ORIGINAL RESEARCH ARTICLE

Gynaecological problems of adolescent girls attending outpatient department at tertiary care centre with evaluation of cases of heavy menstrual bleeding requiring hospitalization

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ABSTRACT
Background: Adolescence is a transient and dynamic period between childhood and adulthood, characterised by several changes in the body and the child's mind. The World Health Organization defines adolescents as young people aged 10-19 years, but changes may begin before and continue after this age group. Adolescents constitute over 21.4% of population in India. Adolescence is a period of enormous physical and psychological change for young girls. Hormonal events play a key role in this transition. One of the major physiological changes that take place in adolescent girls is the onset of menarche, which is often associated with problems of irregular menstruation, excessive bleeding and dysmenorrhea. **Aims:** The aim of this study was to evaluate the different gynaecological problems in adolescent girls attending outpatient department. To evaluate the prevalence of severe anaemia requiring indoor admission in adolescent girls with heavy menstrual bleeding. **Methods:** The present study was a prospective

and analytic study conducted in the Dept of Gynae and Obstetrics, I.P.G.M.E.R & SSKM hospital, Kolkata, West Bengal, India. All adolescent girls with puberty menorrhagia who required indoor admission for management of moderate-to-severe anaemia in the study period were includedin the study. 100 patients were included in this study. **Results:** Our study showed that, most of the patients had 6 Months- 1year Menorrhagia [15 (15.0%)] and 1 Year Menorrhagia but this was not statistically significant (p.84148).(Z=0.2008) and we also found that, more number of patients had Normal HPLC [86 (86.0%)] which was statistically significant (p< .00001).(Z=10.1823). **Conclusions:** It was concluded that majority number of patients had PCOS which was statistically significant. Most of the patients had Blood Transfusion it was statistically significant. Adolescent health education and group discussion is needed to create awareness regarding adolescent gynecological problems; it should be conducted regularly in schools and colleges.

Keywords: Adolescence, Embarrassment and pathological changes, Nutritional deprivation,

INTRODUCTION

Adolescence is a period of enormous physical and psychological change in young girls. Many adolescents with menstrual disturbances never present to their family doctor or gynecologist. Embarrassment about discussing menstruation, fear of disease and ignorance about services available may lead to delayed presentation or consultation with doctor.

As per WHO, adolescence includes the age group of 10-19 years. Adolescents constitute over 21.4% of the population in India.[1] Adolescents have the lowest mortality among the different age groups and have therefore received low priority, Nutritional deprivation, increased demand of adolescents body, and excessive menstrual loss, all aggravate and exacerbate anemia and its effects. Menstrual disturbances are not uncommon and may add further disruption during this difficult phase for adolescents and their families.

Menarche is considered as the central event of female puberty. The psychosocial and emotional problems associated with menarche are of considerable magnitude. The menstrual cycle involves the coordination of many events by the hypothalamic-pituitary- Ovarian axis and is readily influenced by psychological and pathological changes occurring during one's lifespan. The age of menarche is determined by general health, genetic, socioeconomic, and nutritional factors.[2] The mean age of menarche is between 12 and 13 years.[3-5] Menstrual bleeding lasts 2-7 days in 80-90% of adolescent girls. Most Cycles still range from 24 to 38 days which, even in the first year after menarche, is normal. Changing 3-6 pads per day without soiling from oversaturated pads suggest a normal flow.[5]

Thus, consideration should be given to a gynecological evaluation is adolescent girls whose cycles are longer than the above interval and have more excessive flow than normal. All adolescents with severe heavy menstrual bleeding those who require hospitalization or have moderate to severe anemia (i.e hemoglobin level 7.0-9.9 g/dl, severe anemia if hemoglobin <7.0g/dl) should undergo evaluation for coagulopathy, von Willebrand disease (vWD) - a defect in platelet adhesion and deficiency of factor VIII- and thyroid disorder.[6]

Method and Materials:

The diagnosis of the condition requiring OPD consultation was noted. Menstrual history and general Examination were noted.

All adolescent girls with puberty menorrhagia who required indoor admission for management of moderate-to-severe anaemia in the study period were included in the study. Each patient's hospital record was analysed with regard to demographic profile, duration severity of symptoms, menstrual history, history of bleeding disorders, requirement of blood, blood component transfusion, response to therapy, and all investigations (including urine pregnancy test for exclusion of pregnancy, CBC, peripheral smear, blood grouping and typing, USG pelvis, thyroid profile, and coagulation profile, prolactin).

Statistical Analysis: For statistical analysis data were entered into a Microsoft excel spreadsheet and then analyzed by SPSS (version 27.0; SPSS Inc., Chicago, IL, USA) and Graph Pad Prism version 5. Data had been summarized as mean and standard deviation for numerical variables and count and percentages for categorical variables. Z-test (Standard Normal Deviate) was used to test the significant difference of proportions. Once a t value is determined, a p-value can be found using a table of values from Student's t- distribution. If the calculated p-value is below the threshold chosen for statistical significance (usually the 0.10, the 0.05, or 0.01 level), then the null hypothesis is rejected in favour of the alternative hypothesis. P-value ≤ 0.05 was considered for statistically significant

Ethical clearance: The study was conducted only after obtaining written approval from the Institutional Ethics Committee vide memo no IPGME&R/IEC/2021/574, dated 08.10.2021. Written informed consent was taken from every study patient.

Results

The present study was a prospective and analytic study conducted in the Dept of Gynae and Obstetrics, I.P.G.M.E.R & SSKM hospital, Kolkata, West Bengal, India. The study was conducted after ethical clearance. All adolescent girls with puberty menorrhagia who required indoor admission for management of moderate-to-severe anaemia in the study period were included in the study. 100 patients were included in this study. In all the cases, thorough history taking and clinical examination was done after taking proper consent. Data thus obtained was noted in the proforma. Results thus obtained were analysed and expressed in tables.

Table 1: Distribution of participants according to Age in years, duration of menarche and management.

Age In Years	Frequency	Percent
10-15	42	42.0%
16-19	58	58.0%
Total	100	100.0%

Duration Of Menarche	14	14.0%
< 6 Months	14	14.0%
2 Years	14	14.0%
3 Years	14	14.0%
4 Years	15	15.0%
5 Years	29	29.0%
7 Years	100	100.0%
Total	14	14.0%
Management		
Blood Transfusion	86	86.0%
Progesterone +Tranexamic Acid	14	14.0%
Total	100	100.0%

In the present study 42 (42.0%) patients were 10-15 years of age and 58 (58.0%) patients were 16-19 years of age. The value of z is 2.2627. The value of p is .02382. The result is significant at $p < .05$. In our study, 14 (14.0%) patients had < 6 Months Menarche, 14 (14.0%) patients had 2 Years Menarche, 14 (14.0%) patients had3 Years Menarche, 14 (14.0%) patients had 4 Years Menarche, 15 (15.0%) patients had5 Years Menarche and 29 (29.0%) patients had 7 Years. The value of z is 2.3898. The value of p is .01684. The result is significant at $p < .05$. In our study, 86 (86.0%) patients had Blood Transfusion and 14 (14.0%) patients had Progesterone +Tranexamic Acid. The value of z is 10.1823. The value of p is < .00001. The result is significant at $p < .05$. (Table 1)

Table 2 : Distribution of participants according to duration of menorrhagia, HPLC and USG findings.

Duration Of Menorrhagia	Frequency	Percent
1 Month	14	14.0%
1year	15	15.0%
2 Month	14	14.0%
3 Months	14	14.0%
4 Months	14	14.0%
6 Months - 1year	15	15.0%
Frist Episode	14	14.0%
Total	100	100.0%
HPLC		
Beta that	14	14.0%
Normal	86	86.0%

Total	100	100.0%
USG		
Normal	71	71.0%
PCOS	29	29.0%
Total	100	100.0%

In our study, 14 (14.0%) patients had 1 Month Menorrhagia, 15 (15.0%) patients had 1 Year Menorrhagia, 14 (14.0%) patients had 2 Month Menorrhagia, 14 (14.0%) patients had 3 Months Menorrhagia, 14 (14.0%) patients had 4 Months Menorrhagia, 15 (15.0%) patients had 6 months- 1year Menorrhagia and 14 (14.0%) patients had Frist Episode Menorrhagia. The value of z is 0.2008. The value of p is .84148. The result is not significant at $p < .05$. In our study, 86 (86.0%) patients had Normal HPLC. The value of z is 10.1823. The value of p is $< .00001$. The result is significant at $p < .05$. In our study, 71 (71.0%) patients had Normal USG and 29 (29.0%) patients had PCOS. The value of z is 5.9397. The value of p is $< .00001$. The result is significant at $p < .05$. (Table 2)

Figure 1 : Distribution of of participants according to Etiology.
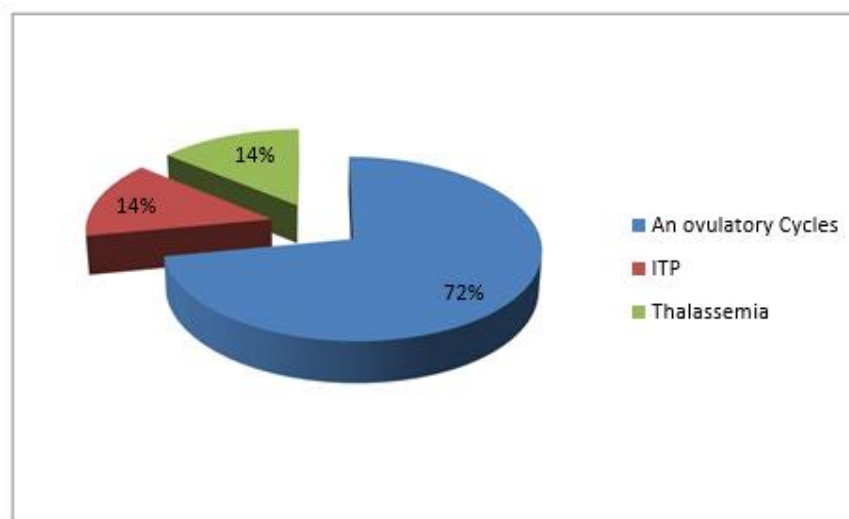
From the above figure we conclude that 72 (72.0%) patients had an ovulatory Cycles, 14 (14.0%) patients had ITP and 14 (14.0%) patients had Thalassemia. The value of z is 8.284. The value of p is $< .00001$. The result is significant at $p < .05$. (Figure 1)

Table 3 : Distribution of participants according to mean age (yrs), mean Hb level (GM/dl), mean platelet (lakhs), mean PT (Sec), mean INR (sec), mean TSH (MIU/ML), mean BT (min), mean CT (min) and mean Serum ferritin (UG/l).

	Number	Mean	SD	Minimum	Maximum	Median
Age (yrs)	100	15.4600	2.7170	10.0000	19.0000	16.0000
Hb level (GM/dl)	100	6.3194	1.3694	3.5000	7.5000	7.1100
Platelet (lakhs)	100	2.2170	.7015	1.0000	3.0900	2.3000
PT (Sec)	100	11.8660	2.0316	10.0000	16.7000	11.4000
INR (sec)	100	.9129	.1266	0.8000	1.1800	0.8900
TSH (MIU/ML)	100	3.7239	.7109	2.5100	5.0700	3.6000
BT (min)	100	3.1400	.3487	3.0000	4.0000	3.0000
CT (min)	100	4.2800	.4513	4.0000	5.0000	4.0000
Serum ferritin (UG/l)	100	64.3060	75.8906	1.1000	200.0000	26.0000

In above table showed that the mean Age (yrs) (mean±s.d.) of patients was 15.4600± 2.7170. Mean HB Level (GM/dl) (mean±s.d.) of patients was 6.3194± 1.3694. Mean Platelet (Lakhs) (mean±s.d.) of patients was 2.2170±.7015. Mean PT (Sec) (mean±s.d.) of patients was 11.8660± 2.0316. Mean INR (sec) (mean±s.d.) of patients was .9129±.1266. Mean TSH (MIU/ML) (mean±s.d.) of patients was 3.7239±.7109. mean BT (min) (mean±s.d.) of patients was 3.1400± .3487. Mean CT (min) (mean±s.d.) of patients was 4.2800± .4513. mean SR ferritin (UG/l) (mean±s.d.) of patients was 64.3060±75.8906. (Table 3)

DISCUSSION
All adolescent girls with heavy menstrual bleeding who required indoor admission for management of moderate-to-severe anaemia in the study period were included in the study. 100 patients were included in this study.
In our study, out of 100 patients, most of the patients were 10-15 years of age [42 (42.0%)] which was statistically significant (p.02382), (Z=2.2627).
We found that, most of the patients had 7 Years Menarche [29 (29.0%)] which was statistically significant (p.01684), (Z=2.3898).
Our study showed that, most of the patients had 6 Months- 1year Menorrhagia [15 (15.0%)] and 1 Year Menorrhagia but this was not statistically significant (p.84148).(Z=0.2008) and we also found that, more number of patients had Normal HPLC [86 (86.0%)] which was statistically significant (p< .00001), (Z=10.1823).

Elmaoğulları S et al[7] (2018) found that abnormal uterine bleeding (AUB) is the most common gynecological complaint of adolescents admitted to hospital. Heavy menstrual bleeding (HMB) is the most frequent clinical presentation of AUB. Anovulatory cycles, owing to immature hypothalamic-pituitary-ovarian axis, are the leading etiology of HMB and there is an accompanying bleeding disorder in almost 20% of patients with HMB.

It was found that, significant number of patients had PCOS [29 (29.0%)] which was statistically significant (p< .00001).(Z=5.9397). And majority number of patients had an ovulatory Cycles [72 (72.0%)] which was statistically significant (p< .00001).(Z=8.284). Most of the patients had Blood Transfusion [86 (86.0%)] it was statistically significant (p<.00001).(Z=10.1823).

Habib M et al[8] (2018) observed that heavy menstrual bleeding (HMB) in adolescents is a very common problem but the diagnosis is often delayed due to its embarrassing nature, fear of disease and ignorance of the severity of the condition. they report a case of young girl presented to Kahuta Research Laboratories (KRL) hospital, Islamabad with heavy menstrual bleeding and severe iron deficiency anaemia. After relevant investigations, blood was transfused. Initially she was managed on tranaxemic acid and Famila-28 but she failed to respond to medical treatment.

King LJ et al[9] (2020) found that glanzmann thrombasthenia is a rare bleeding disorder causing life-threatening bleeding at menarche in the adolescent female. Bleeding often necessitates admission and multiple blood transfusions. Due to the rarity of the disease, management of acute bleeding in new-onset menarche poses a particular challenge. A 12- year-old menarchial female had persistent vaginal bleeding despite multiple treatment modalities including aminocaproic acid, recombinant factor VIIa, intravenous estrogen, and gonadotropin receptor hormone agonists.

Lazanyi M et al[10] (2020) found that heavy menstrual bleeding (HMB) in adolecents is predominantly related to an immature hypothalamic–pituitary–ovarian axis. Structural causes in this population are extremely rare; therefore, pelvic ultrasonography is not required as a first-line investigation. Anecdotally, it has been observed that pelvic ultrasounds of adolescents with HMB are normal and do not change clinical care. The aim of this study was to analyse all female patients aged ≤18 years who were referred to a tertiary paediatric hospital for HMB over a 12-month period.

Our study showed that, the mean Age (yrs) of patients was [15.4600± 2.7170.], HB Level (GM/dl) of patients was [6.3194± 1.3694.], Platelet (Lakhs) of patients was [2.2170± .7015.], PT (Sec) of patients was [11.8660± 2.0316.], INR (sec) of patients was [.9129± .1266], TSH (MIU/ML) of patients was [3.7239± .7109.], BT (min) of patients was [3.1400± .3487.], CT (min) of patients was [4.2800± .4513.] and SR ferritin (UG/l) of patients was [64.3060± 75.8906].

CONCLUSIONS

In our study, out of 100 patients, most of the patients were 10-15 years of age which was statistically significant. Study found that, most of the patients had 7 Years Menarche which

was statistically significant. Our study showed that, most of the patients had 6 Months- 1year Menorrhagia and 1 Year Menorrhagia but this was not statistically significant and we also found that, more number of patients had Normal HPLC which was statistically significant. It was found that, significant number of patients had PCOS which was statistically significant. And majority number of patients had an ovulatory Cycles which was statistically significant. Most of the patients had Blood Transfusion it was statistically significant.

Menstrual problems are the commonest reason for gynecological OPD consultation among adolescent girls. Evaluation of bleeding problems in adolescents is justified, before considering them as normal physiological transition. Menorrhagia may be an important clinical manifestation in inherited bleeding disorders and needs to be evaluated.

Health education classes to create awareness regarding adolescent gynecological problems with the help of menstrual calender should be conducted regularly in school and colleges. Avoidance of junk food, healthy life style, yoga, etc. must be encouraged in adolescent girls. It must be a part of the school health program.

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