

## Study on Clinic-Pathological Evaluation of AUB in Perimenopausal Women

Chitti Sudha A<sup>1</sup>, G Anantha Lakshmi Satyavathi<sup>2</sup>

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<sup>1,2</sup>Associate Professor, Department of Obstetrics and Gynaecology, GSL Medical College & General Hospital, Rajahmundry, Andhra Pradesh 533296, India.

**Corresponding Author:** G Anantha Lakshmi Satyavathi, Associate Professor, Department of Obstetrics and Gynaecology, GSL Medical College & General Hospital, Rajahmundry, Andhra Pradesh 533296, India.

**E-mail:** srujanaivf@gmail.com

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### Abstract

**Background:** Evaluation of AUB in perimenopausal women is important because, during this period the endocrinological, biological and clinical features approaching menopause commences. The present Study was conducted with the aim to study and analyze clinic-pathological evaluation with clinical findings of cases wherever applicable.

**Method:** It is a hospital based study conducted during the period of 2015 to 2017 in every consecutive Patient attending, Department of obstetrics and gynecology, GSL medical college. Patients were selected according to the inclusion criteria. Informed and written consent was taken from all the cases enrolled in the study. Ethical clearance was obtained from the ethical committee Base line information and clinical history of a patient was obtained in a pre designed proforma.

**Result:** Majority of Patients about 45% were having Heavy Menstrual bleeding, 32.5% of them with intermenstrual bleeding followed by Irregular Bleeding with 10%. Scanty bleeding and Postmenopausal bleeding accounted for 7.5% and 5% respectively. As per clinical, radiological and histopathological diagnosis leiomyoma accounted for major aetiological factor that is 41.3%, 36.3% and 37.5% clinically, radiologically and histologically respectively, followed by Ovulatory dysfunction with 33.8% clinically, 32.3% radiologically and 31.3% histologically.

**Conclusion:** Clinical impression should be placed in to proper perspective of structural and non structural

classification so that accurate diagnosis based on proper work up can help in optimizing the treatment protocol. Histopathology proved to be of little help in diagnosing adenomyosis, malignancy and endometrial hyperplasia as it is impossible to diagnose them clinically.

**Keyword:** Abnormal Uterine Bleeding (AUB), PALM-COEIN classification; Histopathology.

### Introduction

Abnormal Uterine Bleeding is one of the most common presenting complaint for which women consult their gynaecologists and accounts for almost 30-40% cases in Out Patient Clinic 1. AUB is defined as any variation from the normal menstrual cycle and includes changes in regularity and frequency of menstrual cycle in duration of flow or in amount of blood loss.<sup>1</sup>

Evaluation of AUB in perimenopausal women is important because, during this period the endocrinological, biological and clinical features approaching menopause commences. Perimenopause is often characterised by menstrual cycle Irregularities in frequency and volume due to fluctuating estrogen levels. The incidence of uterine pathology and associated medical complications also increase in this age group.<sup>2</sup>

AUB in perimenopausal women accounts for

about 70% gynaecological outpatient department visits. This assumes significance in view of clinical sign of endometrial cancer.<sup>3</sup> The present Study was conducted with the aim to study and analyse clinic-pathological evaluation with clinical findings of cases wherever applicable.

### **Objectives**

To assess clinic-pathological evaluation of AUB in Perimenopausal women.

### **Materials and Methods**

It is a hospital based study conducted during the period of 2015 to 2017 in every consecutive Patient attending, Department of obstetrics and gynaecology, GSL medical college.

#### **Inclusion Criteria**

Perimenopausal women between 40 to 55 years of age complaining of Heavy menstrual bleeding, Irregular bleeding, Intermenstrual bleeding

#### **Exclusion Criteria**

All women below 40 and above 55 years of age, Women with known cause of AUB.

#### **Method of Collection of Data**

Patients were selected according to the inclusion criteria. Informed and written consent was taken from all the cases enrolled in the study. Ethical clearance was obtained from the ethical committee of GSL medical college, Rajahmundry. The purpose of the study was explained in local language and the subjects who were willing to participate were included in the study after obtaining informed consent from the study subjects. Base line information and clinical history of a patient was obtained in a pre designed proforma. The study subjects are screened through ultrasonography and MRI (if needed) with the help of pre standardized equipment. General examination, vital signs and systemic examination, i.e. CVS, RS and CNS were examined. Socio demographic, clinical history including menstrual and obstetric history was taken in detail for each patient.

Transabdominal or transvaginal scan was done in all patients. Uterus, Endometrium and adnexa were evaluated by the various manoeuvres available. Transvaginal ultrasound was done for endometrial and cervical polyps, fibroids less than

12 weeks size, cervical fibroids and endometrial assessment, measured as the maximum anterior posterior thickness of the hyperechoic lines on a long axis of the uterus, Normal Endometrial thickness in a perimenopausal women varies in thickness according to menstrual cycle from 4 mm to 12 mm. Transabdominal ultrasound was done for fibroids more than 12 weeks size, adenomyosis and other adnexal masses.

MRI was done in needed patients. Patients were asked about any contraindication such as cardiac pace maker and artificial valves and they were instructed to remove any metallic object. Patient is positioned supine and she must be well centralised. Patients were imagined with the body coil. Evaluation of pelvis was done using axial, coronal and sagittal non contrast T1 and T2 weighted images. All images were received by an Expert in MRI, reporting was done by the Radiologist in Department of Radiology, GSL Medical College and General Hospital.

Under SGA, patient is placed in the dorsal lithotomy position. Bimanual examination is done prior to the procedure.

The perineum is cleaned, painted with betadine solution and draped with sterile towels.

Adequate exposure of the cervix is achieved by depressing the posterior vaginal wall with sims speculum and anterior lip of cervix is held with vulsellum, uterine sound is passed in to the cavity for the uterocervical length and position of uterus. Cervix is dilated with the series of Matthew duncan dilators and a sharp curet is advanced through the dilated cervical canal to the fundus, endometrial cavity is curetted and tissue sent for histopathology examination.

Uterine cavity is evaluated thoroughly and endometrial biopsy is performed through the operative hysteroscope with a channel to allow specialized instruments to enter the cavity, endocervical canal is seen while withdrawing the hysteroscope from the uterus.

### **Results**

Present Study shows, majority of Patients about 45% were having Heavy Menstrual bleeding, 32.5% of them with intermenstrual bleeding followed by Irregular Bleeding with 10%. Scanty bleeding and Postmenopausal bleeding accounted for 7.5% and 5% respectively (Tabel 1).

Symptomatic Leiomyoma was assigned to be

**Table 1:** Distribution of cases based on bleeding pattern

Bleed Pattern	No. of cases	Percentage
Heavy Menstrual Bleeding	36	45%
Inter Menstrual Bleeding	26	32.5%
Irregular Bleeding	8	10%
Scanty Bleeding	6	7.5%
Postmenopausal Bleeding	4	5%

the major aetiology with 41.3% study population in PALM component and Ovulatory dysfunction in the COEIN component with 33.8%. The study indicates PALM (Structural) and COEIN (non-

structural) component accounted for 51.4% and 48.8% respectively in Perimenopausal women with AUB without much significant difference as per the clinical diagnosis (Table 2).

**Table 2:** Distribution of cases clinically according to Palm Coein classification

	No. of cases	Percentage
<b>PALM (Structural)</b>		
AUB-P (Polyp)	2	2.5%
AUB-A (Adenomyosis)	3	3.8%
AUB-L (Leiomyoma)	33	41.3%
AUB-M (Malignancy)	3	3.8%
<b>Total (PALM)</b>	<b>41</b>	<b>51.4%</b>
<b>COEIN (Non-structural)</b>		
AUB-C (Coagulopathy)	0	0%
AUB-O (Ovulatory)	27	33.8%
AUB-E (Endometrial)	12	15%
AUB-I (Iatrogenic)	0	0%
AUB-N (Not yet classified)	0	0%
<b>Total (COEIN)</b>	<b>39</b>	<b>48.8%</b>
<b>Total (PALM COEIN)</b>	<b>80</b>	<b>100%</b>

Table 3 as per the clinical and histopathological diagnosis the PALM component accounted for 51.4% and COEIN component with 61.3% in Perimenopausal AUB cases.

Leiomyoma accounted to be the major aetiology

both clinically with 41.35% and histologically with 37.5% followed by ovulatory dysfunction accounting for 33.8% clinically and 31.3% histologically. AUB due to polyp was assigned to be the minor aetiological factor both clinically and histopathologically with 2.5% and 5% respectively (Table 3).

**Table 3:** Correlation of clinical and histopathology based on diagnosis

Diagnosis	Clinical		Histopathology		p-value
	Frequency	Percent	Frequency	Percent	
Structural (PALM)	41	51.4%	49	61.3%	≤0.05
AUB-P (Polyp)	2	2.5%	4	5%	>0.05
AUB-A (Adenomyosis)	3	3.8%	8	10%	<0.05
AUB-L (Leiomyoma)	33	41.35	30	37.5%	>0.05
AUB-M (Malignancy & Hyperplasia)	3	3.8%	7	8.8%	<0.01
Non-structural (COEIN)	39	48.8%	31	38.8%	≤0.05
AUB-C (Coagulopathy)	0	0%	0	0%	0
AUB-O (Ovulatory)	27	33.8%	25	31.3%	>0.05
AUB-E (Endometrial)	12	15%	6	7.5%	<0.05
AUB-I (Iatrogenic)	0	0%	0	0%	0
AUB-N (Not yet classified)	0	0%	0	0%	0

Table 4, as per clinical, radiological and histopathological diagnosis leiomyoma accounted for major aetiological factor that is 41.3%, 36.3% and

37.5% clinically, radiologically and histologically respectively, followed by Ovulatory dysfunction with 33.8% clinically, 32.3% radiologically and 31.3% histologically (Table 4).

**Table 4:** Correlation between clinical, radiological and histopathological diagnosis of AUB

Diagnosis	Clinical	USG	Histopathology
Structural (PALM)			
AUB-P (Polyp)	2(2.5%)	2(2.5%)	4 (5%)
AUB-A (Adenomyosis)	3(3.8%)	9(11.3%)	8(10%)
AUB-L (Leiomyoma)	33 (41.3%)	29 (36.3%)	30 (37.5%)
AUB-M (Malignancy & Hyperplasia)	3(3.8%)	1(1.3%)	7(9%)
Non-structural(COEIN)			
AUB-C (Coagulopathy)	0(0%)	0(0%)	0(0%)
AUB-O (Ovulatory)	27 (33.8%)	13 (32.3%)	25 (31%)
AUB-E (Endometrial)	12 (15%)	26 (16.3%)	25 (7.5%)
AUB-I (Iatrogenic)	0(0%)	0(0%)	0(0%)
AUB-N (Not yet classified)	0(0%)	0(0%)	0(0%)
<b>Total</b>	<b>80 (100%)</b>	<b>80 (100%)</b>	<b>80 (100%)</b>

## Discussion

AUB continues to be one of the most frequently encountered and perplexing problems in gynaecology.<sup>4</sup> It is defined as any variation from the normal menstrual cycle bleeding and includes changes in the regularity and frequency of menstrual cycle in duration of flow and amount of blood loss.<sup>5</sup>

It is difficult to define the exact cause of abnormal or irregular uterine bleeding. AUB in perimenopausal women is due to pathological conditions of the endometrium or myometrium. Anovulatory cycles are a common cause, but hyperplasia, polyps, fibroids and carcinoma are possible and are concern to the patient<sup>6</sup>.

Perimenopause refers to the period surrounding the last menstrual event. In this duration, there exists a normal diminution in reproductive capacity with its resulting disruption of the normal menstrual pattern with a real risk of pelvic pathology<sup>7</sup>.

In this study, patients in perimenopausal age group who reported to gynaecology outpatient department with complaints of heavy menstrual and irregular bleeding, Scanty bleeding, postmenopausal bleeding are taken and the study was conducted for Clinicopathological evaluation of AUB in perimenopausal women.

According to Mishra *et al.* PALM COEIN classification of AUB has an advantage of consideration of the entire range of possible

etiologies but should be followed by further investigations to arrive at a more accurate and consistent diagnosis in perimenopausal group of women so as to rule out organic diseases particularly pre cancerous lesions and cancers<sup>8</sup>. Chronic anovulation is a predominant phenomenon in perimenopause which is associated with an irregular and unpredictable pattern of bleeding that varies in amount, duration and character.<sup>9</sup>

### Relation with Clinical Diagnosis

In the present study, as per clinical diagnosis PALM and COEIN components contribute almost equally for AUB when assessed clinically accounted for 51.4% and 48.8% respectively which was similar to the studies carried out by Bharat thalukder *et al.*<sup>10</sup> and Mishra *et al.*<sup>8</sup>

Leiomyoma (AUB-L) was assigned to be the major etiology in structural group (PALM) clinically with 45% which correlates with the study conducted by Gupta *et al.* Which also showed that leiomyoma in perimenopausal women accounted for 53% and similarly another study conducted by Mishra *et al.* with leiomyoma (41%). Higher association of AUB is seen with submucosal type, compared with intramural and subserous type. In the present study submucosal accounted for 45.7% followed by intramural fibroids.

Ovulatory disorders (AUB-O) were second proposed major contributor as per clinical diagnoses accounting for 33.7%. Ovulatory disorders are

common due to derangements in the hypothalamo-pituitary-ovarian axis resulting in derangements in follicular maturation, ovulation or corpus luteum formation and anovulatory cycles are more frequent and chronic anovulation is associated with an irregular and unpredictable pattern of bleeding<sup>11</sup>. This explains why ovulatory disorders were found to be the second most common cause of AUB in this and most other studies such Mishra *et al.* with ovulatory disorders (37%)<sup>8</sup> similarly, Gupta *et al.* with 39%.<sup>12</sup>

The other important cause of AUB in perimenopause was AUB-M i.e. malignancy and hyperplasia. The unopposed estrogenic action on the endometrium in the anovular cycles found in perimenopausal women predisposes them to develop hyperplasia and eventually endometrial carcinoma.<sup>13</sup>

In the present study, endometrial hyperplasia accounted for 15% cases and adenocarcinoma 6.2%. The average age of women with endometrial carcinoma was 48 years.

#### **Comparision of Clinical with Histopathological Based Diagnoses of AUB in Perimenopausal Women**

Clinicopathological correlation of different components of structural (PALM) side and AUB-O along with AUB-E categories of the COEIN revealed significantly more cases to have structural causes of AUB on histopathological basis in comparison with clinical assignment of the PALM component.

On analysis of various categories in AUB-P (Polyp) the difference in clinical and histopathological diagnosis was not significant ( $p>0.05$ ).

In AUB-A (adenomyosis), the difference in clinical and histopathological diagnosis was significant ( $p<0.05$ ). This is due to the fact that symptoms and signs of adenomyosis and leiomyoma can be so similar that it can be impossible to differentiate them clinically. This finding emphasizes the importance of histological examination as a complimentary diagnostic tool in structural (PALM) component of AUB. This observation is in accordance with other studies conducted by Bhosle A *et al.*<sup>14</sup>

In AUB-L (leiomyoma) the difference in clinical and histopathological diagnosis was not significant ( $p>0.05$ ). This explanation may be that most symptomatic fibroids can be easily diagnosed by history and clinical pelvic examination.

In AUB-M (malignancy and hyperplasia) the difference in clinical and histopathological was

highly significant ( $p<0.01$ ). This is due to the fact that clinical picture including menstrual history is not specific and bimanual examination reveals an ordinary small uterus that shows no obvious difference from the normal senile one in most cases. Although clinically indistinguishable from nonmalignant causes, the genital malignancies have a protracted course and grim prognosis.

Early detection and prompt management may lead to a better outcome in all these women. The significant difference in clinical and histopathological diagnosis in cases of genital malignancies and hyperplasia plays the complimentary role in the two modalities where a case of AUB is provisionally classified to one category but after histopathology it may be reclassified, and in the process a correct diagnosis is made so that patients are benefited.

In AUB-O (ovulatory disorders) the difference in clinical and histopathological diagnosis was not significant ( $p>0.05$ ). This is due to the fact that perimenopausal women have more anovulatory cycles. In the majority of the women with anovulatory bleeding, the menstrual history alone can establish the diagnosis with sufficient confidence that treatment can begin without additional lab evaluation or imaging. Regular monthly menstrual cycles that are heavy or prolonged are more likely related to an anatomical cause or a bleeding disorder than to anovulation.

In AUB-E (endometrial disorders) the difference in clinical and histopathological diagnosis was significant ( $p<0.05$ ). With the clinically assigned cases are higher in number than those detected by histopathology. This may be because most women tend to have no definite cause of AUB. Most AUB-E cases appear due to disturbances involving tissue fibrinolytic activity, prostaglandins and other inflammatory or vasoactive mediators.

In the present study there were significantly greater number of cases assigned to AUB-E on clinical ground can be justified by this arbitrary approach.

#### **Conclusion**

Although there was no significant difference in cases of AUB-P, AUB-L and AUB-O, all can cause heavy and irregular menstrual bleed which may be clinically indistinguishable from those caused by premalignant or malignant causes which are more common around the perimenopause and menopause. For management part also

clinical impression should be placed in to proper perspective of structural and non structural classification so that accurate diagnosis based on proper work up can help in optimizing the treatment protocol. Histopathology proved to be of little help in diagnosing adenomyosis, malignancy and endometrial hyperplasia as it is impossible to diagnose them clinically.

*Support:* Nil

*Conflicts of interest:* Nil

## References

1. Kumar P, Malhotra N. Clinical types of abnormal uterine bleeding. In: Kumar P, editor. *Jeffcoate's Principle of Gynecology*. 7<sup>th</sup> ed. New Delhi: Jaypee Brothers Medical Publishers (P) Ltd.; 2008.p.599.
2. Shobha PS. Sonographic and histopathological correlation and evaluation of endometrium in perimenopausal women with abnormal uterine bleeding. *Int J Reprod Contracept Obstet Gynaecol*. 2014;3:113-7.
3. Kathuria R, Bhatnagar B. Correlation between D&C, USG and hysteroscopy findings in diagnosing a cause for abnormal uterine bleeding. *Indian J Clin Pract*. 2014;25:466-70.
4. Archana B, Michelle F. Evaluation and Histopathological correlation of abnormal uterine bleeding in perimenopausal women. *J Bombay Hosp*. 2010;52:69-72.
5. Muzaffar M, Akhtar K, Rehman M, *et al*. Menstrual Irregularities with excessive blood loss: a clinico-pathological correlation. *J Pak Med Assoc*. 2005;55:486-9.
6. Michail G, Karahallou A, Skiapoulos S *et al*. Texture analysis of perimenopausal & postmenopausal endometrial tissue in grayscale transvaginal ultrasonography. *British J Radiol*. 2007;80:609-16.
7. Soules MR, Sherman S, Parrott E. Stages of reproductive aging workshop (STRAW). *J. Womens Health, Gender Based Med*. 2001;10:843-8
8. Mishra D, Sultan S. FIGO's PALM-COEIN Classification of Abnormal Uterine Bleeding: A Clinico-histopathological Correlation in Indian Setting. *The Journal of Obstetrics and Gynecology of India*. 2017 Apr 1;67(2):119-25.
9. Speroff L, Fritz MA. Menopause and the perimenopausal transition, clinical endocrinology. In: Speroff L, Fritz MA, eds. *Clinical gynecologic endocrinology and infertility*. 7<sup>th</sup> ed. Philadelphia, London: Lippincott Williams & Wilkins; 2005:628.
10. Talukdar B, Goswami RR, Mahela S, *et al*. Histopathological Pattern of Endometrium in Abnormal Uterine Bleeding of Perimenopausal Women. *Int J Reprod Contracept Obstet Gynecol*. 2016 Apr;5(4):1162-6.
11. Erdem M, Bilgin U, Bozkurt N, *et al*. Comparison of transvaginal ultrasonography and saline infusion sonohysterography in evaluating the endometrial cavity in pre-and postmenopausal women with abnormal uterine bleeding. *Menopause*. 2007;14(5):846-52.
12. Gupta S, Jose J, Manyonda I. Clinical presentation of fibroids. *Best practice & research Clinical obstetrics & gynaecology*. 2008 Aug 1;22(4):615-26.
13. Mathew M, Gowri V, Rizvi SG. Saline infusion sonohysterography—an effective tool for evaluation of the endometrial cavity in women with abnormal uterine bleeding. *Acta obstetrica et gynecologica Scandinavica*. 2010;89(1):140-2.
14. Bhosle A, Fonseca M. Evaluation and histopathological correlation of abnormal uterine bleeding in perimenopausal women. *Bombay Hospital Journal*. 2010;52(1):69-72.