

## A non-randomized evaluation of puberty menorrhagia in a tertiary set-up in north-east India

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### **Abstract:**

**Background:** Almost a quarter of the population in developing countries are comprised of adolescent population. Of which 40% of the population is constituted by children under 15 years of age. Menstruation disorder affects 75% of the adolescent population and this abnormal bleeding accounts for 50% of gynaecological visits. Aim : the study was undertaken to identify the incidence of puberty menorrhagia and evaluate morbidity and mortality caused by puberty menorrhagia. **Methods:** this was a non-randomized study of 65 adolescents (10 -19 years) patients presenting with symptoms of menorrhagia in the outpatient department, emergency department and indoor of the obstetrics and gynecology department . A detailed history of complaints, detailed menstrual history were taken and physical examination with haematological assessment were conducted. **Result :** the incidence of puberty menorrhagia was found to be maximum in middle adolescent period (13.1 – 16 years). 15.39% were severely anaemic, 64.7% moderately anaemic and 18.47% mildly anaemic. **Conclusion :** the middle adolescent age group presented more commonly with menorrhagia and morbidity was confined to anaemia.

**Keywords:**puberty menorrhagia, adolescent, menstruation , anaemia

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### **I. Introduction:**

Puberty is the period during which secondary sex characters begin to develop and the capability of sexual reproduction is attained. One character of which is the first menstruation in one's female life. The mean age of attaining menarche is 12-13 years of age [1]. Although the mechanism triggering puberty and menarche remains uncertain, they were dependent on the genetics, nutrition, body weight and maturation of the hypothalamo-pituitary-ovarian axis. The complete maturation may take 2 years. So the initial menstrual cycles are often irregular. During this period, it is common for the adolescence to present with complaints of menstrual irregularity. Menstrual bleeding lasts 2-7 days in 80-90% adolescent girls[2]; most cycles range from 21-45 days, even in first year after menarche with the upper limit of 40-45 days[2][3][4]. By 3 years after menarche 60-80% of cycles are 21-34 days long; a pattern similar to that seen in adults [5]. Puberty menorrhagia is defined as excessive bleeding in amount >80ml or in duration >7 days occurring between menarche and 19 years [6]. In India it is fairly a common gynecological disorder in adolescence and sometimes it invites a life-threatening situation. Indian women are mostly anaemic and malnourished. The appetite disorder like anorexia nervosa, bulimia add to the burden. In general the prognosis is better when the dysfunctional uterine bleeding starts after the period of regular menstruation than when started at menarche [7].

### **II. Materials And Methods :**

This was a non-randomized study of 65 adolescents (10-19 years) presenting with symptoms of menorrhagia. The subjects were those attending the outpatient department, emergency department and the indoor ward of the department of obstetrics and gynaecology, JNIMS Imphal. The study was proceeded with an informed written consent taken from the guardian/parent of the subjects. A detailed history including the chief complaints, detailed menstrual history, abnormalities of menstrual cycle like menorrhagia, metrorrhagia, polymenorrhia, polymenorrhagia were recorded. History of bleeding diathesis, hypothyroidism and hyperthyroidism, history of tuberculosis and symptoms of PCOS were taken. Family history and detailed physical examination were carried out. Investigations like haemoglobin % , BT/CT, platelet count, blood grouping , RBS were done. In necessary cases ultrasonography abdomen and hormonal assays were conducted. Inclusion criteria: all adolescent girls attending outpatient department, emergency department and indoor ward of obstetrics and gynecology department with complaints of menorrhagia. Exclusion criteria : all married adolescent girls with complaints of menorrhagia and girls above 20 years with menorrhagia.

### III. Result:

#### I. Age distribution of patients :

Age in years	No. of patients	percent
10-13	9	13.84%
13.1-16	43	66.16%
16.1-19	13	20%
Total	65	100%

From the above table it is observed that among the study group of 65 adolescents, 9 patients (13.84%) were in the early adolescent period, 43(66.16%) patients were in middle adolescent period while 13(20%) patients in the late adolescent period.

#### II. Age at menarche :

Age in years	No. of patients	percent
10-11	6	9.2%
11.1-12	17	26.16%
12.1-13	39	60%
13.1-14	3	4.7%
Total	65	100%

The above table showed that maximum number of the patients had their menarche between the age group of 12.1-13 years. i.e 39 patients at 60%. 6 patients (9.2%) attained their menarche between the age group 10-11 years and 17 patients (26.16%) had their menarche at 11.1-12 years of age while only 3 patients (4.7%) were of the age group of 13.1-14 years. The mean age at menarche as we found in our study was 12.5 years of age.

#### III. Age and haemoglobin distribution:

Age	Haemoglobin in gram%				total	P value
	<7	7-10	10-12	>12		
10-13	3	5	0	0	0	>0.1
13-16	4	32	8	1	44	
16-19	3	5	4	0	16	
Total	10(15.39%)	42(64.7%)	12(18.47%)	1(1.5%)	65	

From the above table it was found that 10 patients (15.39%) were severely anaemic when they were first examined. 42 patients (64.7%) were moderately anaemic and 12 patients(18.47%) were mildly anaemic. Only 1 patient (1.5%) was not anaemic at the time of presentation. It was also observed that there was no statistically significant relation between age and haemoglobin distribution with p value of >0.1. Of the 98.5% anaemic patients 21.53% of them were required to undergo blood transfusion while 16.67% of the anaemic patients were hospitalised.

### IV. Discussion:

Puberty is considered the first part of adolescence and adolescence as the period from the beginning of puberty till maturity and so sometimes they are used interchangeably [8]. Adolescent /puberty is also divided into early (10-13years), middle (14-16years) and late (17-19years) for the sake of convenience [9]. The period of adolescence vary widely depending on tradition, culture and social factors within each society.

In the present study the middle group (13-16years) presented the most common group affected with menorrhagia. The average age of menarche in Indian women in 2005 was 13.76 years[10]. Our study showed that the majority of the patients accounting 60% attained menarche between 12.1-13years and the mean age being 12.5years.

Laura J Benjamin,2009[11] stated that the mean age of menarche varies somewhat based on ethnicity : 12.7years for non-hispanic white girls, 12.3 years for black girls and 12.5years for Mexican American girls[1][12]. There was no correlation between age distribution and haemoglobin estimation as Hb% does not show any statistical significance( $p>0.1$ ).

While there was no mortality; morbidity was confined to anaemia. Only 1.5% does not show any signs of anaemia while 98.5% were anaemic with 21.53% needing blood transfusion. 16.67% hospitalised patient weight in to the degree of morbidity caused by puberty menorrhagia.

#### **V. Conclusion:**

Puberty menorrhagia is an important clinical problem which needs proper investigation including ultrasonography, hormonal study and study of coagulation factors. Reassurance, counselling of adolescent girls about reproductive physiology, regular follow-up besides medication are an absolute indication.

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