Study of evaluation of puberty menorrhagia

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Abstract Puberty menorhagia is defined as excessive bleeding occurring between menarche and 19 years of age. Onset of menstruation is influenced by many factors like genetic, nutrition, body weight and maturation of hypothalamic pituitary ovarian axis. A study was conducted in MGM Medical College and Hospital, Aurangabad between October 2013 to October 2015. 52 adoloscents with complaints of menorrhagia were studied regarding their age, relation of bleeding in reference to menarche, socioeconomic status. The duration and type of symptoms was assessed along with investigations. Key Words: Menorrhagia, Puberty, Anovulatory cycles, adolescent, PCOS, Hypothyroidism.

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Received Date: 20/04/2017 Revised Date: 14/05/2017 Accepted Date: 02/06/2017



INTRODUCTION

Puberty is a period of transition between childhood and adult life in which relevant physical and mental changes occur. Puberty menorrhagia is defined as excessive bleeding occurring between menarche and 19 years of age¹. Onset of menstruation is influenced by number of factors like genetic, nutrition, body weight and maturation of hypothalamic pituitary ovarian axis. In majority of cases early menstrual cycles are anovulatory. It may take as many as 5-8 years before menstrual cycle normality is established. During this time adolescents may commonly present with menstrual irregularities². Prevalence of menorrhagia in adolescent population with bleeding disorders may vary between 14-48%. Menstrual cvcle disturbances such as menorrhagia (heavy menstrual bleeding), dysmenorrhea and irregular cycles are common during adolescence and are attributed to an immature hypothalamic-pituitary-ovarian axis. During the first year after menarche mean cycle interval is 32.2 days varying

between 21 to 45 days. Normal menstrual flow rarely exceeds 7days and monthly average blood loss is estimated to be 35ml ranging between 10 to 80 ml.

Definitions and Terminology

Abnormal uterine bleeding refers to perceived abnormal or excessive menstrual or non menstrual blood loss³. Dysfunctional uterine bleeding is a subset of AUB and may have ovulatory or non ovulatory bleeding which is prolonged, excessive without pattern or any organic cause³. AUB accounts for approximately 50% of visits of adolescent girls to gynaecologists. In 80% of cases, puberty menorrhagia is caused by anovulatory cycles. There is an immaturity of hypothalamus and an inadequate feedback resulting in sustained high levels of estrogen. These complaints may range from minimal spotting to profuse bleeding. The prevalence of blood disorders varies depending on underlying etiology, age, ethnicity, family history and presence of comorbid conditions. Coagulation disorders are prevalent in 1% of general population and their incidence may be as high as 5% in gynaecological population. Common conditions are von Willebr and disease, platelet function disorders and coagulation factor deficiencies. Other conditions causing increased blood loss in this age group are hypothyroidism, genital tuberculosis and polycystic ovarian disease. When we are considering evaluation and treatment, adolescents may perceive more of an urgent need for immediate results with less of a long term perspective compared with older population. So it is critical to counsel the patient and her family that finding right treatment for lasting success may take time but emphasize that if both you and they are patient there will be successful outcome³. A study was conducted in MGM Medical College and Hospital, Aurangabad between October 2013 to October 2015. 52 adolescent girls with complaints of menorrhagia were studied.

MATERIAL AND METHODS

Inclusion Criteria:

All adolescent girls attending outpatient department of gynaecology department in MGM with complaints of menorrhagia.

Exclusion Criteria:

- 1. All married adolescent girls attending OPD with obstetric causes of menorrhagia.
- 2. Girls above 20 yrs with menorrhagia.
- 3. Adolescent girls with puberty menorrhagia, who had failed to come up for follow up during stipulated period.

Study Design: Non randomized prospective observational study.

In this study all the adolescents who presented with menorrhagia were analyzed to recognize influence of parent's socioeconomic status, literacy rate of parents, causes and effects of hormonal management. Detailed menstrual history was taken i.e. complaints of menorrhagia, metrorrhagia, polymenorrhagia were recorded. History of hypothyroidism, Hyperthyroidism, tuberculosis, treatment of PCOS, bleeding disorders was taken in detail. Menstrual history was noted in detail i.e. age of menarche, regularity of cycles in past and present, duration of flow, passage of clots, number of pads used per day, dysmenorrhoea and last menstrual day. Detailed medical history like diabetes mellitus, hypertension, tuberculosis, asthma, bleeding disorders, drug intake were taken. Family history too was assessed. Later detailed general physical examination of patients were carried out along with abdominal examination to exclude any palpable mass arising from pelvis or organomegaly. Local examination of external genitalia and in cases where required per vaginal and per rectal examination were carried out. Investigations like CBC, Blood group and Rh typing, bleeding and clotting time, random blood sugar, Ultrasonography of abdomen and pelvis were done. If needed LH: FSH ratio and thyroid assay was done. Our study consisted of 52 adolescent patients who presented with menorrhagia over 2 years period.

RESULTS

Table 1: Age distribution			
Age(years)	No of patients	Percent (%)	
11-13	12	23.07	
14-16	15	28.8	
17-19	25	48.07	
Total	52	100	

It was found out that around 48.07% (25 patients) were in late adolescent period that is between 17-19 years.

Table 2: Relation to menarche				
Duration since menarche No of patients Percentage (%				
6 months	6	11.53		
>6m-1 year	11	21.15		
>1-2 years	1	1.92		
>2 years	34	65.38		

In this study 65% patients (34) presented with menorrhagia 2 years after onset of menarche.

Table 3: Socioeconomic status of patient

Socioeconomic Status	No Of Patients	Percentage (%)
Upper	48	92.43
Upper Middle	4	7.57
Lower Middle	-	-
Upper Lower	-	-
Lower	-	-
Total	52	100

92.43% (48) of the adoloscents in our study belonged to upper class family.

Table 4: Educational Status of Patients			
Education Of Patient	Patient	%	
Illiterate	-	-	
Primary Schooling	-	-	
Secondary Schooling	25	48.07	
Puc	10	19.23	
Professional College	17	32.69	
Total	52	100	

All the 52 adoloscents were literate that is at least had secondary schooling education.

Table 5: Education status of father			
Patient	Father	%	
Illiterate	00	00	
Primary schooling	9	17.30	
Secondary schooling	13	25.00	
Puc	4	7.69	
Degree	26	50	
Total	52	100	

50% of father's of these girls had degree that is were graduate, so good literacy may have created good awareness of menorrhagia. Same was true about mothers so it indicates good literacy of parents may make them more aware of problems and good reporting to hospitals.

Table 6: Body mass index of patients			
BMI No Of Patients Percentag			
<18.5	5	9.61	
18.5-25	46	88.46	
>25	1	1.92	
Total	52	100	

Majority that is 88.46% (46 patients) were having normal BMI.

Table 7: Menstural Pattern				
Menstural Pattern No of Subjects Percentage (%)				
Menometrorrhagia 4 7.69				
Polymenorrhagia 5 9.61				

In our study all patients had menorrhagia among with either polymenorrhagia (9.61%) and menometrorrhagia (7.69%).

Table 8: Duration of symptoms

Duration	No of Patients	Percentage (%)
Lees Than 3 Months	6	11.53
>3months To 6 Months	13	25.00
>6mnths To 1 Year	8	15.38
More Than 1 Year	25	48.07
Total	52	100

In our study 48% (25 patients) had symptoms for more than 1 year.

Table 9: Duration of symptoms with haemoglobin levels				
Duration	<7mg/dl	7-9mg/dl	>9mg/dl	
<3months	1	3	8	
>3-6months	0	5	1	
>6-1 Year	1	1	8	
>1 Year	2	11	11	
Total	4	20	28	

In our study it was found that duration of symptoms with haemoglobin levels showed mild to moderate anaemia in patients whose duration was 1 year.

Table 10: Age realtion with pcos and dub				
Diagnosis 11-13yrs 14-16yrs 17-19yrs Tota				Total
Pcos	0	3	7	10
Dub	12	12	28	42
Total	12	15	35	52

In our study early adolescence shows predominance of primary DUB.PCOS accounted for one fifth of late adolescence.

Table 11: Ultrasonography				
USG	No Of Patients	Percentage (%)		
Normal Findings	35	67.30		
Polycystic Ovarian Disease	10	19.23		
Fibroid	3	5.76		
Endometrial Hyperplasia	12	23.07		
Functional Cyst Of Ovary	1	1.92		

67% of patients (35) had normal findings on abdominal ultrasonography. Increased endometrial thickness was seen in 23% (12) and PCOS 19.23% (10).

Table 12: Diagnosis				
Diagnosis	No of Patients	Percentage		
Primary Dub	32	61.53		
Secondary Dub 1) PCOD	10	19.23		
2)Fibroid	3	5.76		
3)Hypothyroidism	7	13.46		

Majority (61.53%) of patients in our study were diagnosed as primary DUB and second (19.23%) as PCOS

Table 13: Modalities of management		
Modalities	No Of Patients	Percentage (%)
Non Hormonal	16	30.76
Hormonal Treatment		
1) Progestrone	3	5.76
2)OC Pills	33	63.46
1 (0.000)		

In our study 69.23% were treated with hormonal preparation. Drosperinone was preferred progesterone.

DISCUSSION

Adolescence has been defined by WHO as period between 11-19 years. It is the span of human growth extending from immaturity of childhood to physical and psychological maturity of adulthood. Our study showed an incidence of 9.1% of puberty menorrhagia among 570 adolescent during the study period. In a similar study conducted in 2008 by Roy Chowdhury JC the incidence was 9.6%. Similarly Dr Ummo Nusrat Zahan in 2014 shared on incidence of 9.6% among 312 adolescents who were studied. In our study of 52 adolescents 28-80% belonged to middle adolescence group and 48.07% to late adolescent group.So maximum number of patients were noted in mid and late adolescence. This is similar to study conducted by Khosla et al (2010) where 55% belonged to mid and late adolescence. Shikha Joshi et al (2012) had study conducted where 92% of study population were in mid and late adolescence. Socioeconomic status of 52 patients was analyzed in our study where 92% belong to upper class. But in studies conducted by Sanjav Rao⁴ in 2004 majority belonged to lower socioeconomic status. Similarly in Koranne PS (2014) study majority were of lower socioeconomic group. This indicates that poverty status of patients, personal hygiene and general health. May be adolescents who came to our centre were of upper class. In our study where we analysed literacy rate of parents 96% of mothers and of fathers were literate. Erica E. Marsh et al (2014)⁵ stated that Institute of Medicine defines health literacy as "the degree to which individuals have capacity to obtain, process and understand basic health related decisions". Kiranmai G. et $al (2014)^6$ in her study quoted 46% as illiteracy rate. In our study as majority of patients belonged to upper socioeconomic status and all were from literate families indicating maybe awareness of menstrual pattern and seeking medical care early. In our study all the patients came to the OPD with the complaints of menorrhagia and had menometrorrhagia and 9.61% 7.65% had polymenorrhagia. This is similar to a study by Kazi SB et al (2014) where 50% presented with menorrhagia. In our study majority ie 48.07% had menorrhagia for more than

1 year and out of 52 patients 48% having menorrhagia for more than 1 year, only 7.7% have haemoglobin <7gm%. This is similar to study by Khosla et al (2010) where 44% of the patients had menorrhagia for more than one year. Saina Gillani et al (2012) also showed in their study that 58% of study population had menorrhagia for more than one year. In our study of 52 patients they presented with durations ranging from menarche 32% had menorrhagia within 1 year of attaining menarche while 65% had menorrhagia after 2 years of attaining menarche. In study by Khosla et al (2010) showed that in 44% of patients duration from menarche was more than one year. Ultrasonography which was subjected in all patients showed 67% having normal findings, 23% had endometrial hyperplasia. 19.2% had PCOD and 6% had fibroid uterus. Similar findings showing PCOD as cause of puberty menorrhagia was shown in Saima Gillani et al (2012) study with 8.6%, Shikha Joshi et al (2012) with 14% and Kazi *et al*⁷ (2014) with 10%. Fibroid as cause was shown in 2.8% of patients in study by Saima Gillani et al (2012). In our study etiology of menorrhagia was DUB in 61.5%, PCOD in 19% and 13% with hypothyroidism and 6% with fibroid. Actiology in study by Sanjay Rao et al (2004) showed DUB in 80%, PCOD in 2.8%, hypothyroidism in 5.7%, ITP in 5.7% cases. In study by Roy Chaudhary et al (2008) DUB was in 61% of cases, hypothyroidism in 9.3%, PCOD in 3% and fibroid in 3% of cases. As our study had limited number of patients we did not come across bleeding diathesis. In our study early adolescence shows predominance of primary DUB and PCOD accounting for one fifth of late adolescence. The aim of treatment in these adolescent patients is to regulate mensturation. The main stay treatment are hormones. Hormones used are oral contraceptives in 63.4% patients and progesterone in 5.7% specific therapy was thyroxine in 13.46% and blood transfusion in 7.69%. In study by Roy Chaudhary et al (2005) 44.61% had non hormonal and 26.15% had hormonal therapy. In our study all patients responded to hormonal, may be because majority had symptoms for more than one year. Hormone therapy remains the most effective treatment for puberty menorrhagia.

SUMMARY AND CONCLUSION

The incidence of puberty menorrhagia in our study was 9.1%. Majority of patients had menorrhagia for more than one year as there is wide presence of menorrhagia. 48% of this study group presented with menorrhgia in late adolescence period i.e. 11-19 years, 28% presented in middle adolescence. Majority of them were of upper socioeconomic class both were not approaching for medical care, mainly due to lack of awareness, may be education may help to create awareness.

Majority i.e. 61.5% who had menorrhagia in our study population had primary DUB due to immaturity of hypothalamo-pitutary ovarian axis. Other causes were hypothyroidism and polycystic ovarian disease. Ultrasonography revealed normal findings in 67% cases and 23% had endometrial hyperplasia which is significant. 19% and 5.8% had PCOS and fibroids respectively. Around 63.4% responded to combined oral contraceptives and 5.75% to progesterone alone. Reassurance, counseling, correction of anaemia and improving nutritional status are very important management tools in puberty menorrhagia. After symptomatic treatment hormonal therapy is most effective treatment.

REFERENCES

- Kishan Prasad H. L. ET et al," Adolescent Menorrhagia: Study of the coagulation profile in terrtiay centre in south India"Journal of clinical and diagnostic research. 2011 December, Vol-5(8):1589-1592.
- Saima Gillani, Syed Mohammad et al, "Puberty menorrhagia: causes and management "J.Med. SCI.(Peshwar, print) Januwary2012,Vol.20,No.1:15-18
- Gary N. Frishman, MD et al, "Evaluation and treatment of menorrhagia in an adolescent population, "Journal of Minimally Invasive Gynaecology, Vol 15, No6, November/December2008 pg682-688
- Rao S, Pawar V, Badhwar VR, Fonseca MN; Medical interventions in puberty menorrhagia Bombay Hospital Journal,2004.Avaible from http://www.bhj.org.in/journal/2004
- Erica E. Marsh et al, "Prevalance and knowdge of heavy menstrual bleeding among African American women "Int J Gynaecol Obstet. 2014 April; 125(1):
- Dr. KiranmaiGottapu et al, "A Study of Demographic Profile and Evaluation of Menorrhagia" Medical Scienxe Volume: 4 / Issue : 1 / Jan 2014 / ISSN - 2249 – 555X
- 7. Kazi SB et al, "Clinical evaluation of puberty menorrhagia A study of fifty cases" 74:1063-70

Source of Support: None Declared Conflict of Interest: None Declared