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Evaluation of Etiological Factors for Menorrhagia in Adolescent Girls in Tertiary Care Centre

Alka Patil*, Ashalata Bafna, Nilay Patel***, Anamika Arun*****

Abstract

Introduction: Adolescence is the time during which endocrinal changes of puberty, sexual development and growth occurs. WHO definition, adolescents are the individuals in the 10-19 years age group. Menstrual disturbances in adolescents may present diagnostic and management challenges for the gynaecologist, and may add future disruption to this difficult phase for adolescents and their families.

Aims & Objectives: This Study was conducted to find out the etiological factors of menorrhagia in adolescent girls, in age group 11yrs to 19yrs and to find out prevalence of these etiological factors.

Material & Methods: This is retrospective study from March-2015 to Sept-2016. Adolescent girls in age group 11yrs to 19yrs attending gynaecology OPD in tertiary care Centre were selected.

Results: In This Study 62 Patients presented with menorrhagia in Adolescent age group. In our Study 15 (24.19 %) girls had menorrhagia within 3 to 6 months duration, 24 (38.7%) girls had menorrhagia within 6 months to 1 year & 14 (22.58 %) girls suffered from menorrhagia for more than 1 year. Incidence of menorrhagia due to anovulation as etiological factor was 66.12%, and 13 patients (20.96%) had PCOD.

Conclusion: Anovulatory dysfunctional uterine bleeding was the commonest cause of menorrhagia in adolescent girls. Analysis of data showed PCOD as second etiological factor. This emphasizes the need to evaluate menorrhagia in adolescent girls, so that pathology is detected early and treatment is given accordingly. This will prevent reproductive morbidity in future.

Keywords: Adolescence; Menorrhagia; Anovulation; Coagulopathy; Hypothyroidism.

*Professor & Head
**Assistant Professor
*** Senior Resident, Dept. of Obstetrics and Gynecology, ACPM Medical College, Dhule.

Alka Patil,
Professor and Head,
Dept. of Obstetrics and Gynecology,
ACPM Medical College,
Sakri Road, Dhule - 424001
Maharashtra.
E-mail:
alkabpatil@rediffmail.com

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Inroduction

Adolescents constitute about 1/5th of the total population of India. The health of this important segment of population has been neglected until recently [1]. Adolescence is the time during which endocrinal changes of puberty, sexual development and growth occurs. Social and psychological adaptation to the hormonal changes of puberty goes on throughout adolescence [2]. According to WHO definition, adolescents are the individuals in 10-19 years age group [3]. This age group has distinct reproductive health issues, which should be diagnosed and treated promptly [4].

Menstrual disturbances in adolescents may present diagnostic and management challenges for the gynaecologist, and may add future disruption to this difficult phase for adolescents and their families [5]. Puberty is defined as the period during which secondary sexual characters begin to develop and the capability of sexual reproduction is attained [6]. Excessive vaginal bleeding is a common problem in adolescent girls where it comprise a significant public health issue. Menorrhagia, excessive menstrual bleeding, could be due to increased amount, duration or both. It is

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disturbing for young girls and parents. Menorrhagia has been reported to negatively impact several quality of life parameters [7].

Most cases of heavy menstrual bleeding in adolescents can be due toanovulatory cycles. Immaturity of Hypothalamo-Pituitary-Ovarianaxis is the cause of heavy menstrual bleeding in approximately 75% of cases in young females. However, anovulation is the diagnosis by exclusion. As ovulation has not occurred, the endometrium continues to be stimulated by unopposed estrogen, when menstruation eventually occurs, the bleeding tends to be excessive & prolonged. This can be recurrent problem until the cycle becomes regular, occasionally anaemia results with Hb as low as 6 or 7gm/dl [7]. First 30-40 cycles after menarche may be anovulatory, with the unopposed oestrogen action and endometrial hyperplasia [8].

Organic Diseases which Cause Adolescent Menorrhagia are

- Coagulation defects
  - Idiopathic Thrombocytopenic Purpura
  - Von Willebrand Disease
- Oestrogen producing tumours.
- Rarely arterio – venous malformations of vessels supplying the uterus.
- Pelvic Tuberculosis.
- Endocrine:
  - Diabetes mellitus.
  - Thyroid disease.
- Renal, hepatic disease [8].

An evaluation and diagnosis can minimize morbidities associated with these conditions and management accordingly can vastly improve quality of life of young girls

Aims & Objectives

1. This Study was conducted to find out the etiological factors of menorrhagia in adolescent girls, in age group 11yrs to 19yrs.
2. To find prevalence of these etiological factors.

Material & Methods

This study is undertaken to assess the etiological factors for menorrhagia in adolescent girls. Information regarding medical history, hematologic parameters and diagnosis was extracted. This is retrospective study from March-2015 to Sept-2016. Adolescent girls in age group 11yrs to 19yrs attending gynaecology OPD in tertiary care Centre were included in the study.

An Accurate and complete menstrual history is critical. The history included age at menarche, frequency, amount, duration of menses and last menstrual period. Menstrual flow was assessed in detail including no of pads, the passage of clots and soaking of clothes. Family history was obtained to rule out any familial disease including bleeding disorders.

Medications also were carefully recorded. A thorough review of systems was obtained with particular emphasis of bleeding abnormalities (easy bruising, epistaxis and gingival bleeding, endocrine disorders (especially Thyroid), eating disorders.

A thorough physical examination included height and weight and evaluation of overall health. Bruises were noted in search of bleeding abnormality. Any sign of hyperandrogenism such as acne or hirsutism, were noted, the thyroid gland was assessed for enlargement. The breasts examined for nipple discharge (galactorrhoea). Abdomen assessed for masses and hirsutism. External genitalia evaluated, looking for signs of clitoromegaly or hirsuitism. If indicated recto-abdominal examination was done to rule out an obstruction in genital tract, endometriosis in cul-de-sac, or pelvic mass.

Investigations

Protocol for investigations to be carried out was made. Some of the investigations were done routinely in all patients which include: Estimation of Hb, Total and differential count, Platelet count and Peripheral blood smear examination, Blood group-Rh and Blood sugar.

- Coagulation Profile
- Endocrine Evaluation Like:Thyroid Hormone Status, FHS, LH, Prolactin
- USG Abdomen-Pelvis
- Chest-X ray and Mountoux test was done in suspected cases of tuberculosis.

Inclusion Criteria

1. Age 11yrs to 19yrs
2. Unmarried adolescent girls
3. Adolescent girls with regular cycle with menorrhagia

Exclusion Criteria

1. Pregnant Adolescent girls
2. Age <11yrs and >19yrs
3. Adolescent girls with irregular cycles.

Table 1: Etiological Factor for Puberty Menorrhagia n=62

Etiological Factor	No of Patients	%
Anovulation	41	66.12
Polycystic ovarian disease	13	20.96
Hypothyroidism	4	6.45
Haematological Causes	1	1.61
Fibroid Uterus	2	3.22
Tuberculosis	1	1.61
Etiological Factor	**No Of Patients**	%
Anovulation	41	66.12
Polycystic ovarian disease	13	20.96
Hypothyroidism	4	6.45
Haematological Causes	1	1.61
Fibroid Uterus	2	3.22
Tuberculosis	1	1.61

Table 2:

Age(Yrs)	No of Patients	%
11-13	14	22.58
14-16	28	45.16
17-19	20	32.25
Total	**62**	**100**

Table 3: Relation to Menarche n=62

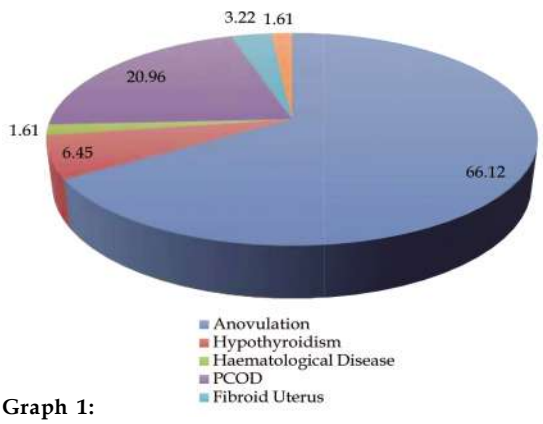
Duration Since Menarche	No of Patients	%
<6 mnth	8	12.90
6 mnth-1 yr	19	30.64
1 yr-2 yr	22	35.48
>2 yr	13	20.96
Total	**62**	**100**

Table 4: Duration of Symptoms n=62

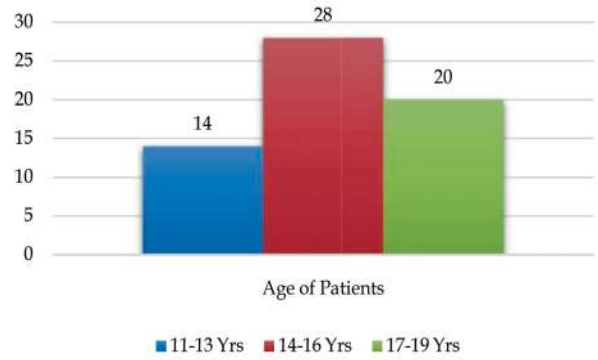
Duration	No of Patients	%
<3 mnths	9	14.51
3 mnths—6 mnths	15	24.19
6 mnths—1 yr	24	38.70
>1 yr	14	22.58
Total	**62**	**100**

Table 5: Anovulation as Etiological Factor

Anovulation	N (Total No of Patients)	Frequency	%
Present Study	62	41	66.12
Ashanti Shri	48	38	79.16
Salma Gilani	35	26	74.28
Roychaudhari	65	40	61.58
PrachiKorane	35	27	80.00
Kazi S Begum	50	41	82.00



Graph 1:



Graph 2:

Discussion

Gynaecological care of adolescents is multidisciplinary approach involving gynaecologist, endocrinologist, Oncologist and Psychologist. Genital examination in adolescent age group requires a sensitive approach with gentleness to preserve their psychosexual health and future fertility potential. Confidentiality is a primary ethical and professional duty for doctors and crucial issue in adolescent health care [5]. Menarche is a hallmark event in the life of adolescent girls, it mark the transition from childhood to puberty. Most common presentation of abnormal uterine bleeding in adolescents is puberty menorrhagia. Anovulation is responsible for 80% of case of puberty menorrhagia [9].

Duration since Menarche

In This Study 62 Patients presented with menorrhagia in Adolescent age group, at varying duration of menarche. 30.64% of patients had menorrhagia within 1 years of attaining menarche, while 35.48% of patients had menorrhagia after 2 years of attaining menarche.Study conducted by Khosla et al (2010) has 44% of patients with duration since menarche for more than 1 years

Duration of Symptoms

In our Study 15 (24.19 %) girls had menorrhagia within 3 to 6 months duration. 24 (38.7 %) girls had menorrhagia within 6 months to 1 year. 14(22.58 %) girls suffered from menorrhagia for more than 1 year.Rao in their series observed 62% of their patients had menstrual disorders of less than 6 months duration [10]. Study conducted by roychaudhari revealed that 37 (59.9%) patients had menorrhagia of less than 6 month duration and 15 (23%) were suffering for more than 1 year [6]. Study of Khosla et al (2010) observed that 44% of patients had menorrhagia for more than one year [11]. Study by Salma gillani et al (2012) also showed 58% of study population with menorrhagia for more than 1 year [12]. Similarly Kazi SB et al (2014) showed 60% of study population had menorrhagia for more than 1 year [13].

Etiological Factors

- *Anovulatory Dysfunctional Uterine Bleeding*

In our Study, Incidence of menorrhagia due to anovulation as etiological factor was 66.12%. Roychaudhari has reported 61.5% [6], Ashanti sri reported 79%, Kazi SB et al (2014) showed 82%, PrachiKorane has reported 80% and Chaudhari reported as 71% [14].

- *PCOD*

Menstrual disturbance is likely to be the main issue for adolescents with PCOS but the established long-term risks of obesity, subfertility and diabetes as well as the possible risks of endometrial hyperplasia and carcinoma and cardiovascular disease and breast cancer require consideration. In our study 13 patients (20.96%) had PCOD. Study showing PCOD as a cause of puberty menorrhagia was revealed in salmagillani et al (2012) study with 8.6% [12]. Shikha Joshi et al (2012) with 14.1% [15] and Kazi et al (2014) study with 10% [13].

- *Hypothyroid*

Hypothyroidism can be associated with pubertal menorrhagia, the reported incidence of subjective menorrhagia in myxoedema varies from 32-80% (scoot and massy 1964). The menorrhagia associated with hypothyroidism responds promptly to thyroid replacement. This suggest that thyroxine does have a direct effect on the spiral arteries and on haemostasis at menstruation [16]. In Our Study 6.45% patients had Hypothyroidism. In Study conducted by Roychaudhari, 6 patients (9.2%) were found to be Hypothyroid [6]. 6.25% of Patients were found to have hypothyroidism in a study conducted by A Shanti Shri [9].

- *Coagulation Disorders*

Young girls with blood coagulopathies are at high risk of abnormal bleeding with the onset of menarche, bleeding is usually heavy causing anaemia and may require blood transfusion. Claessen et al found 20% of cases of menorrhagia to be due to primary coagulation disorders. Laboratory evaluation, including Complete Blood Count, Platelet, Prothombin time, Partial thromboplastin time and Bleeding time provides an adequate screen for coagulation disorders [17]. The most common coagulation disorder causing menorrhagia in adolescents are Idiopathic Thrombocytopenic Purpura, Van Willebrands disease, leukaemia and Platelet dysfunctions [18]. In our Study 1 patient (1.61 %) had thrombocytopenic purpura.In study by Roychaudhari, haematological disorders were present in 15.3% of cases.

Thrombocytopenia was noted in 9.2% of patients in their study [6]. Saxena et al found Platelet function

disorder in 83% of women with menorrhagia due to coagulation defects [19].

- *Fibroid*

Although rare, uterine pathology such as Fibroids and Polyps may lead to abnormal uterine bleeding [20].

In our series 2 patients had fibroid uterus. Fibroid as a cause of menorrhagia was shown by salmagillani et al (2012) study having 2.8% of patients [12]. Study by Roychaudhari revealed fibroid as etiological factor in 3% of cases [6].

- *Tuberculosis*

In our study, we detected one patient with endometrial TB. We started on Antitubercular drugs to her, along with haematinics. Study by Shanti Sri, 8.3% of patients with adolescent menorrhagia had endometrial Tuberculosis [9]. Rao (2004) found genital tuberculosis in 5.7% of patients in puberty menorrhagia [10]. Roychaudhari, in his study found only one patient with endometrial TB (1.5%) [6].

Prachikorane (2014) quotes that in persistent abnormal bleeding coagulation disorders and leukaemia should be ruled out. Occasionally menorrhagia is the only presenting symptom in a patient of coagulation disorder [21]. Delease E, Lacour et al (2010) denotes that: The management of DUB in adolescents with hyperprolactinemia, thyroid dysfunction and other medical conditions require a multispeciality approach. Along with endocrine causes, there are many medical conditions that are associated with adolescent bleeding. A multidisciplinary approach is required for the correction and management of underlying causes as well as for the treatment of menstrual disturbance [22].

Conclusion

Though anovulation is the commonest etiological factor for menorrhagia in adolescent girls, it should be diagnosis by exclusion. Menorrhagia in adolescent girls may be presenting symptom for systemic diseases especially coagulopathy. Polycystic ovarian disease, hypothyroidism, fibroid uterus, tuberculosis is diagnosed with relevant investigations. In our series, anovulatory dysfunctional uterine bleeding was the commonest cause of menorrhagia in adolescent girls.

Analysis of data showed PCOD as second etiological factor.This emphasizes the need to evaluate menorrhagia in adolescent girls, so that pathology is detected early and treatment is given accordingly. This will prevent reproductive morbidity in future.

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