distribution of cases as per obstetric history.

Obstetric history	Number of cases (N)	Percentage
Nulli-para	11	11.0
Multi-para	89	89.0
Total	100	100.0

Of the 100 patients, 89 cases (89%) were multiparous, and 11 cases (11%) were nulliparous.

Table 4: Distribution of cases as per etiology.

Etiology	Number of cases (N)	Percentage
Polyp	23	23.0
Adenomyosis	17	17.0
Leiomyoma	41	41.0
Hyperplasia	17	17.0
Endometrial carcinoma	2	2.0
Total	100	100.0

The most common structural causes of abnormal uterine bleeding was leiomyoma (41%) followed by polyps (23%), adenomyosis (17%), endometrial hyperplasia (17%) and endometrial carcinoma (2%).

Table 5: Distribution of cases as per prevalence of anaemia.

Anaemia	Number of cases (N)	Percentage
Yes	73	73.0
No	27	27.0
Total	100	100.0

Prevalence of anaemia was 73% in present study.

Table 6: Prevalence of anaemia as per respective etiologies.

Etiology	Number of cases (N)	Anaemia	Percentage
Polyp	23	13	56.5
Adenomyosis	17	12	70.6
Leiomyoma	41	31	75.6
Hyperplasia	17	15	88.2
Endometrial carcinoma	2	2	100.0
Total	100	73	73.0

Highest prevalence of anaemia was seen in hyperplasia (88.2%) and endometrial carcinoma cases (100%).

The type of management (medical/surgical) employed in various etiologies is given in the following figure.

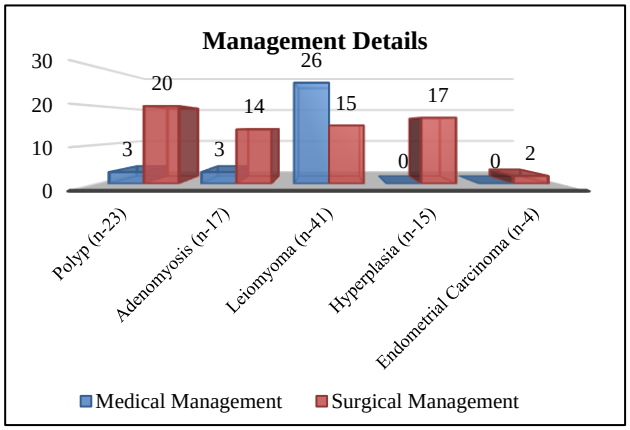

Figure 3: Management details of various etiologies.

Most commonly performed surgery was polypectomy (20%) followed by dilatation and curettage (17%) and myomectomy (15%). Total abdominal hysterectomy was done in 8% cases while radical hysterectomy was done in 2% cases.

Table 7: Distribution of cases as per type of surgical management

Surgical management	Number of cases (N)	Percentage
Polypectomy	20	20.0
Myomectomy	15	15.0
D and C	17	17.0
TAH	7	7.0
TAH and BSO	1	1.0
Radical hysterectomy	2	2.0

DISCUSSION

A hospital based observational study was conducted to analyse the causes, investigation along with management of structural causes of abnormal uterine bleeding in reproductive age group. A total of 100 gynaecology OPD women diagnosed with menorrhagia of 15-45 years age group were enrolled in the study. For all patients demographic details and clinical history was taken. History including detailed menstrual history (as regards onset, course, duration, amount of bleeding), medical history (DM, HTN, thyroid disorders), surgical history were recorded. Detail general, systemic and local examination to record the size of the uterus, its mobility and the presence of any cervical or adnexal masses was also carried out. Along with this complete blood count, coagulation profile and serum electrolytes were done for all patients. Ultrasonography was done in all cases while hysteroscopy and D and C was done where indicated.

In present study, mean age of the study subjects was 33.21 years with almost half of the cases were between 26-35 years (47%). Venugopalan et al studied the diagnosis and management of AUB in reproductive age females.[8] Mean age of the study group was 37.8 years with over half of the cases were between 31-40 years (52%). Similar distribution was seen in the studies by Sudha et al and Sun et al.[9,10]

Out of total 100 patients, 47% presented with Menorrhagia. The next common presentation was metrorrhagia (24%) followed by polymenorrhagia (18%) and polymenorrhoea (10%). Panda et al series had 60% cases of menorrhagia followed by polymenorrhagia and metrorrhagia.[11] Goyal et al in their study also observed menorrhagia as the commonest presenting symptom in the study population (58%) followed by metrorrhagia, menometrorrhagia and continuous bleeding >21 days.[12] In a study, Chhikara et al observed the most common symptoms as menorrhagia (40%) followed by metrorrhagia 38%, polymenorrhagia (12%) and postmenopausal bleeding (10%).[13] Similar findings were also observed by Gita et al et al and Sunitha et al.[14,15]

The most common structural causes of abnormal uterine bleeding in present study was leiomyoma (41%) followed by polyps (23%), adenomyosis (17%), endometrial hyperplasia (15%) and endometrial carcinoma (4%). Venugopalan et al in a similar study observed fibroid uterus as the most common cause in the study population followed by polypandadenomyosis.[8] Mishra et al in their study also observed most common structural causes of abnormal uterine as leiomyoma (41.1%).[16] Betha et al in their study aimed to categorize women with abnormal uterine bleeding (AUB) according to PALM COEIN classification system.[17] The PALM and COEIN groups accounted for 60.4% and 39.6% respectively. Leiomyoma was the most common cause of AUB (30.4%) and Ovulatory disorders was the 2nd most common cause of AUB (13.6%). Sudha et al observed the distribution of cases according to PALM-COEIN as polyps- 4%, adenomyosis- 6%, leiomyoma- 70%, malignancy- 6%, ovulatory dysfunction- 2%, endometrial- 6%, and not yet classified- 6%.[9] Wamsteker et al found endometrial polyp in 19%, endometrial hyperplasia in 12.2% and submucousmyoma in 7.8%.[18] Trotsenburg et al observed myomas and polyps in 14% and deWit reported myomas in 21% and polyps in 14.4.[19,20]

It was known fact that the patients having abnormal bleeding reduces the Hemoglobin levels, which ultimately leads to anaemia. In present study, prevalence of anaemia was seen in 73% cases of abnormal uterine bleeding. Highest prevalence of anaemia was seen in hyperplasia (86.7%) and endometrial carcinoma cases (100%). Matteson et al in their study observed approximately half (49.2%) of the AUB had a concurrent medical condition which could affect their treatment options and 14% had moderate to severe anaemia.[21] Venugopalan et al in their study observed prevalence of anaemia as 20% in our study.[8] The higher prevalence in

present study can be attributed to present hospital being tertiary care hospital catering to high risk cases.

Most commonly performed surgery was polypectomy (n-20; 20% cases) followed by dilatation and curettage (n-17; 17% cases) and myomectomy (n-15; 15% cases). Total abdominal hysterectomy was done in 8% cases while radical hysterectomy was done in 2% cases. LNG-IUS alone was given in 3 cases of polyp. It was also combined with polypectomy in 5 out of 20 cases. GnRH agonists were given in 3 out of 17 cases of adenomyosis while in 1 case OC pills were required. In cases of leiomyoma, management was started with Tranexamic acid or LNG-IUS as the initial treatment in all cases. In 15 cases, myomectomy was done due to treatment failure. All cases of hyperplasia and carcinoma were managed surgically.

CONCLUSION

In our study histopathological evaluation of endometrial tissue was undertaken to ascertain the etiology of abnormal uterine bleeding (AUB) in reproductive age women. Leiomyoma was the most common observed histopathological pattern in patients presenting with AUB. Endometrial polyp was the next important cause of AUB followed by adenomyosis. Though benign lesions of endometrium account for majority of cases presenting with AUB, in reproductive age group other premalignant and malignant causes should also be considered.

High prevalence of anaemia was observed in cases of AUB with highest prevalence being seen in malignant and pre-malignant cases.

A comparative clinicopathological study will help in arriving at the cause and correct diagnosis. Histopathological examination is one of the major tools in evaluation of abnormal uterine bleeding and helps us in proper management and treatment of cases.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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