Original article:

Pattern of menstrual cycle in young adults

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Abstract:

Introduction: Variations in menstrual pattern of woman may affect her physical, psychological and social well-being. Present work was planned to study pattern of menstruation in young adult females.

Method: It was a cross sectional study of female medical students, in age group of 18 to 25 years. A pre-designed, pre-tested questionnaire was used for data collection.

Results: Out of 280 students screened 80% students had menarche at the age of 12-14 years. Mean age of menarche was 12.9 years. 3 % of the girls had duration of cycle less than 21 days, while it was more than 35 days in 11% of the population and 21-35days in about 86% of the students. Short bleeding periods (<3 days) were reported in 13.2% population. Long periods (>6 days) were reported in 12.2% population and 74.6% girls had bleeding period of 4-6 days. Dysmenorrhea was reported by 68% girls. 3% girls were having documented polycystic ovarian syndrome.

Conclusions: Clinicians need to identify menstrual abnormalities as early as possible in order to minimize possible consequences. Adolescents should be encouraged to chart their menstrual frequency and regularity. If any abnormality is detected they should be referred to the gynecologist for the needful management.

Keywords : dysmenorrhoea, menarche, menstrual flow, and menstrual interval

Introduction

Puberty is a transitional period in everyone's life. The most important event during this period of female puberty is the onset of menstruation. Menstrual health plays a key role in women's sexual and reproductive life. Menstrual cycle is regulated by cyclical changes in female sex hormones and the length and regularity of menstrual cycles reflect changes in the level of these hormones. Therefore detailed menstrual history is regarded as a noninvasive marker for endocrine status of that female.

Menarche is the first menstrual period. Early menarche is associated with cardiovascular disorders[1] and higher susceptibility to cancer, especially of the breast and thus overall increased mortality[2]. Late menarche is associated with osteoporosis and increased fracture risk[3]. Following menarche the cycle length may be irregular in the first few years due to immaturity of hypothalamo-pituitary- ovarian axis leading to anovulatory cycles[4]. But after 2-3 yrs cycles become fairly regular and are ovulatory cycles. Changes in the menstrual pattern of woman may affect her physical, psychological and social well-being and may result in work-related problems. Menstrual irregularities create great anxiety among the adolescent females and their families. Women particularly in India may feel shy and embarrassed to discuss about their menstruation and some stigma is associated with this subject in the Indian culture. Therefore they are reluctant to take medical help in case of menstrual problems. Adolescents and their parents are most often unaware of normal ranges of menstrual cycle length and amount and duration of flow. History of menstrual pattern will help to assess hormonal balance. It will also help to screen big population for pathological conditions like PCOD.

Therefore this study was planned to know variations in menstrual pattern in young adult females.

Method

Study population consists of unmarried nulliparous, healthy female medical students, in age group of 18 to 25 years. There was voluntary participation and written consent was taken. Students taking hormonal medication were excluded from the study. Each student was interviewed about the age of menarche, interval between two most recent menses, duration of bleeding and dysmenorrhoea[5]. At the same time pre-designed, pre-tested questionnaire was used for data collection. The questions were properly explained to avoid any form of misunderstanding and to facilitate accurate response by the subjects.

Results

Out of 306 students 280 students were included in the study. Students who could not recall their menstrual events correctly and Students on hormonal medications were excluded. Those 280 girls were examined for various characteristics. Table no.1 shows that of the 80% students were having menarche at the age of 12-14 years. 29 (10%) girls had early menarche in the range of 9-12 years while 28(10%) girls had delayed menarche in the age range of 14 to16 years. Mean age of menarche was 12.9 years. In our population, 3 % of the girls had polymenorrhoea i.e. menstrual interval of less than 21 days. Oligomenorrhoea i.e. menstrual interval of more than 35 days was found in 11% of the population. Length of the menstrual interval was normal i.e. 21-35 days in about 86% of the students as shown in Table no.2. 34 (12.2%) had short bleeding periods (<3 days) and 37(13.2%) students had long periods (>6 days) .209 (74.6%) girls had normal bleeding period of 4-6 days (Table no.3). Dysmenorrhea was reported by 190 (68%) girls. 8(3%) girls were having documented polycystic ovarian syndrome.

Table-1: Age of menarche

Menarche		
Age in years	Number of students	%
9 to12	29	10
12to14	223	80
14-16	28	10
Total	280	100

Menstrual cycle interval		
Days	Number of students	%
<21	8	3
21-35	241	86
>35	31	11
Total	280	100

Table-3: Duration of bleeding

duration of bleeding		
Days	Number of students	%
<4	37	13.2
4 to 6	209	74.6
>6	34	12.2
Total	280	100

Discussion

Menstrual cycle is a hallmark of female reproductive life and menarche, the first menstrual period, is an index of female puberty. Most of the females experience it in the age group of 10 to 16 years of age. In this study mean age of menarche was found 12.9 years .It is comparable to the finding of Shrotriya Charu and colleagues in India[6].But other two researchers have shown higher mean age of menarche i.e.13.5 yrs[7] and 14.5 yrs[8] in Indian population. In countries outside India also there is a vast difference in the age of menarche. It was found to be 12.72 years in U.S. population [9] and it was 15.0 years in Igbo women of Southeast Nigeria[10]. These results support our concept that menarche varies from population to population depending upon nutritional, geographical and environmental conditions[11] as well as genetic factors[1]. It also varies in different races. It may depend upon BMI and exercise training. Therefore menstrual pattern will be peculiar for that specific population.

In our study, length of the menstrual interval was 21-35 days in about 86% of the students, while it was more than 35 days in 11% of the population. 3% of students had polymenorrhoea i.e. menstruation intervals of less than 21 days. One study in India has reported that the intermenstrual interval was between 21-35 days in 69.52% girls while 8.38% adolescents had polymenorrhoea and 22.1% had oligomenorrhoea [7]. If there is occasional irregularity in menstrual cycle it may be due to an immature hypothalamo-pituitary- ovarian axis. This is common in first 2 to 3 years after menarche. Changing trends of lifestyle, changing dietary habits and tough competition are responsible for psychological or physical stress in this age group leading hormonal imbalance and this could be one of the causes of temporary menstrual disturbances.

These disturbances can be corrected by simple lifestyle modifications. Abnormalities for months together could be because of pathological organic causes. It is known that females with oligomenorrhoea may have endocrine abnormalities and may be at risk for ovulatory dysfunction in adulthood[12].

Longer bleeding periods (>6 days) were observed in 12.2% of the girls in this study, while Abdel Aziem and colleagues have reported that 33.8% subjects with bleeding >6 days[13]. These students are potentially more susceptible for iron deficiency anemia which can be avoided by iron supplementation. Thus menstrual history is regarded as a vital sign of female reproductive life. It can give clues to diagnose and treat various conditions. Therefore one should impart the habit of charting menstrual details every month. The average cycle length of particular person is very important for obstetricians. It is helpful for calculating the expected date of delivery as well as it is taken into consideration while giving family planning advice.

But adolescents with persistent menstrual abnormalities may have polycystic ovarian syndrome (PCOS). PCOS can be associated with reproductive disorders, cardiovascular diseases, type II diabetes mellitus and metabolic syndrome in the letter age. In this study 3% girls had documented polycystic ovarian syndrome. PCOS is associated with endometrial cancer, breast cancer and infertility in later part of life.

We have observed that 68% students had dysmenorrhoea .Lee L K had reported similar observation, 69.4% Malaysian adolescents had dysmenorrhoea[14]. Dysmenorrhea in adolescent and young adults is usually primary and is associated with normal ovulatory cycles. Students may remain absent for school or college teaching because of dysmenorrhea and that can lead to poor academic performance.

Evaluation of menstrual cycle should be regarded as one of the vital component while assessing overall health status of the female. History of menstrual cycle highlights

the hormonal status of the female and can predict future risks.

CONCLUSION

We recommend that adolescents should be encouraged to chart their menstrual frequency and regularity. Adolescents with irregular menstrual pattern should be referred to clinician to rule out pathological conditions.

Limitations: In our study we have not assessed ovulatory and anovulatory cycles, which needs hormonal assay.

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