

Etiology and management of pubertymenorrhagia in adolescent girls

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Abstract

Introduction: Puberty menorrhagia is a real trouble among adolescent girls mostly due to problem in hypothalamic-pituitary-ovarian axis. **Aims and objectives:** To understand the various causative factors in puberty menorrhagia and to evaluate the role of hormones estrogens, progesterones or combination of both in controlling the excessive menstrual bleeding. **Materials and methods:** It is a study conducted in the Department of Obstetrics and Gynaecology at MKCG medical college, Berhampur, Odisha from Oct 2012 to Oct 2014. Study included a total of 112 adolescent girls presenting with complains of menorrhagia. Assessment of each case with thorough history, physical examination and laboratory investigations was done. **Results:** About 78.2% patients had menorrhagia due to immaturity of hypothalamic-pituitary-ovarian axis, 7.1% patients had bleeding diathesis, 5.3% had polycystic ovarian disease and 5.3% had hypothyroidism. Other rare causes were genital TB (1.8%), Leukemia (0.9%), polyp (0.9%). 3(2.6%) patients needed surgical intervention in the form of DandC and polypectomy. Hormonal management were given in 104(92.9%) and only non-hormonal management were given in 8(7.1%) of cases. **Conclusion:** Most abnormal bleeding in adolescent is caused by immaturity of hypothalamo-pituitary-ovarian axis resulting in anovulation. Majority of the patients showed good response to combined oral contraceptive pills.

Keywords: Puberty menorrhagia, Bleeding disorders, Dysfunctional uterine bleeding, Hormonal therapy.

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INTRODUCTION

Puberty is defined as the period during which secondary sex characters begins to develop and the capability of sexual reproduction is attained. Puberty menorrhagia is a very common gynecological problem in adolescence.^{1,2} Puberty menorrhagia in adolescent age group is almost always caused by anovulatory cycles due to immaturity of hypothalamic-pituitary-ovarian axis. Puberty menorrhagia is defined as excessive bleeding more than 80 ml and duration > 8 days between menarche and 19 years. DUB in adolescent group can be viewed

with optimism. Diagnosis of DUB is by exclusion. Majority (50%) of patients will return to regular menstrual pattern by 3-4 years after menarche.

MATERIALS AND METHODS

The present study entitled “Etiology and Management of Puberty Menorrhagia in Adolescent Girls” is an institution based prospective and analytical study, over a period of 2 years from October 2012 to October 2014. This study was conducted in the department of obstetrics and gynaecology MKCG medical college and hospital, Berhampur, Odisha with a catchment area extending over the whole of Ganjam district and a few areas other neighbouring districts of south Odisha. This non randomised longitudinal study was conducted on adolescent girls, attending to OandG department during the study period. Adolescent girls in the age group of 10-19 years (as defined by WHO, 1999) were included in study group.

STUDY DESIGN

This study was conducted by thorough evaluation of menstrual problem in adolescent girls, by proper history

taking, physical examination, laboratory investigations, certain pre-form questionnaire were analysed and importance was given to proper counselling measures.

INCLUSION CRITERIA

All adolescent girls attending the OandG department for the complaint of menorrhagia.

EXCLUSION CRITERIA

1. All married adolescent girls attending OandG department for complaints of menorrhagia.
2. Girls above 19 years with menorrhagia.
3. Parents or patient not giving consent for the study.

OBSERVATIONS AND RESULTS

The study entitled “Etiology and management of puberty menorrhagia in adolescent girls” was carried out in the department of OandG, MKCG medical college and hospital, Berhampur during the period of Oct 2012 to Oct 2014. The patients included were those attending outpatient department and those who were admitted in emergency condition to the labour room.

Table 1: Age of menarche

Age group(years)	No of patients	Percentage
<12	10	8.9
12-13	54	48.2
13-14	46	41.1
>14	2	1.8
Total	112	100

Table-1 depicts age of menarche in adolescent girls in our study. Maximum no of adolescent girls 54 (48.2%) had onset of menarche in 12-13 age, 46 adolescent girls (41.1%) had onset of menarche in 13-14 age, Only 2 adolescent girls (1.8%) had onset of menarche after 14 years.

Table 2: Socio economic status

S-E Status	No of patients	Percentage
Low	72	64
Middle	35	30.8
High	5	5.2
Total	112	100

Table-2 depicts socio economic status of adolescent girls. As is evident maximum patients 72(64%) belonged to low socio economic status, 35 patients (30.8%) were from middle socio economic status. Only 5 patients (5.2%) were from high socioeconomic status.

Table 3: Duration of symptoms

Duration	No of patients	Percentage
< 6 months	65	58
6 months - 1 year	28	25
>1 year	19	17
Total	112	100

Table-3 reveals duration of symptoms in adolescent girls. Maximum adolescent girls 65(58%) had duration of symptoms <6 months, 28(25%) girls had duration of 6 months-1 year and only 19(17%) girls had of symptoms more than 1 year.

Table 4: Distribution of Anemia

Degree of anemia Hb in gm%	No of cases	Percentage
No anemia (Hb≥11)	18	16
Mild(10-10.9)	37	33.0
Moderate(7-10)	51	45.5
Severe(<7)	4	3.6
Very severe(<4)	2	1.9
Total	112	100

Table-4 outline the haemoglobin profile of the patients. Normal Hb level found in 18(16%) of patients, rest of patients were having anemia of various degrees. Maximum adolescent girls 51(45.5%) were having moderate anemia, mild anemia were found in 37(33%), 4 adolescent girls (3.6%) had severe anemia, very severe anemia was present in 2 (1.9%) adolescent girls.

Table 5: Etiology of puberty menorrhagia

Etiology	No of patients	Percentage
Anovulation	88	78.7
Bleeding diathesis*	8	7.1
Hypothyroidism	6	5.3
PCOD	6	5.3
Genital TB	2	1.8
Leukemia	1	0.9
Polyp	1	0.9
Drugs	0	0
Total	112	100

(*ITP- 4 + SCD in crisis- 4)

From Table-5 it is expressed that majority of adolescent girls 88(78.7%) were diagnosed to have anovulatory cycles, 8(7.1%) girls were having bleeding diathesis, 6(5.3%) girls diagnosed to have hypothyroid, PCOD was found in 6(5.3%) girls, 2(1.8%) girls diagnosed to have genital TB, Only 1(0.9%) girl found to have leukemia. Endometrial polyp was a cause of bleeding in 1 (0.9%) girl.

Table 6: Treatment modalities

Management	No of patients	Percentage
Only Non-Hormonal	8	7.1
Hormonal	104	92.9
Surgical	3	2.6

Table-6 express various treatment modalities given to the adolescent girls. Majority of adolescents 104(92.9%) were treated with hormones, only non-hormonal management were done in 8(7.1%) girls, 3(2.6%) girls required surgical intervention.

Table 7: Hormonal treatment

Hormone	No of patients	Percentage
COC	52	50
Progesterone	4	3.8
Progesterone + OCP	48	46.2
Total	104	100

(Rest 8 patients managed by oral iron, anti-fibrinolytics and reassurance)

Out of 112 adolescent girls 52(50%)patient responded to combined oral contraceptives,4(3.8%)patients responded to progesterone only,48(46.2%)patients were treated initially with progesterone to control bleeding and was followed by COC for 3-6 cycles (Table- 7).

Table 8: Other modes of management along with hormone

Drugs	No of patients	Percentage
Haematinics	55	52.8
Haematinics +ethamsylate	8	7.6
Haematinics +metformin	6	5.7
Haematinics +tranexamic acid	24	23
Haematinics + anti Koch therapy	1	0.9
Haematinics +thyroxin	6	5.7
Haematinics +prednisolone	4	4.3
Total	104	100

Along with hormone,only haematinics were given to 55(52.8%) adolescent girls,Haematinics and ethamsylate were given 8(7.8%) adolescent girls Haematinics and metformin were given 6(5.7%) adolescent girls,Haematinics and tranexamic acid were given in24(23%) adolescent girls,Hematinics and anti-Koch therapy were given in 1(0.9%)adolescent girl,Hematinicsand thyroxin were given 6(5.7%) adolescent girls,Hematinicsandprednisolone were given in 4(4.3%) adolescent girls (Table 8).

Table-9: Surgical management

Procedure	No of patients	Percentage
Polypectomy	1	0.9
DandC	2	1.8

Table- 9 shows the surgical intervention done in our study. DandC was done in 2(1.8%) cases of severe menorrhagia, and polypectomy was done in 1(0.8%) adolescent girl.

DISCUSSION

Adolescence has been defined by the world health organization as the period between 10-19 years and forms a substantial component of World’s population (10-20%)³. Total pubertal developments takes place around this period. Sometimes puberty and adolescence are the words used interchangeably. In our present study adolescent girls in the age group 10-19 years were included as accepted by WHO. Menorrhagia in adolescent girls were considered as the study subject because menarche is the hallmark event in girls life and menorrhagia due to immaturity of

hypothalamic-pituitary-ovarian axis are more common in post menarcheal age. The mean age of menarche in the present study was 12.6 year. Maximum girls (48.2%) had menarche between 12-13 years of age. Our mean age of menarche was similar to few other studies. Padhy S, Karki C andPadhys SB (2003)⁴- More than 50% women had their menarche at the age of 12-13 year. Padubidri VG and Daftary SN (2004)⁵- The menstruation begins when the bone age is 13-14 years, and it is unusual for the menstruation to occur before bone age of 12.5 years and after 14.5 years of age. The socio economic status of the 112 patients were analysed in this study. The study revealed that 72 patients (64%) belonged to lower class family and 35 patients (30.8%) were from middle class family. 5 patients (5.2%) belonged to higher socio economic status, This was because girls in low socio economic status group usually neglected and deprived of proper nutrition, education as well as check-up. Low socio economic status affects menstruation indirectly by leading to under nutrition, lack of education and unhealthy living condition. In our study of 112 patients who had varying pattern of menstruation, the duration of symptoms also varied. 65 patients (58%) had menorrhagia for more than 1 year, 28 patients (25%) had menorrhagia from 6 months to one year and 19 patients (17%) had menorrhagia for less than 6 months. Saima Gillani *et al* 2012⁶ found 57.14% patients had menorrhagia more than 1 year, 31.42% had 6 months-1 year, 11.42% had menorrhagia < 6 months, the results were almost similar to our study. In our study, hemoglobin percentage at the time of first visit showed that majority (84.2%) of our adolescent were anemic when cut off values of Hb<11gm%, out of 112 patients most were having mild (33.5%) to moderate (45.2%) anemic. But a significant number of cases (4.5%) were having severe anemia, 1.5% cases having very severe anemia. From this study it was concluded that Hb percentage at the time of first visit showed that 94 out of 112 were having varied degree of anemia. This reflected the presence of pre-existing anemia which was aggravated by acute menstrual blood loss in excessive amount or prolonged period. Rawet *et al* (2001)⁷- in a study of adolescent girls in rural areas found the prevalence of anemia was 34.5%, the prevalence of mild, moderate and severe anemia was 19%, 14% and 1.4% respectively. Out of 112 adolescence, the aetiology of menorrhagia was found to be DUB in 88 patients (78.7%), Bleeding diathesis in 8 patient(7.1%), PCOD in 6 patients (5.3%) and 6 patients(5.3%) had hypothyroidism,Genital TB in 2 patient(1.8%), leukaemia in 1 patient(0.9%), Endometrial polyp in 1 patient(0.9%). According to Claessens and Cowell⁸ in his study found that the etiology of menorrhagia as anovulatory DUB (75%), bleeding diathesis (19%) and 7% had other pathology. Our study

has almost similar result as that of Roychoudhury *et al* ⁹. Their study observed anovulation in 61.58%, hypothyroidism in 9.23%, haematological factors in 15.38%, PCOD in 3.07% genital TB in 1.53%. The aim of treatment in these 112 adolescence patient is to regulate the menstruation. The main stay of treatment for menstrual regulation is hormones. The hormones used in this study are combined oral contraceptive pills for 52 patients (50%) and only progesterone for 4 patients (3.84%) and progesterone for the immediate arrest of the bleeding followed with combined oral contraceptive pill for 3 months in 48 patients (46.1%). Rest 8 patients (7.6%) were treated with only iron anti fibrinolytics and reassurance. Other drugs were also given for these 104 patients along with hormones like, only haematinics for 51(49%) patients. Haematinics and ethamsylate for 8(7.6%) patients. Haematinics and metformin for 6(5.7%) patients. Haematinics and Tranexamic acid for 24(23.07%) patients. Haematinics and Thyroxine for 6(5.7%) patients. Haematinics and Anti Koch therapy for 1(0.9%) patients. Haematinics and prednisolone for 4 (7.6%) patient of ITP. Our study simulates that study conducted by Shikhajoshi *et al*,¹⁰ they used combined oral contraceptive pills in 44% patients, only progesterone in 14% patients, progesterone followed by COC were given in 42% patients; Specific treatment like metformin was given in 6% patients, thyroxin given in 4% patients, Tranexamic acid in 36% patients and only hematinics were given in 50% patients along with hormone. In the present study among the 112 adolescence patients, 104 patients received hormonal management for menstrual regularization. Surgical intervention was rarely indicated and was done in selected cases. DandC was done in 2 cases married women with severe menorrhagia not responding to hormonal therapy. One case was having endometrial thickness of 25 mm and HP study report came out as endometrial polyp. HP study of other case came as normal proliferative endometrial polypectomy was done in 1 case.

CONCLUSION

Puberty menorrhagia in adolescent is a separate and distinct entity. They present mostly menorrhagia, menorrhagia, menometrorrhagia, polymenorrhagia. Detailed history taking, thorough physical examination with special references to abnormal thyroid function, any underlying bleeding disorder and exclusion of any organic pathology can enable us to reach at a clinical diagnosis. Most of bleeding disorders in adolescence are functional and are frequently related to inappropriate peripheral and central feedback mechanism involved in regulation of menstruation.

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