

Original research article

**CLINICOPATHOLOGICAL EVALUATION OF PATIENTS WITH ABNORMAL UTERINE BLEEDING CAUSED BY COAGULATION DISORDERS (AUB-C), OVULATORY DYSFUNCTION (AUB-O), ENDOMETRIAL DYSFUNCTION (AUB-E) [FORMERLY CALLED DYSFUNCTIONAL UTERINE BLEEDING] IN REPRODUCTIVE AGE GROUP WOMEN**

**<sup>1</sup>Dr. Sahitya S S, <sup>2</sup>Dr. A. Madhulika**

<sup>1</sup>Post-Graduate, Department of Gynaecology, Sri Venkateswara Medical College, Tirupati, Andhra Pradesh, India

<sup>2</sup>Assistant Professor, Department of Gynaecology, Sri Venkateswara Medical College, Tirupati, Andhra Pradesh, India

**Corresponding Author:**

**Dr. Sahitya S S**

Post-Graduate,

Department of Gynaecology,  
Sri Venkateswara Medical College,  
Tirupati, Andhra Pradesh, India

**Abstract**

**Background:** Abnormal uterine bleeding is a very commonly encountered condition in women of reproductive age group. Excessive uterine bleeding (DUB) is one of the condition in the spectrum of AUB. Histological examination of the endometrium and institution of timely treatment is prudent in management of AUB.

**Materials and Methods:** 165 patients of reproductive age group who presented with abnormal uterine bleeding during March 2023 to Nov 2023, to the Department of Obstetrics and Gynecology, Government Maternity Hospital, Tirupati, were included in the study.

**Results:** Most of the patients belonged to middle age group (41-49 years) and belonged to middle socio-economic class. Majority of the women were multiparous. Menorrhagia was the most common bleeding pattern observed. Proliferative endometrium was the most common his to-pathological finding.

**Conclusion:** Dysfunctional uterine bleeding is a diagnosis of exclusion for excessive menstrual bleeding. Endometrial biopsy is a must to identify the histological pattern and start timely intervention.

**Keywords:** Abnormal uterine bleeding, menorrhagia, menstrual abnormalities

**Introduction**

Abnormal uterine bleeding (AUB) includes a broad spectrum of menstrual irregularities involving frequency, regularity, duration, and volume of flow unrelated to pregnancy. Up to one-third of women experience abnormal menstruation in their life, with irregularities most commonly occurring at menarche and perimenopause<sup>[1]</sup>.

AUB may be due to anatomical, endocrine, hematological, and iatrogenic factors, though there are cases without any obvious pathology. The latter is usually referred under the name of dysfunctional uterine bleeding (DUB). It is a diagnosis of exclusion, wrongly used synonymously from time to time as menorrhagia<sup>[2]</sup>. Dysfunctional uterine bleeding (DUB) is defined as “excessive (>80 mL or a significant decrease in hemoglobin), prolonged (flow duration >7 to 10 days), or un-patterned (<21 days or >40 to 45 days in an adolescent) endometrial bleeding unrelated to structural or systemic disease”<sup>[3]</sup>.

Acute AUB is bleeding in a non-pregnant woman of sufficient quantity to require immediate intervention to prevent further blood loss<sup>[4]</sup>. Chronic AUB is abnormal bleeding duration, volume and/or frequency which has been present for most of the last 6 months. Dysfunctional uterine bleeding can be classified under anovulatory and ovulatory types. 90% of DUB is of anovulatory type. Corpus luteum does not form as a result of which progesterone secretion does not occur. Oestrogen is produced continuously causing endometrial hyperplasia which causes heavy menstrual bleeding. 10% of DUB patients ovulate, but progesterone secretion is prolonged as oestrogen levels are low. This causes irregular shedding of uterine lining and breakthrough bleeding<sup>[5]</sup>.

In 2011, the FIGO classification system for AUB (PALM-COEIN) was published. This included DUB as a part of AUB<sup>[6, 7]</sup>. The key to successful clinical management is to recognize or identify the causative factors responsible. This can be achieved by clinical examination and various imaging modalities.

Ultrasonography is a safe initial investigation as it is non-invasive and can give us an idea about any structural cause. Hysteroscopy is gold standard investigation in evaluation of the uterine cavity<sup>[8]</sup>. It has high sensitivity and specificity in diagnosis due to the fact that the uterine cavity and intrauterine pathology are directly visualized. Histopathological evaluation of endometrial tissue by curetting or aspiration is a reliable method for determining the cause of AUB after excluding systemic and structural causes<sup>[4]</sup>.

This study aims to evaluate various pathological features in endometrial curettage of patients complaining of dysfunctional uterine bleeding and correlating them with clinical presentation.

**Materials and Methods**

This prospective observational study was conducted from March 2023 to Nov 2023 in the Department of Obstetrics and Gynecology, Government maternity Hospital, Tirupati.

All patients in reproductive age group with abnormal uterine bleeding were included in the study. Patients who were pregnant or patients with any detectable organic pathology like tumor, inflammation, medical disorders like blood dyscrasias and thyroid abnormalities were excluded from the study. Adolescent patients were also excluded

from the study as endometrial sampling is not the primary diagnostic tool in that age group.

Sample size was calculated by the formulae  $N = Z^2PQ/d^2$ , where N is the sample size required, Z is the confidence interval at 95% level of significance (1.96), P is prevalence of the condition in the population (14.6), d is the absolute precision from the estimate i.e., 5.0. By substituting the values, a sample size of 165 was estimated.

After inclusion and exclusion criteria, 165 patients were selected for the study after taking their consent to participate in the study. A complete history with regard to age, parity, socio economic status, pattern of menstrual irregularity, type, duration, amount of blood loss, associated pain, previous hormonal treatment was taken. Complete general physical, systemic, pelvic examination was done. Lab investigations like haemoglobin estimation, platelet count, bleeding time, clotting time, blood grouping and typing, fasting blood glucose, urinal analysis, thyroid function tests was done. Ultrasonography of abdomen and pelvis was done to detect any organic pathology and to note endometrial thickness.

Ayers spatula was used to take the sample from ecto cervix and T-Zone and fixed in 95% ethyl alcohol with ether. Endometrial biopsy was taken after 15 days from the last menstrual period (preferably Day 21-22) so that hormonal status could be determined in addition to pathology. Women who were bleeding were put on non-hormonal methods of treatment till the procedure was awaited. Dilatation and curettage was done under sedation. Endometrial tissue obtained by Dilatation and Curettage was immediately kept in 10% formalin and subjected to histo-pathological study in the Department of Pathology, S.V. Medical College, Tirupati.

The detailed clinical presentations, histo-pathological study reports and correlation with other parameters like age parity and socioeconomic status have been reviewed and critically analyzed.

The collected data was entered in MS Excel spread sheet and analyzed using EPI-INFO software version 7.2.5.

## Results

**Table 1:** Age distribution

Age group	No. of patients	%
21-30	32	19.3%
31-40	47	28.48%
41-50	68	41.21%
51-60	16	9.6%
61-70	2	1.21%
Total	165	

Most of the patients belonged to age group of 41-50 years (41.21%). 2 patients were above 60 years of age.

**Table 2:** Relation of DUB with parity

Parity	No of patients	%
Nulliparous	6	3.63%
Primiparous	26	15.75%
Multiparous	133	80.6%
Total	165	

AUB was more common in parous than in nulliparous women. 133 patients out of 165 i.e. (80.6%) presenting with DUB were multipara, 26 patients (15.75%) were primipara and only 6 patients (3.63%) were nulliparous.

Most of the patients with DUB belonged to middle socioeconomic status (n = 85; 51.51%). 63 (38.18%) patients were from low and 17 (10.3%) patients from higher socioeconomic status.

**Table 3:** Menstrual abnormality

Abnormal menstrual pattern	No of patients	%
Menorrhagia	84	50.9%
Metrorrhagia	29	17.5%
Polymenorrhoea	14	8.48%
Meno-metrorrhagia	13	7.87%
Metropathia haemorrhagica	11	6.67%
Polymenorrhagia	9	5.4%
Oligomenorrhoea	5	3.03%
Total	165	

Menorrhagia was prevalent almost in all age group. Metrorrhagia, meno-metrorrhagia, metropathia haemorrhagica and polymenorrhoea types of abnormal bleeding were mostly seen in the age group of 41-50 years. However, in the age group of 51-60 years and 61 to 70 years, metrorrhagia type of bleeding was more common.

**Table 4:** Histo-pathological findings of endometrial biopsy

Histo-pathological finding	% of patients
Proliferative type	41.81%
Hyperplastic endometrium	27.5%
Simple hyperplasia	7.5%
Secretory pattern	23.03%
Malignancy	1.25%

Proliferative endometrium is the predominantly common finding in all age group. Hyperplastic endometrium was equal common in 41-50 years age group and was also a significant finding in the 51-60 years age group. The endometrial carcinomas were found in 1.25% of cases in later age groups of 51-60 years.

In this study proliferative endometrium was found in patients commonly presenting with menorrhagia and metrorrhagia. Whereas hyperplastic endometrium was commonly found in patients presenting with menorrhagia. Our two cases of endometrial carcinoma presented with menorrhagia and menometrorrhagia.

Out of 133 multiparous women 57 had proliferative endometrium, 28 had secretory endometrium, 4 had atrophic type, 40 had endometrial hyperplasia and 2 had irregular shedding. Whereas endometrial carcinoma was detected among 2 multipara.

Out of 26 primiparous patients, 11 had proliferative endometrium, 7 had secretory type, 3 had endometrial hyperplasia, 3 had irregular shedding, 1 had endometrial polyp and 1 case detected to have product of conception.

Among 6 nulliparous women 1 had proliferative endometrium, 3 had secretory type and 1 had endometrial hyperplasia. Whereas Arias Stella reaction was detected in 1 nulliparous woman.

### **Discussion**

DUB is a common gynecological condition. Diagnosis of DUB is achieved with the combination of the following: history, physical examination, laboratory evaluation, USG and confirmed by endometrial sampling. Dysfunctional uterine bleeding (DUB) is defined as excessively heavy, prolonged, or frequent bleeding of uterine origin that is not due to pregnancy or any recognizable pelvic or systemic cause. Apart from complete history, thorough clinical examination detailed investigations including bleeding time, clotting time, platelet count, prothrombin time, comment on peripheral smear, TSH, FT3 and FT4 to be done to diagnose any medical illness, ultrasonography of pelvis is an added beneficial tool to exclude organic pathology.

In present study of 165 patients, DUB was most common in perimenopausal age group (41-50 years) (41.21%). Rehana *et al.* <sup>[9]</sup> observed the maximum incidence of DUB in 30-39 years age group (32.5%). Jayneel *et al.* <sup>[10]</sup> observed the maximum incidence in 40-15 years age group (53.5%) similar to present study. The reason for increased incidence of abnormal uterine bleeding in this age group may be due to the start of climacteric period during which cycles shorten or prolong and often become anovulatory due to a decrease in the number of ovarian follicles and the estradiol level <sup>[11]</sup>.

Majority of them were multiparous (80.6%). Pilli *et al.* <sup>[12]</sup> observed 87% of their study population were multiparous.

Most of the cases belonged to middle socio-economic status, which is in contrast to studies done by Rashida *et al.* <sup>[13]</sup> and Sinha *et al.* <sup>[11]</sup>, who had majority of patients from lower socio-economic status.

Though menorrhagia (50.9%) is the most common bleeding pattern observed in present study in all the age groups, metrorrhagia, polymenorrhoea and metropahia haemorrhagica are also not uncommon. Sinha *et al.* <sup>[11]</sup> and Rashida *et al.* <sup>[13]</sup> also observed menorrhagia as the most common bleeding pattern in their study.

In reviewing the histo-pathological study of endometrium, proliferative endometrium is found to be the commonest endometrium pattern (41.88%) followed by hyperplasia (27.5%), secretory (21.88%) etc. Simple hyperplasia was more common than complex and atypical hyperplasia. Shah *et al.* <sup>[10]</sup> and Pilli *et al.* <sup>[12]</sup> also had observed proliferative endometrium most commonly.

Proliferative endometrium is the predominantly common in all age groups whereas hyperplastic endometrium mostly seen in the age group of 41-50 years. Proliferative endometrium was found in patients presenting with menorrhagia, metrorrhagia and haemorrhagia metropathica. Whereas hyperplastic endometrium was commonly found in patients presenting with menorrhagia. Pilli *et al.* [12] observed menorrhagia and metrorrhagia in all histological patterns.

The proliferative, secretory, hyperplastic endometrium was more common in multiparous women than in primipara and nullipara. 1 nulliparous patient had Arias-Stella reaction. Pilli *et al.* [12] observed two cases with Arias-Stella reaction. Atrophic endometrium was present in the age group of 51-70 years and all of them had polymenorrhoea.

The endometrial carcinomas were found in 1.25% of cases in 51-60 years age group. One case of endometrial carcinoma presented with menorrhagia and other one with meno-metrorrhagia.

Histopathological evaluation of endometrium helps exclude the local causes and establishes the diagnosis of DUB, its types, clinical correlation to histopathological findings and finally helps to determine the mode of management.

### **Conclusion**

AUB is more common in the perimenopausal age group, especially in multiparous women. Heavy menstrual bleeding is the most common bleeding pattern. In the present study proliferative, hyperplastic and secretory endometrium were more common in multipara than in primipara and nullipara. Significant number of endometrial samples revealed pathology rendering endometrial curetting and biopsy an important procedure. Cervical cytology is a valuable adjunct however histopathology remains the gold standard in diagnosis.

### **References**

1. Davis E, Spartzak PB. Abnormal Uterine Bleeding. [Updated 2023 Sep 4]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing, 2023 Jan. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK532913/>
2. Pados G, Athanatos D, Tsolakidis D, *et al.* Treatment options for dysfunctional uterine bleeding: evaluation of clinical results. *Gynecol Surg.* 2011;8:385-393. <https://doi.org/10.1007/s10397-011-0674-8>
3. Bardal SK. *Endocrinology.* Elsevier eBooks, 2011 Jan. <https://doi.org/10.1016/b978-1-4377-0310-8.00014-2> In-Text Citation: (Bardal, 2011)
4. Malhotra M, Malhotra J, Saxena R, Bora NM. *Jeffcoate's principles of Gynaecology.* 8<sup>th</sup> ed. New Delhi: Jaypee Brothers Medical Publishers Private Limited, 2014, 560.
5. Fraser IS, Langham S, Uhl-Hochgraeber K. Health related quality of life and economic burden of abnormal uterine bleeding. *Expert Rev Obstet Gynecol.* 2009;4:179-89.
6. Chen BH, Giudice LC. Dysfunctional uterine bleeding. *West J Med.* 1998 Nov;169(5):280-4.
7. Farrel E. Dysfunctional uterine bleeding. *Austral Fam Phys.,* 2004, 33(11).

8. National Collaborating Centre for Women's and Children's Health, National Institute for Health and Care Excellence. NICE guidelines CG44: heavy menstrual bleeding. Royal Coll Obstetric Gynaecologist, 2007.
9. Khan R, Sherwani R, Rana S, Hakim S, Jairajpuri Z. Clinco-Pathological Patterns in Women with Dysfunctional Uterine Bleeding. Iran J Pathol. 2016;11(1):20-26.
10. Shah JV, Pandya MJ, Prajapati PB, Senta DB, Patel MK. An analytical study of abnormal uterine bleeding in women of child bearing age group. Int. J Reprod Contracept Obstet Gynecol. 2021;10:3011-8.
11. Sinha K, Gurung P, Sinha HH, Bhadani PP. Study on abnormal uterine bleeding among adult women in a tertiary care hospital in Bihar, India. Int. J Reprod Contracept Obstet Gynecol. 2018;7:3136-40.
12. Pilli GS, Seth SB. Dysfunctional uterine bleeding-a study of 100 cases. J Obstet Gynecol of India. 2002;52(3):87-9.
13. Rashida Hafiz, Muhammad Ali, Mansoor Ahmad. Fibroid as a causative factor in menorrhagia and its management. Pakistan J Med Res., 2003, 42(3).