Scholars Journal of Applied Medical Sciences (SJAMS) **ISSN 2320-6691 (Online)**
Sch. J. App. Med. Sci., 2016; 4(6F):2307-2311 **ISSN 2347-954X (Print)**

(An International Publisher for Academic and Scientific Resources)
www.saspublishers.com DOI: 10.36347/sjams.2016.v04i06.091

Original Research Article

Evaluation of Menorrhagia in Adolescent Girls: A Clinical Study

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Abstract: The objective of present study is to evaluatethe menorrhagia among unmarried adolescent girls attending the outpatient department of Gauhati Medical College, Guwahati.A total of 111 girls of 10—19yrs, (pregnancy excluded) attending gynae OPD,with menstrual disorders were studied with detailed history and physical examination. Investigations like haemogram, coagulogram profile, hormonal assays, sonography, etc. were done as and when required.Menorrhagia was the commonest menstrual disorder 37/111 (33.33%) followed by oligomenorrhoea 23/111 (20.72%), dysmenorrhoea 22/111 (19.82%), metrorrhagia 19/111 (17.11%), amenorrhoea 8/111(5.52%), Polymenorrhoea 2/111 (1.80%). The commonest pattern of bleeding in the menorrhagic adolescents was regular menorrhagia(51.35%) followed by Menometrorhagia (29.73%),Polymenorrhagia(10.81%) and metropathic type (8.11%).Majority of the adolescents with menorrhagia had their menarche between 12 to 14 years (70.27%) . 27.03% cases started menorrhagia within 6 months of menarche; while 37.84% within 2 yrs and 91.89% within 3 yrs of menarche. Almost 80% of the patients had haemoglobin level below 9gm% while in 37.84% had 6 gm% or below 6gm%. Dysfunctional uterine bleeding was the most frequent cause (67.57%) as expected followed by PCOS (13.51%), Hypothyroidism (10.81%), uterine fibroid (5.4%) and idiopathic thrombocytopenic purpura (2.7%). Menorrhagia is the commonest menstrual disorder of adolescents. Adolescent girls suffer from various degree of menorrhagia which should never be over looked. By setting up specialized adolescent clinic, we can give greater momentum to adolescent gynaecology.
Keywords:adolescence, gynaecological problems, menstrual disorders

INTRODUCTION

Adolescent is a transitional period from childhood to adulthood. In this period there is growth spurt physically and also hormonal, emotional changes occur. WHO defines adolescents as individuals in the age group of 10-19years? Adolescents belonging to this age group constitute almost one fifth of the world's total population [1]. Adolescent health is getting more importance in the present years.

Besides physical growth, the most important phenomenon occurring in girls during adolescent period is menstruation. First menstruation is called menarche. Menstrual cylcle, duration and amount of bleeding is variable during this period. Adolescent girls attending a doctor in most cases are due to menstrual disorders. Common menstrual disorders in adolescents included menorrhagia, metrorrhagia, oligomenorrhoea, amenorrhoea and dysmenorrhoea. Out of these menorrhagia is the commonest[2]. The main cause of menorrhagia is due to anovulation because of delay or inadequate maturation of hypothalamic pituitary ovarian axis. So it is a dysfunctional bleeding. Other causes may be bleeding disorder, thyroid dysfunction, psychological factor, pregnancy complication and other pelvic pathology like genital tuberculosis, pelvic inflammation, tumour etc.

Dysmenorrhoea and menorrhagia may impair schooling and performance in adolescents. It may be both primary and secondary. Periods of oligomenorrhoea to amenorrhea lasting for 2-12 months during first 1-2 years after menarche are common. It may occur in 20% girls without subsequent ill effect [3].

METHODS AND MATERIALS:

The present study was carried out in the department of Obstetrics and Gynaecology Gauhati Medical College for a period of 1 year from June 2014

to May 2015. The adolescents attending the gynaecology outdoor with menstrual disorders were taken for study. Age group of the patients included from 10-19 years, pregnancy and its associated complications were excluded from the study.

A detailed history, examination and required laboratory investigations were done in the cases presenting with menstrual disorders.Since quantitative estimation of menstrual blood loss is difficult to find out, cases using more than three well soaked pads or diapers per day and history of passage of blood clots within 7 days of flow or prolongation of flow beyond 7 days with or without excessive flow were considered as cases of menorrhagia.

Haemoglobin estimation was done to find out degree of anaemia to classify menorrhagia as follows:

a. Mild menorrhagia Hb < 9g/dl
b. Moderate menorrhagia Hb 6.1 -9 g/dl
c. Severe menorrhagia Hb ≤6 g/dl

Gynaecological examination included per abdominal, pelvic examination (inspection and in some cases speculum and per vaginal examination). Investigations done were blood grouping and Rh typing, Hb estimation, RBS, complete hemogram, complete coagulation profile when indicated, hormonal assay mainly FT3, FT4,TSH and also pelvic sonography and other radiological investigations when required.

RESULTS AND OBSERVATIONS

111 cases of adolescents attending Gynaecological outdoor of Gauhati Medical College were studied who presented with different menstrual disorders. Menorrhagia(Table-1) was seen in 37cases(33.33%) followed by oligomenorrhoea 23/111 (20.72%) , dysmenorrhoea 22/111 (19.82%), metrorrhagia 19/111 (17.11%) ,amenorrhoea 8/111(5.52%) ,Polymenorrhoea 2/111 (1.80%) . The commonest pattern of bleeding in the menorrhagic adolescents (Table-2) was regular menorrhagia, 19/37 (51.35%). Menometrorhagia was the second most common type, 11/37 (29.73%). Polymenorrhagia (4/37) and metropathic type (3/37) constitute 10.81% and 8.11% respectively. Majority of the adolescents with menorrhagia (Table-3) had their menarche between 12 to 14 years (70.27%) ,the median age of menarche was 13 yrs and mean is 12.9 yrs. 27.03% cases (Table-4) started menorrhagia within 6 months of menarche; while 37.84% within 2 yrs of menarche and 91.89% within 3 yrs of menarche. Almost 80% of the patients (Table-5) had haemoglobin level below 9gm% while in 37.84%, haemoglobin level was 6 gm% or below 6gm%. Regarding the cause of adolescent menorrhagia (Table-6), dysfunctional uterine bleeding was the most frequent (67.57%) as expected. PCOS (13.51%), Hypothyroidism (10.81%), were found to be the other causes of menorrhagia. A significant number of adolescents with menorrhagia may have underlying coagulation disorders, which Necessities a complete haematological evaluation before a diagnosis of DUB is made. In the present study there was 1 case (2.7%) of idiopathic thrombocytopenic purpura. Although uterine myomas are very rare in adolescence, 2 cases of small intramural fibroid presenting with menorrhagia was detected by ultrasonography. Out of 37 cases, (Table-7) 17 had (45.95%) duration of flow between 8- 15 days, while 15 cases (40.54%) had bleeding upto 7 days and 5 had (13.51%) for more than 15 days. The highest incidence of menorrhagia was found in the eldest daughter (Table-8) in the families (43.24%).

Table 1: Incidence of different types of menstrual disorders

Type of menstrual disorders	No of cases (N=111)	Percentage
Menorrhagia	37	33.33%
Oligomenorrhoea	23	20.72%
Dysmenorrhoea	22	19.82%
Metrorrhagia	19	17.11%
Amenorrhoea	8	7.21%
Polymenorrhoea	2	1.80%

Table 2: Showing the type of bleeding patterns among the cases of menorrhagia

Type of bleeding pattern	No of cases (N=37)	Percentage
1.Menorrhagia(according to actual definition)	19	51.35%
2.Menometrorrhagia	11	29.73%
3.Metropathia	3	08.11%
4.Polymenorrhagia	4	10.81%

Table 3: Age incidence of menarche with menorrhagia

Age (in yrs)	No of cases(N=37)	Percentage
10	1	2.70%
11	4	10.8%
12	8	21.62%
13	12	32.43%
14	6	16.22%
15	3	8.11%
16	3	8.11%

Table 4: Showing interval between menarche and onset of excessive bleeding in the menorrhagia group

Interval	**No of cases**	**Percentage**
Within 6 months	10	27.03%
7 months to 2 year	4	10.81%
2 years	15	40.54%
3 years	5	13.51%
4 years	2	5.41%
5 years	1	2.70%

Table 5: Showing distribution of cases according to severity of menorrhagia

	Hb 6gm% or <6gm%(severe)	**Hb between 6.1-9gm%(moderate)**	**Hb >9gm%(mild)**
No. Of cases	14	15	8
Percentage	37.84%	40.54%	21.62%

Table 6: Showing the incidence of aetiopathological factors of menorrhagia

Aetiology	**No of cases (N=37)**	**Percentage**
DUB	25	67.57%
PCOS	5	13.51%
Hypothyroidism	4	10.81%
Fibroid	2	5.41%
I.T.P	1	2.70%

Table 7: Showing the duration of flow

Duration	**No of cases(N=37)**	**Percentage**
Upto 7 days	15	40.54%
8—15 days	17	45.95%
More than 15 days	5	13.51%

Table 8: Sibling order of adolescent patients with menorrhagia

Sibling order	No of cases(N=37)	Percentage
Only child	1	2.7%
Only girl	5	13.51%
Eldest daughter	16	43.24%
Youngest daughter	12	32.43%
Others	3	8.11%

DISCUSSION:

Present study shows that menorrhagia is the commonest menstrual disorder (33.33%) followed by oligomenorrhoea, dysmenorrhoea, metrorrhagia, amenorrhoea (both primary and secondary) and Polymenorrhoea. Out of 111 cases of menstrual disorders, 37 cases (33.33%) had menorrhagia .Revel-Vilk *et al.;* [4] found that the prevalence of menorrhagia was 36%.The study was carried out between February and April 2008 in 705 adolescent girls in the Jerusalem district.Similarly, using a bleeding questionnaire, heavy menstruation was reported in 37% of high school students in Sweden [5]. In contrast, studies from

Nigeria and Hong Kong found menorrhagia in 12 -17% of adolescents [6].

Detection of menorrhagia in adolescents is important. Several studies have shown that menorrhagia has an effect on adolescent's quality of life (QoL), Daily school activities, and peer relationships [7]. The bleeding pattern in adolescent girls does not always conform to the actual definition of menorrhagia. The menstrual cycle during the adolescence are often irregular, also cycle occurred either very frequently or at prolonged intervals. As such, the cases presenting with excessive bleeding along with this kind of cycle pattern are considered as adolescent menorrhagia in this study. Bleeding patterns among the cases of menorrhagia are shown in the table 2. In the present series, the commonest pattern of bleeding was excessive bleeding occurring at regular intervals (51.35%).Irregular and excessive type was the second common (29.73%). Metropathic type of bleeding of bleeding occurred in 8.11% and Polymenorrhagia in 10.81% cases. Mukherji and Roy Chowdhury [8] in their study found completely irregular type of bleeding to be the commonest (35.7%) followed by the metropathic type (24.3%) ,regular menorrhagia (22.7%) ,and Polymenorrhagia (17.1%).

In the present study, 27.03% of the cases of menorrhagia started their symptoms within 6 month of menarche, 37.83% within 2 years and 62.16% after 2 years of their menarche. Southam and Rechart [9] in their series of 291 adolescents,found that 103 patients (33.4%) started symptoms with menarche. They observed that 40% of the cases had recovered in the first two years and 30% of the cases had continuing abnormality after 10 years. Mukherji and Roy Chowdhury[8] in their series of 70 cases of puberty menorrhagia found that 35.7% started menorrhagia with menarche,while 77.1% had their onset of menorrhagia within 2 years of menarche.

The median age of menarche in the present series of adolescent girls with menorrhagia was 13 yrs. From the present study,it was noted that almost 80% of cases,presenting with menorrhagia had haemoglobin level below 9gm/dl(Table-5).

In the present series, majority of the cases with menorrhagia were found to have DUB (Table-6). DUB is not only restricted to adult population but is more common in adolescents [10]. In as many as 95%, abnormal vaginal bleeding is caused by DUB [11]. It reflects a disturbance in the critical sequential hypothalamic pituitary ovarian interactions that are essential for induction of ovulation, normal corpus luteum function and normal endometrial growth and development. In the present study, 67.57% 0f adolescents (25 cases) presenting with menorrhagia (including regular menorrhagia,menometrorrhagia,metropathia) have DUB.

PCOS was the second cause (13.51%) of menorrhagia. Thuogh polycystic ovarian syndrome generally cause Oligomenorrhoea and Amenorrhoea, it may cause menorrhagia. In the present study , 15 cases (13.51%) had PCOS out of 111 cases of menstrual disorders. 5 cases presented with menorrhagia,5 cases presented with Oligomenorrhoea ,4 cases presented with secondary amenorrhea and 1 cases presented with acne/hirsutism. Goswami Sebanti *et al.;*[12] found 10 cases (13.89%) of polycystic ovarian disease in their study in 72 adolescent girls with menstrual disorders.

Hypothyroidism was the third common cause of menorrhagia (10.81%) in the present study.Out of 111 cases of menstrual disorders, 8 cases were found to have hypothyroidism presenting with menstrual disorders (7.2%). 4 cases presented as menorrhagia and 4 cases presented as Oligomenorrhoea. Other causes found were fibroid (5.41%) and idiopathic thrombocytopenic purpura (2.70%).

Highest incidence of menorrhagia (43.24%) was found in eldest daughter.Out of 37 cases of menorrhagia, 17 cases (45.95%) had duration of flow between 8-15 days, while 15 cases (40.54%) had bleeding upto 7 days and 5 had (13.51%) bleeding for more than 15 days. Most of the patients with longer duration of flow had symptoms of anaemia.

CONCLUSION:

In recent years, all over the world, attention to gynaecological disorders during adolescence is getting momentum. Menorrhagia in adolescence is quite a different medical problem as compared to menorrhagia in adult women. It differs both in diagnostic and therapeutic management.The significant differences in aetiological factors also make it a distinct clinical entity.The problem in normal initiation of menarche, haematological problems and general endocrine problems are unique in this age group. Extreme alarming and persistent form of bleeding during adolescence is mostly seen often in case of only child with over anxious parents. Sometimes a normal menstrual bleeding may be claimed to be excessive.

Prompt and adequate attention is to be given while handling a case of adolescent with gynaecological disorders. Diagnosis and management of menstrual abnormalities or menorrhagia in adolescent girls is quite difficult, not just from the physical nature of the problems, but also from the associated emotional and psychological factors. The adolescent's girls are very shy and often hesitate to disclose their problems. They may be fearful that they are abnormal compared to their peers, so they may be hesitant to confide and to seek advice. Therefore, they should be dealt sympathetically

and with gentleness while counselling. To address their divergent problems, establishment of separate adolescent gynaecological clinic will be the most encouraging. The aim of such service should be to provide an environment which is friendly and homely.

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