

Frequency of Bleeding Disorders in Teenage Girls Presenting with Menorrhagia

SOBIA MAZHAR, SAJJAD MASOOD, HAIDER ALI BHATTI*.

ABSTRACT

Aim: To determine the frequency of factors causing bleeding disorders in teenage girls presenting with menorrhagia

Study design: Cross sectional study

Settings:-Department of Obstetrics and Gynecology, Multan Medical & Dental College, Multan

Duration of study: December 2015 to June 2016.

Subjects and methods: Patients fulfilling the inclusion criteria from out door department of obstetrics and gynaecology Multan Medical & Dental College, Multan were included in the study. 5 ml of venous blood was drawn from the antecubital vein from all the subjects after proper aseptic precautions, into sterile and disposable plastic syringes. Pelvic ultrasound was done to all subjects. Data was recorded for factors of bleeding disorders (Polycystic ovary syndrome, thrombocytopenia).

Results- Among 247 patients, majority of the patients was in age group 13-16 years i.e. 78.94% and 66.80% were having normal BMI. In 63.96% of cases duration of complaint was of more than one year. Majority of the patients i.e. 57.08% were having haemoglobin levels between 7-10 gm/dl and 62.34% of patients was belonging to rural area. Education up to primary was the main finding in both patients and parents. Among 247 teenage patients presenting with menorrhagia, PCOS was a finding in 10.93% of patients and in 6.47% of patients, thrombocytopenia was the cause of this abnormal uterine bleeding. No such pathological factors were observed in 82.59% of the cases.

Conclusion: Most abnormal bleeding in adolescents is caused by immaturity of the hypothalamic - pituitary ovarian axis resulting in anovulation. Approximately 17.41 of adolescents have an underlying endocrine or haematological disorder.

Key words: Menorrhagia, polycystic ovarian disease, thrombocytopenia, teenage.

INTRODUCTION

Menorrhagia is a common problem in adolescent girls where it comprises a significant public health problem¹. Menorrhagia affects almost one-third of adolescent girls at time of the menarche². Reports from multiple studies indicate that between 5 and 10 percent of young girls in this age group will seek medical treatment and of those, approximately one-half will experience surgical intervention³.

A common cause of menorrhagia in adolescence is immaturity of the hypothalamic pituitary ovarian (HPO) axis with resultant anovulation. Some experts estimate that immaturity of the HPO axis is the underlying cause of menorrhagia in approximately 75% of cases in young females⁴.

Von Willebrand disease, platelet function disorder and coagulation factor deficiencies are seen to be associated with adolescent menorrhagia in one third of the cases. Other conditions that lead to heavy

menstrual bleeding in adolescence are tuberculosis of genital tract, polycystic ovarian disease and hypothyroidism⁵.

Bevan JA and his associates has found in a study that frequency of thrombocytopenia was 13% and VonWillebrand disease was 7.14% in teenage girls presenting with menorrhagia⁶.

MATERIAL AND METHODS

This Cross sectional study was carried out in the Department of Obstetrics and Gynecology, Multan Medical & Dental College, Multan from December 2015 to June 2016. A total of 247 girls aged from 13-19 years with menorrhagia > 6 months were included in the study. Married girls having history of with receiving treatment with anticoagulants, antifibrinolytics and non-steroidal, anti-inflammatory drugs and hypertension were excluded from the study.

Patients fulfilling the inclusion criteria were included in the study after permission from ethical committee and research department. Baseline demographic information of patients (age, height, BMI, duration of complaint, haemoglobin level,

Department of Obs Obstetrics & Gynaecology, Multan Medical & Dental College, Multan.

**MO Ibn-e-Siena Hospital, Multan Medical & Dental College, Multan. Correspondence to Dr. Sobia Mazhar, Associate Professor ofsobiamazhar11@hotmail.com*

education level of parents or guardians) was taken. Informed consent was taken from each patient, ensuring confidentiality and fact that there is no risk involved to the patient while taking part in this study.

Data was analyzed with SPSS version 15. Frequency and percentages were computed for qualitative variables like age group, education level (parents and patient), polycystic ovarian disease and thrombocytopenia. Mean \pm SD was presented for quantitative variables like age, haemoglobin level, duration of complain, height weight and BMI.

RESULTS

Among 247 patients, majority of the patients was in age group 13-16 years i.e., 78.9% and 21.1% of patients were in age group 17-19 years (Table 1).

Analysis of BMI distribution of patients showed that majority of the patients (66.8%) were having normal BMI i.e. 18.5-25. 19% of patients were having their BMI <18.5 and 14.2% of patients were having their BMI 25-30 (Table 2).

Out of 247 cases of menorrhagia, the duration of the complaint was 6 month to 1 year in 36% of cases and in 64% of cases duration of complaint was of more than one year. Among 247 patients, majority of the patients i.e. 57.1% were having haemoglobin levels between 7-10 gm/dl. 36.8% of patients were having their haemoglobin level >10 gm/dl and in 6.1% of patients, haemoglobin level was less than 7 (Table 3).

Among 247 teenage patients presenting with menorrhagia, PCOS was a finding in 10.9% of patients and in 6.5% of patients, thrombocytopenia was the cause of this abnormal uterine bleeding. No such pathological factors were observed in 82.6% of the cases (Table 4).

Table-1: Age distribution (n=247)

Age (years)	n	%age
13-16	195	78.9
17-19	52	21.1

Mean age of the study group was 15.06 \pm 1.74.

Table-2: Distribution according to BMI (n=247)

BMI (kg/m ²)	n	%age
<18.5	47	19.0
18.5-25	165	66.8
25-30	35	14.2

Mean BMI of the studied population was 22.15 \pm 3.34

Table-3:- Haemoglobin status of the patients (n=247)

Haemoglobin	n	%age
>10 gm/dl	91	36.8
7-10 gm/dl	141	57.1
<7 gm/dl	35	06.1

Mean Haemoglobin in gm/dl was 9.38 \pm 1.93

Table 4:- Frequency of factors causing bleeding in teenage girls presenting with menorrhagia (n=247)

Factors	n	%age
PCOS	27	10.9
Thrombocytopenia	16	06.5
Normal findings	204	82.6

DISCUSSION

Gynaecological problems of adolescents occupy a special place in the spectrum of gynaecological disorders of all age groups. The reason is that the physical aspects of disease which are so special and specific for the young girls and also because of related psychological factors which have prime place in growth and psychological remodeling of an individual who is at the end of her childhood and entering into womanhood⁸⁻¹⁰. Adolescent gynaecology is that portion of gynaecology that is not fully explored especially in underdeveloped parts of world^{11,12}.

Irregular uterine bleeding in adolescence is responsible for upto 50% of the visits of the young girls to gynaecologists. Their symptoms range from mild spotting to heavy bleeding. Adolescent menorrhagia is defined as excessive bleeding which occurs between menarche and 19 years of age¹³. Heavy menstrual bleeding in adolescent girls is caused by anovulatory menstrual cycles in 80% of the cases. The hypothalamus is not mature so the positive feedback mechanism is not adequate enough to produce the desired effects. As a result estrogen levels are constantly raised. An organic disease or malignancy in particular, is very rare^{8,10}.

In patients which constitute the gynaecological population. Yet, gynaecologists under estimate the coagulation disorders in the aetiology of abnormal uterine bleeding¹¹. Most of the studies conducted in western world have shown vWD as the most common disease which causes heavy menstrual bleeding in young girls whereas in South East Asia platelet function disorder emerged as most common cause^{10,11}. Limited information exists on the inherited causes which underlie the women bleeding problems. Moreover no such study is conducted in our local population. That is why researcher decided to determine the frequency of bleeding disorders in teenage girls presenting with menorrhagia in our general population.

Table-4 is showing frequency of factors causing menorrhagia in teenage girls. Among 247 teenage patients presenting with menorrhagia, PCOS was a finding in 10.9% of patients and in 6.5% of patients, thrombocytopenia was the cause of this abnormal uterine bleeding. No such pathological factors were observed in 82.6% of the cases.

The results revealed by the present study are

comparable with the results of another local study conducted in the Pakistan¹⁴.

PCOS among adolescents is an emerging problem that needs careful assessment, timely intervention, and appropriate treatment. The most common endocrinological cause of irregular bleeding periods in adolescence is PCOS¹⁵. The irregular bleedings in PCOS may be seen because of chronic anovulation¹⁶. In contrast to the results of the present study, 2.8% of the patients had polycystic ovary syndrome (PCOS) in another study.

Rotterdam shows prevalence of PCOs to be 22.5% and 10.7% by Androgen Excess Society criteria. Normal body weight is seen in 71.8% of PCOs diagnosed by Rotterdam criteria in another study¹⁷. In another study 12.5% patients had PCOs¹⁸. Albert Altcheck et al. in his study showed 25% patients with persistent DUB manifested as PCOs¹⁹. Sanjay Rao et al. observed 2.8% patients having PCOs⁸.

Claessen et al found 20% of cases of menorrhagia to be due to primary coagulation disorders²⁰. Platelet function defects are an important cause of menorrhagia. Saxena¹⁴ et al found platelet function disorder in 83% of women with menorrhagia due to coagulation defects. Phillip et al²¹ reported an incidence of abnormal platelet aggregation in 45% of women with bleeding disorder.

A retrospective review of outpatient and inpatient adolescents seen at a children's hospital for menorrhagia revealed that 13% had thrombocytopenia, 8% had abnormal platelet function and 11% had inherited coagulation disorders. Among those with thrombocytopenia, the most common diagnoses were ITP (55%) and chemotherapy-induced myelosuppression (22%)²².

CONCLUSION

Most abnormal bleeding in adolescents is caused by immaturity of the hypothalamic - pituitary ovarian axis resulting in anovulation. Approximately 17.41 of adolescents have an underlying endocrine or haematological disorder.

REFERENCES

1. Amesse LS, French JA, Pfaff-Amesse T. Platelet function disorders in adolescents with heavy menstrual bleeding. *J Blood Disorders Transf* 2013; 5: 186.

2. Hayon R, Dalby J, Paddock E, Combs M, Schrage S. Reproductive health care of adolescent women. *J Am Board Fam Med* 2013; 26: 460-69.
3. Doherty L, Harper A, Russell M. Menorrhagia management options. *Ulster Med J*. 1995; 64: 64-71.
4. Sokkary N, Dietrich JE. Management of heavy menstrual bleeding in adolescents. *Curr Opin Obstet Gynecol* 2012; 24: 275-80.
5. Prasad HL, Manjunatha HK, Ramaswamy AS, Muddegowda PH, Lingegowda JB, Hanagavadi S et al. Adolescent menorrhagia: study of the coagulation profile in a tertiary centre in South India. *J Clin Diagn Res* 2011; 5(8): 1589-92.
6. Bevan JA, Maloney KW, Hillery CA, Gill JC, Montgomery RR, Scott JP. Bleeding disorders: a common cause of menorrhagia in adolescents. *J Pediatr* 2001; 138(6): 856-61
7. Azziz R. Diagnosis of polycystic ovarian syndrome: the rotterdam criteria are premature. *J Clin Endocrinol Metab* 2006; 91(3): 781-5.
8. Rao S, Pawar V, Badhwar VR, Fonseca MN. Medical interventions in puberty Menorrhagia. *Br Med J* 2004; 328: 921.
9. Brenner PF. Differential diagnosis of abnormal uterine bleeding. *Am J Obstet Gynaecol* 1996; 175: 766-9.
10. Roychowdhury J, Choudhuri S, Sarkar A, Biswas PK. A study on the evaluation of the aetiological factors and the management of puberty menorrhagia. *Online J Health Allied Scs* 2008; 7(1): 1-6.
11. Hickey M, Balen A. Menstrual disorders in adolescence: investigation and management. *Human reproduction update* 2003; 9(5): 493-504.
12. Sebanti G, Rekha D, Sibani S. A profile of adolescent girls with gynecological problems. *J Obstet Gynaecol India* 2005; 55(4): 353-5.
13. Kishan Prasad HL, Manjunatha HK, Ramaswamy AS, Muddegowda PH, Lingegowda JB, Hanagavadi S et al. Adolescent Menorrhagia: Study of the Coagulation Profile in a Tertiary Centre in South India. *J Clin Diag Res* 2011. 5(8): 1589-92.
14. Gillani S, Mohammad S. Puberty menorrhagia: causes and management. *J Med Sci* 2012; 20(1): 15-8.
15. Slap GB. Menstrual disorders in adolescence. *Best Pract Res Clin Obstet Gynaecol* 2003; 17: 75.
16. LaCour DE, Long DN, Perlman SE. Dysfunctional uterine bleeding in adolescent females associated with endocrine causes and medical conditions. *J Pediatr Adolesc Gynecol* 2010; 23: 62-70.
17. Joshi B, Mukherjee S, Patil A, Purandare A, Chauhan S, Vaidya R. A cross-sectional study of polycystic ovarian syndrome among adolescent and young girls in Mumbai, India. *Indian J Endocr Metab* 2014; 18: 317-24.
18. Prameela, Iffath SM. Study of puberty menorrhagia in inpatient admissions. *Sch J App Med Sci* 2015; 3(3A): 1060-3.
19. Albert A. Dysfunctional uterine bleeding in adolescence. *Clin Obstet Gynecol* 1977; 20(3): 633-50.
20. Claessens EA, Cowell CA. Acute adolescent menorrhagia. *Am J Obstet Gynecol* 1981; 139: 277. 21. Philipp CS, Faiz A, Dowling N, Dille A, Micheals LA. Age and prevalence of bleeding disorders in women with menorrhagia *Obstet Gynaecol* 2005; 105: 61-8.
21. Kouides PA. Obstetric and gynaecological aspects of von Willebrand disease. *Best Pract Res Clin Haematol* 2001;14: 381-99.