

# Evaluation of Prevalence of Unscheduled Uterine Bleeding in Teen Aged Girls : A Cross Sectional Observational Study-100 cases

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## ABSTRACT

**Background:** Unscheduled uterine bleeding or abnormal uterine bleeding after menarche can occur due to ovulatory dysfunction between the age of 10 to 18 years. But the perception of the normal menstrual cycle makes worries to these girls and families because they have fear of the adverse effect of these on their future reproductive function. Evaluation of teen-aged girls can help us to exclude pathology and alleviate anxiety from her and their families. The aim of the study is to see the prevalence of unscheduled uterine bleeding in teen-aged girls attending OPD, in tertiary level hospitals.

**Materials and methods:** A total of 100 cases were included in this study between June 2019-June 2020. Patients at post menarche period presenting with abnormal uterine bleeding or unscheduled uterine bleeding were included. Clinical diagnosis was made based on history, clinical examinations & investigations. Clinical diagnosis according to FIGO ovulatory dysfunctions was revealed in most of the cases. But in adults, according to PALM-COEIN most of the cases are due to organic causes was detected. Detailed discussion about the study was done with patient & parents. Informed consent was taken from them. Data was collected in a predesigned data collection sheet. Data were expressed in terms of percentage.

**Results:** Most of the patients were in the age group of 8-14years (54%), 35% were between 14-18 years. 60% of the study patients were from urban areas. About 78% of parents had a monthly income of > 20,000 taka. Most of the patients were presented with heavy menstrual bleeding. 43% presented with bleeding for 7-10 days, 40% bleeding for > 10days & irregular continuous bleeding in 17% cases. Most of the patients needed more than an average number of pads used per cycle. 15% needed double protections. Only 20% of the study patients had a regular cycle, but most of them (63%) had irregular cycles and in 17% of cases no cycle pattern was maintained. On examination for other associated features, 97% had normal secondary development according to Tanner's stage, only 3% showed delayed development. In this study, BMI was normal in 30% cases, 58% were overweight, 10% were obese, 2% were morbidly obese. On clinical evaluation, pulse rates were within the normal range in 25% cases, 60% had tachycardia, 15% had pulse more than 110/min. Hypotension was recorded in 15% of cases. Regarding investigation findings, Hb% was < average in all cases, 33% had 8-10g%, 65% had 7-8g% & < 7g% in about 12% cases. Hypothyroidism was detected in 6% of patients, & pelvic ultrasound was normal in all cases.

**Conclusions:** Abnormal Uterine Bleeding – Ovulatory Dysfunction (AUB- O) was the leading cause of unscheduled uterine bleeding during post menarche period.

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**Key words:** Adolescent girls; Medical treatment; PALM-COEIN classification; Unscheduled uterine bleeding.

## Introduction

Excessive bleeding occurring from menarche up to the age of 20 years either in duration, volume, frequency and/or regularity arbitrarily defined as pubertal bleeding or special clinical type of bleeding<sup>1</sup>. Due to gradual maturation of the hypothalamo-pituitary ovarian axis, an-ovulation is common during this period which leads to abnormal uterine bleeding. Other associated causes are bleeding diathesis, thyroid dysfunctions, sometimes pregnancy complications, rarely organic pathology may increase morbidity<sup>2</sup>. Unscheduled uterine bleeding decreases quality of life, affects school attendance, limits

participation in sports & social activities<sup>3</sup>. Near miss menarche can also occur in severe cases. Although management of these problems has evolved, the most important goal remains to alleviate the anxiety of both affected girls & their families & underlying medical conditions that may have chronic health effects. Other types of bleeding can occur like precocious puberty, non-menstrual bleeding (Foreign body, trauma, vaginitis, neoplasm). Among different types of menstrual abnormalities like menorrhagia, Polymenorrhagia, Polymenorrhoea, Hypomenorrhoea, Oligomenorrhoea, Metrorrhagia, Dysfunctional uterine bleeding is a more common type of abnormal uterine bleeding.

### Materials and methods

This observational prospective study was conducted in BangaBandhu Memorial Hospital (BBMH) Chattogram between June 2019-May 2020. From all patients attended at OPD with AUB, only patients with post-menarchal unscheduled uterine bleeding were selected for the study. A total of 100 patients fulfilled the selection criteria. Each patient was informed about the study & consent was taken. Diagnosis of unscheduled uterine bleeding was done based on history taking, examination & necessary investigations. All adolescent patients with post menarchal (8-20 yrs) period presented at OPD with unscheduled uterine bleeding were included in this study. Patients with the normal menstrual cycle, other adolescent gynecological problems were excluded from the study. The diagnosis was made by history taking of previous 6 months cycle pattern, history of the development of secondary sex characteristics & investigation reports. All collected data were plotted on a pre-designed data sheet. Data were expressed in terms of frequency & percentage.

### Results

Most of the patients (54%) were in the age group of 8-14 yrs. Only 10% belong to more than 18 yrs age group. About 60% of the study patients were from urban areas and the monthly income of the parents was found to be more than 20,000 takas in most cases. 60% of the families comprised of 3-4 members. The socio-demographic characteristics of the participants are shown in Table I.

**Table I** Socio-demographic characteristics of the respondent (n=100)

Variables	Percentage
Age Category	
<8 Years	03
8-14 Years	54
14-18 Years	35
>18 years	10
Area of Residence	
Urban	60
Rural	40

No. of Family Members	
3	15
2-4	60
>4	25
Monthly Income of Parents	
>20,000 BDT	78
<20,000 BDT	22

About 40% of the patients presented with bleeding for more than 10 days, 17% with irregular & continuous bleeding. Only 43% presented with bleeding for 7-10 days. Most of the girls required more than average numbers [10 to 15 pads or more than 15 pads daily. Double protection and unusual clothe soaking were mentioned by 15% & 5% of girls respectively. Most of the study patients presented with irregular bleeding. Menarche started within the normal age range in about 78% of cases, only 2% had delayed menarche. The cycle was regular in only 20% of cases, 63% of cases had an irregular cycle & 17% developed continuous bleeding (Table II).

**Table II** Bleeding characteristics of the respondents (n=100)

Bleeding Characteristics	Percentage
Continuous Bleeding for 7-10 Days	43
Bleeding for >10 Days	40
Irregular and Continuous Bleeding	17
<b>Using Pad/day</b>	
10-15 Pads	33
>15 Pads	37
Double Protection	15
Using Large Piece of Cloth	10
Soaking All Cloths	5
<b>Age of Menarche</b>	
<8 Years	3
8-14 Years	78
14-18 Years	10
>18 Years	2
<b>Menstrual Cycle Pattern</b>	
Regular Cycle	20
Irregular Cycle	63
Continuous Bleeding	17

Table III shows that in most of the cases menarche was at usual age, 75% cases had normal secondary developments according to Tanner's stage, 23% had delayed developments, only 2% had precocious puberty. Thyroid function evaluation shows a euthyroid state in 80% of cases, only 18% are hypothyroid patients, 2% are hyperthyroid patients. The hemolytic disease was diagnosed in 5% of patients, among them  $\beta$  thalassemia 2% cases, 2% Hb E Traits, only 1% had idiopathic

thrombocytic purpura. Regarding anthropometric measurement 3% had height below average, 10% were obese.

**Table III** Relevant clinical features of the respondents (n=100)

Characteristics	Percentage
<b>Secondary Development According to Tanner Stage</b>	
Normal	75
Delayed	23
Precocious	2
<b>Thyroid Status</b>	
Euthyroid	80
Hypothyroid Status	18
Hyperthyroid Status	2
<b>Hemolytic Diseases</b>	
No	95
Hb E Trait	2
Thalassemia	2
ITP	1
<b>Height Category</b>	
Normal for Age	97
Below normal for Age	3
<b>Weight Category</b>	
Average for Age	40
Above average for Age	50
Below average for Age	10
<b>BMI Category</b>	
Normal 30	
Overweight	58
Obese 10	
Morbidly Obese	2
<b>Pulse</b>	
Normal 25	
Tachycardia	60
Extreme Tachycardia	15
<b>Blood Pressure</b>	
Normal Range	85
Hypotension	15
<b>Hb%</b>	
<7 gm/dL	12
7-8 gm/dL	65
>8-10 gm/dL	33
<b>USG – Pelvic Organ</b>	
Normal	100

### Discussion

Unscheduled uterine bleeding or abnormal uterine bleeding following menarche can occur between 14yrs to 20 yrs. Due to ovulatory dysfunction after the menarche cycle is irregular, unpredictable, heavy, prolonged, rarely skipped menstruation for 3 or more months may occur<sup>4</sup>. Thus perception of the normal menstrual cycle varies in these girls & families. Heavy Menstrual

Bleeding (HMB) is the most common form of AUB & is defined as excessive menstrual blood loss that interferes with a women's physical, social, emotional and quality of life<sup>5</sup>. Some additional signs of HMB or unscheduled bleeding are changing pads or tampons more frequently (Every 1-2 hours intervals) use of double protections, frequent soiling of clothes or bed sheets, the passage of blood clots of more than 1-inch diameter<sup>6</sup>. Unscheduled bleeding can also be acute or chronic in presentation. Acute refers to an episode of heavy bleeding which is sufficient in quantity to require immediate intervention to prevent further blood loss. Abnormality in quantity, regularity and/or timing in the last 6 months may all be defined as chronic AUB<sup>7</sup>. On examination of teen aged girls, BMI, degree of pallor, signs of a bleeding disorder, cardiorespiratory status was evaluated. Regarding laboratory evaluation of adolescents presenting with unscheduled blood loss CBC, blood grouping and Rh typing, cross-matching with donor (If needed) Serum TSH are 1<sup>st</sup> line investigations. In addition, coagulation profile like Activated Partial Thromboplastin Time, prothrombin time, fibrinogen level & other tests for coagulation disorders were done in special cases<sup>8</sup>. Routine pelvic imaging was done for exclusion of anatomical /acquired pathology. Regarding management of unscheduled bleeding in this period of age outpatient management is more common, reassure that their menstrual cycle would become cyclical & ovulatory over time. However, treatment is required if anaemia is present or if there is an impaired quality of life. After diagnosis, we improve their general conditions by diet and then medical management started if needed. Acute blood loss was detected in 12 cases and needed hospitalization followed by blood transfusion. Hormonal treatment was given to them. "Near Miss Menarche" is new for this age group & needs continuous monitoring. Non-hormonal treatment by antifibrinolytics (Tranexamic acid/Aminocaproic acid) was given 500mg-1000mg three times daily during a bleeding episode to continue for 3-5 days<sup>9</sup>. Hormonal management by combined oral pill or progesterone should be given cyclically<sup>10</sup>. Before starting either oral pill or progesterone, counseling about continuity, the importance of regular dose, no adverse effects on future fertility, no adverse effects on ovarian reserves & endometrial physiology during a subsequent period of reproductive age. If there is mild or moderate bleeding not impairing quality of life or Hb% 10-12g/dl is maintained then only observation with an improvement of general health, to maintain normal BMI during adolescent period and also reproductive age. But if there is moderate bleeding with Hb% 8-10g/dl, then hormonal therapy started, to

continue until Hb% is up to 12g/dl, with at least 6 months of iron therapy. Long-term treatment for bleeding disorder should be given accordingly. Optimization of diet to maintain normal BMI is essential for an anovulatory cycle. Breakthrough bleeding is a common side effect, which is usually managed by proper counseling & to maintained a normal interval of doses during hormone intake. The FIGO suggested a common classification of AUB in reproductive age in 9 main categories like "PALM-COEIN". But in post menarche period during adolescent age organic causes are less common but ovulatory dysfunction is more common but can be associated with other causes.

### Conclusion

Unscheduled uterine bleeding at beginning of reproductive age may be acceptable after excluding pathology because hypothalamo pituitary ovarian axis takes time to become mature for regular ovulation. But it may be the 1<sup>st</sup> sign of underlying bleeding disorder. Teen aged girls with abnormal uterine bleeding should be evaluated with care & a wide differential diagnosis keeping in mind. Hormonal therapy is usually an effective & sufficient treatment. Usually, teen-aged girls respond well to hormonal therapy. Special hematological investigations, imaging methods & clinical intervention should be considered in patients who do not respond to hormonal treatment.

### Disclosure

All the authors declared no competing interest.

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