

# Evaluation of Adolescent Girls with Abnormal Uterine Bleeding in a Gynecology Outpatient Department

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## ABSTRACT

**Background:** Abnormal uterine bleeding (AUB) is a common gynecological problem among adolescent girls and is frequently associated with anemia, school absenteeism and reduced quality of life. Early identification of its causes is essential for proper management and prevention of complications. **Methods & Materials:** This hospital-based cross-sectional observational study was conducted in the Gynecology Outpatient Department of Bangladesh Medical University from January to December 2025. A total of 150 adolescent girls aged 10–19 years presenting with abnormal uterine bleeding were included using purposive sampling. Detailed history, clinical examination and relevant investigations were performed. Data were analyzed using SPSS version 25. **Results:** The majority of participants were in the 14–16 years age group (44.70%), followed by 17–19 years (36.60%) and 10–13 years (18.70%). Heavy menstrual bleeding was the most common complaint (61.30%), followed by irregular menstruation (49.30%). Ovulatory dysfunction was the leading cause of AUB (64.00%), followed by polycystic ovarian syndrome (16.00%), bleeding disorders (7.30%), thyroid disorders (5.30%), pelvic inflammatory disease (4.00%) and structural causes (3.40%). Anemia was highly prevalent; 36.00% had mild anemia, 32.70% moderate anemia and 8.70% severe anemia, while only 22.60% had normal hemoglobin levels. **Conclusion:** Ovulatory dysfunction is the most common cause of AUB among adolescent girls, with a high burden of anemia and heavy menstrual bleeding. Early evaluation and timely management are essential to reduce morbidity and improve quality of life.

**Keywords:** Abnormal uterine bleeding, adolescents, ovulatory dysfunction, anemia, heavy menstrual bleeding, gynecology outpatient.

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## INTRODUCTION

Abnormal uterine bleeding (AUB) is one of the most common gynecological problems among adolescent girls and represents a significant cause of outpatient visits to gynecology departments worldwide [1]. Adolescence is a transitional period characterized by the maturation of the hypothalamic-pituitary-ovarian axis and menstrual irregularities are frequently observed during this stage [2]. AUB in adolescents may present as excessive menstrual bleeding, prolonged menstruation, irregular cycles, frequent menstruation, or infrequent bleeding patterns. These conditions can adversely affect physical health, school attendance, social activities and psychological well-being [3]. The most common cause of abnormal uterine bleeding in adolescents is anovulatory cycles due to the immaturity of the hypothalamic-pituitary-ovarian axis [4]. However, several other etiological factors such as polycystic ovarian syndrome, coagulation disorders, thyroid dysfunction,

pelvic infections, nutritional deficiencies and systemic illnesses may also contribute to abnormal bleeding patterns [5]. In developing countries, anemia resulting from heavy menstrual bleeding is a major health concern among adolescent girls and may lead to fatigue, poor academic performance, reduced quality of life and increased healthcare burden [6]. Early identification of the underlying causes of AUB is important to prevent complications and ensure appropriate management [7]. Proper evaluation includes detailed menstrual history, clinical examination, laboratory investigations and imaging studies where necessary [8]. Despite the high prevalence of this condition, many adolescent girls do not seek medical care due to social stigma, lack of awareness, inadequate menstrual education and limited access to specialized healthcare services. Consequently, many cases remain undiagnosed and untreated for prolonged periods [9]. Several studies conducted in different countries have demonstrated varying

etiological patterns of adolescent AUB depending on geographical, nutritional and socioeconomic factors [10]. However, limited data are available regarding the clinical presentation and causes of abnormal uterine bleeding among adolescent girls attending gynecology outpatient departments in Bangladesh. Understanding the local disease pattern is essential for developing effective diagnostic and management strategies [11]. Therefore, this study was undertaken to evaluate adolescent girls presenting with abnormal uterine bleeding in the Gynecology Outpatient Department of Bangladesh Medical University. The study aimed to assess the clinical characteristics, associated etiological factors and hematological status of these patients to improve awareness and guide appropriate management of adolescent abnormal uterine bleeding.

## METHODS & MATERIALS

This hospital-based cross-sectional observational study was conducted in the

Gynecology Outpatient Department of Bangladesh Medical University from January 2025 to December 2025 to evaluate adolescent girls presenting with abnormal uterine bleeding. A total of 150 adolescent girls aged 10–19 years were included in the study by purposive sampling technique. Detailed history regarding menstrual pattern, duration and amount of bleeding, associated symptoms, medical history and family history was taken using a structured questionnaire. General physical examination and relevant gynecological examinations were performed maintaining privacy and confidentiality. Laboratory investigations

including complete blood count, coagulation profile, thyroid function tests and ultrasonography were done whenever indicated.

The inclusion criteria were adolescent girls aged 10–19 years attending the gynecology outpatient department with complaints of abnormal uterine bleeding and willing to participate in the study. Exclusion criteria included patients with pregnancy-related bleeding, previously diagnosed gynecological malignancy, severe systemic illness, current hormonal therapy and those unwilling to provide consent.

Collected data were checked, cleaned and analyzed using IBM SPSS Statistics.

Descriptive statistics such as frequency, percentage, mean and standard deviation were calculated where appropriate. The findings were presented in tables and charts.

**RESULTS**

Table I shows the age distribution of the 150 study participants. The majority of adolescent girls belonged to the 14–16 years age group, comprising 67 patients (44.70%), followed by those aged 17–19 years, who accounted for 55 cases (36.60%). The smallest proportion was in the 10–13 years group, with 28 patients (18.70%).

**Table I**  
Age Distribution of the Study Patients (n=150).

Age group (years)	Frequency	Percentage
10–13	28	18.70%
14–16	67	44.70%
17–19	55	36.60%
Total	150	100.00%

Table II presents the distribution of presenting complaints among the 150 study participants. Heavy menstrual bleeding was the most common complaint, reported by

92 patients (61.30%), followed by irregular menstruation in 74 patients (49.30%). Weakness and fatigue were noted in 58 cases (38.70%), while prolonged

menstruation was observed in 48 patients (32.00%). Dysmenorrhea and passage of clots were reported by 41 (27.30%) and 36 (24.00%) patients, respectively.

**Table II**  
Presenting Complaints of the Study Patients (n=150).

Presenting complaints*	Frequency	Percentage
Heavy menstrual bleeding	92	61.30%
Irregular menstruation	74	49.30%
Prolonged menstruation	48	32.00%
Dysmenorrhea	41	27.30%
Passage of clots	36	24.00%
Weakness/fatigue	58	38.70%

Table III illustrates the etiological pattern of abnormal uterine bleeding among the 150 study participants. Ovulatory dysfunction (anovulatory cycle) was the leading cause, accounting for 96 cases

(64.00%). Polycystic ovarian syndrome was identified in 24 patients (16.00%), while bleeding disorders contributed to 11 cases (7.30%). Thyroid disorders, pelvic inflammatory disease and structural causes

were less common, found in 8 (5.30%), 6 (4.00%) and 5 (3.40%) patients, respectively.

**Table III**  
Etiological Pattern of Abnormal Uterine Bleeding among the Study Patients (n=150).

Etiology	Frequency	Percentage
Ovulatory dysfunction (anovulatory cycle)	96	64.00%
Polycystic ovarian syndrome	24	16.00%
Bleeding disorder	11	7.30%
Thyroid disorder	8	5.30%
Pelvic inflammatory disease	6	4.00%
Structural causes	5	3.40%
Total	150	100.00%

Table IV demonstrates the hemoglobin status of the 150 study participants. The majority of patients had some degree of anemia, with mild anemia (10–11.9 g/dL)

being the most common, affecting 54 patients (36.00%), followed by moderate anemia (7–9.9 g/dL) in 49 patients (32.70%). Severe anemia (<7 g/dL) was

observed in 13 patients (8.70%). Only 34 patients (22.60%) had normal hemoglobin levels (≥12 g/dL).

**Table IV**  
Hemoglobin Status among the Study Patients ( $n=150$ ).

Hemoglobin level	Frequency	Percentage
Mild anemia (10–11.9 g/dL)	54	36.00%
Moderate anemia (7–9.9 g/dL)	49	32.70%
Severe anemia (<7 g/dL)	13	8.70%
Normal ( $\geq 12$ g/dL)	34	22.60%
Total	150	100.00%

## DISCUSSION

Abnormal uterine bleeding is a common gynecological problem during adolescence and significantly affects the physical and psychological well-being of young girls. The present study evaluated 150 adolescent girls with abnormal uterine bleeding attending the gynecology outpatient department of Bangladesh Medical University.

In the current study, the majority of patients belonged to the 14–16 years age group (44.70%), followed by 17–19 years (36.60%). Similar findings were reported by Rahman et al., who observed a high prevalence of menstrual irregularities among mid-adolescent girls in rural Bangladesh [12]. Salih et al., also noted that abnormal uterine bleeding was more frequent during middle adolescence due to immaturity of the hypothalamic-pituitary-ovarian axis [13]. Adeyemi-Fowode et al., described adolescence as a vulnerable period for menstrual dysfunction because ovulatory cycles are often not fully established during the early years after menarche [14].

Heavy menstrual bleeding was the most common presenting complaint in the present study, affecting 61.30% of patients, followed by irregular menstruation in 49.30% cases. Similar observations were reported by Comishen et al., who identified heavy menstrual bleeding as the predominant symptom among adolescents with abnormal uterine bleeding [15]. Krishna et al. in their systematic review also found heavy menstrual bleeding to be one of the most prevalent subtypes of adolescent AUB [16]. Attia et al., emphasized that irregular menstruation and excessive menstrual bleeding significantly impair daily activities, school attendance and quality of life among adolescent girls [17].

The present study demonstrated that ovulatory dysfunction was the leading etiological factor, accounting for 64.00% of cases. This finding is consistent with the reports of Adeyemi-Fowode et al. and Mikes et al., who stated that anovulatory cycles due to immaturity of the hypothalamic-pituitary-ovarian axis represent the most common cause of adolescent AUB [14,18]. Anthon et al. similarly described ovulatory dysfunction as the principal diagnostic challenge in adolescent menstrual disorders. Polycystic ovarian syndrome was identified in 16.00%

of cases in this study [19]. Itriyeva reported that obesity and hormonal imbalance during adolescence increase the risk of menstrual irregularities and polycystic ovarian syndrome, supporting the findings of the present study [20].

Bleeding disorders were found in 7.30% of patients in the current study. Comparable findings were described by Comishen et al., who highlighted that inherited bleeding disorders are important contributors to heavy menstrual bleeding among adolescents [15]. Thyroid disorders were observed in 5.30% of cases in our study, which is consistent with the observations of Chang et al., who noted that endocrine and systemic disorders can influence menstrual patterns in adolescents and young adults [21].

Anemia was highly prevalent in the present study. Mild anemia was observed in 36.00% of patients, moderate anemia in 32.70% and severe anemia in 8.70% cases. Munro et al. demonstrated a strong relationship between heavy menstrual bleeding, iron deficiency and anemia among reproductive-age females [22]. Similar findings were also supported by Gerema et al., who reported that prolonged and excessive menstrual bleeding commonly results in anemia and fatigue [23]. In our study, weakness and fatigue were present in 38.70% of patients, likely due to chronic blood loss and reduced hemoglobin levels.

The findings of the present study emphasize the importance of early diagnosis and appropriate evaluation of adolescent girls presenting with abnormal uterine bleeding. Adequate menstrual counseling, nutritional support and timely management may reduce complications and improve quality of life.

## LIMITATIONS

This study was conducted in a single tertiary care hospital with a relatively small sample size of 150 adolescent girls, which may limit the generalizability of the findings to the broader adolescent population. As the study was based on purposive sampling and cross-sectional design, causal relationships could not be established. In addition, follow-up data were not collected, which limits assessment of long-term outcomes and treatment response.

## CONCLUSION

Abnormal uterine bleeding in adolescent girls is a common clinical problem, with ovulatory dysfunction being the most frequent underlying cause. The condition is strongly associated with a high burden of anemia, particularly mild to moderate forms, highlighting its significant impact on adolescent health. Early recognition, proper evaluation and timely management are essential to reduce complications, improve quality of life and prevent long-term consequences.

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## CONFLICTS OF INTEREST

There are no conflicts of interest.

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