The Menstrual Abnormalities on Premenstrual Syndrome (PMS) Patients: A Cross Sectional Study

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Abstract
Objectives: To evaluate the menstrual abnormalities on premenstrual syndrome (PMS) patients.
Methods: This cross-sectional observational study was done in the department of Physiology, Chittagong Medical College, from 2018 to December 2018 Total 100 subjects between 18-22 years were selected by purposive sampling according to inclusion and exclusion criteria from the 1st year female medical students. They were divided in anaemic (Group A) and non anaemic (Group B) on the basis of haemoglobin concentration.
Result: During the study, mean (±SD) age of the subjects were 18 ± 0.5 years and 19 ± 0.5 years in group A and group B respectively. Mean (±SD) Hemoglobin of the subjects were 10.70 ± 0.25 gm/dl and 16.26 ± 1.50 gm/dl in group A and group B, respectively. In group-A 40% had dysmenorrhoea while in group-B 18% had dysmenorrhea
Conclusion: Uncomfortable symptom during menstrual cycle that may temporarily disturb normal functioning. These symptoms may last from a few hours to many days, and the types and intensity of symptoms can vary in individuals. Further study is needed for better outcome of the study.

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Keywords: Menstrual abnormalities, PMS, Haemoglobin

Introduction

Premenstrual syndrome (PMS) is a common clinical and psychological problem in adolescent girls. It reduces quality of life of a girl. The severity varies in different subjects. Medical students have increased risk of developing different symptoms for their stressful lifestyle.

There is different etiology of PMS. Postpartum psychosis, lactational failure of mothers and emotional impairment, cognitive skill, language impairment of children are some complications of PMS. Anaemia is a common problem in the adolescent girls in our country. [1,2,3]

The most common physical symptoms are, headache, insomnia, breast tenderness, joint pain, abdominal bloating and pelvic pain.[1,4] Common emotional symptoms are irritability, anxiety, depression, mood swing, confusion and poor concentration[5,6,7]. Three most prominent symptoms of PMS are irritability, tension, and dysphoria.

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These symptoms start usually from the teen years and worsen with aging.[9,10] PMS can complicate the process of puberty. Social and educational performances are also affected. It results in poor self-esteem and dissatisfaction which affect daily life of the patients.

In this study our main aim was to evaluate the glycemic and thyroid status on PMS patients.

Objective

General objective

To evaluate the menstrual abnormalities on PMS patients.

Specific objectives

- To detect clinical characteristics of the patients.
- To identify menstrual abnormalities of the study groups.

Methods

A cross-sectional study was conducted in the Department of Physiology, Chattagram Medical College, Chattogram, Bangladesh during the period from January 2018 to December 2018.Study adopted purposive sampling size. A total 100 were selected purposively on the basis of emotional and physical symptoms mimicking PMS for at least 3 consecutive months during time period 8.00 am - 2.30 pm daily during class hours.During the study, total sample size 100. Subjects were divided into two groups: Group A and Group B. Group A (Anaemic group): Included 50 subjects having PMS symptoms with anaemia Group B (Non anaemic group): Included 50 subjects having PMS symptoms without anaemia.1st year female medical students of Chittagong Medical College, Chittagong were included in this study. The study was done in the class periods with the kind permission of the Head of the Department. All data were collected in presence of a female class teacher. After completion of daily topic, female students were separated in the same class and study procedures were carried out. Data were processed and analyzed using computer-based software SPSS (Statistical Package for Social Sciences) for windows version 22. Unpaired t-test was used to compare quantitative variables. Pearson's correlation was done to see the relationship between anaemia and PMS, BMI and PMS. Variables were expressed as range and mean ± SD. p value < 0.05 were taken significant.

Results

Age distribution of the patients where mean (±SD) age of the subjects were 18 ± 0.5 years and 19 ± 0.5 years in group A and group B respectively. No statistically significant differences were observed between two groups and both the groups were matched for age (Figure 1). Study shows educational status of the patients where in group-A, only 20% patients were completed their graduation where in group-B 25% (Table I). Study shows Haemoglobin levels of the study subjects where mean (±SD) Hemoglobin of the subjects were 10.70 ± 0.25 gm/dl and 16.26 ± 1.50 gm/dl in group A and group B respectively (Table II). Study shows distribution of clinical characteristics between two groups, where 33.1% had mild headache in group-A where as in group-B it was 30.5% (Table-3).

Study shows menstrual abnormalities of the study groups where in group-A 40% had dysmenorrhoea while in group-B 18% had dysmenorrheal (Figure-2).

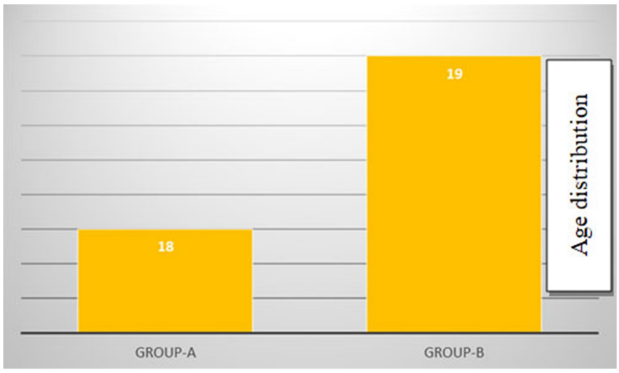

Figure 1. Age distribution of the patients

Table I: Distribution of the patients according to educational status of the patients

Educational status	Group A, %	Group B, %
Illiterate	2%	5%
Primary	9%	12%
Secondary	23%	15%
Higher-secondary	41%	10%
Graduation or more	20%	25%

Table II: Haemoglobin (Hb), of study groups

Haemoglobin (Hb) levels	Group A	Group B
Hb (gm/dl)	10.70± 0.25	16.26± 1.50

Table III: Distribution of clinical characteristics between two groups

Groups	Symptoms (%) in Group A				Symptoms (%) in Group B			
Clinical Characteristics	No	Mild	Moderate	Severe	No	Mild	Moderate	Severe
Fluid Retention	41.0	0	0.2	0	96	4.2	1	0
Headache	51.2	33.1	9.6	5	53.0	30.5	13.2	2.0
Mastalgia	78.0	29.5	2.7	0	75.4	20.3	4.0	0
Abdominal bloating	53.6	35.7	14.4	0	40.5	49	8.1	2.0
Joint pain	46.3	20.3	26.7	2.2	51.3	32.5	16.3	0

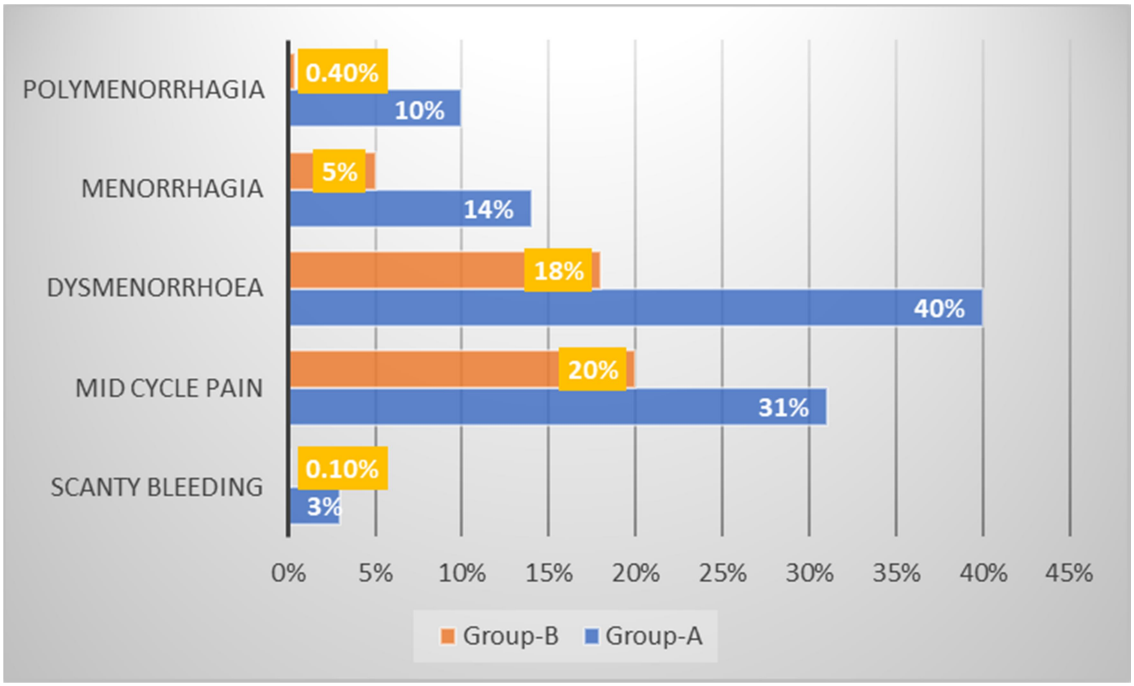

Figure 2. Menstrual abnormalities of the study groups

Discussion

Premenstrual syndrome is a cyclic recurrence of distressing emotional and physical symptoms in the luteal phase of menstrual cycle and these must be resolved by ovulation.[1,4,6] Symptoms must present in at least 3 of last 6 cycles. Nearly all women with regular menstrual cycles experience some symptoms in the luteal phase of the cycle. If these symptoms are exaggerated then called PMS.[4,6] There is still controversy regarding haemoglobin concentration in different phases of menstrual cycle.[6,7] Recent studies showed that anaemia is significantly related to depression, fatigue and postpartum depression (PPD).[7] Variation of haemoglobin concentration, alteration of peripheral circulation during luteal phase were supposed to be responsible for various PMS symptoms.[10,11] In one study showed that, 41 subjects were anaemic having haemoglobin <12 gm/dl and 49 subjects were non anaemic having haemoglobin>12 gm/dl.[8] They were grouped as anaemic group (Group A) and non anaemic group (Group B).which was similar to our study.Age group selected in our study was 18 years to 22 years as in previous studies.[3,4] PMS symptoms were commonly observed in this age group.[10,11,12] One study reported that, etiology of PMS is multifactorial and complicated.[3,14] Anaemia reduces oxygen supply to the body that might cause PMS symptoms.[3] Measurement of venous oxygen index (VOI) in peripheral circulation showed altered peripheral circulation in luteal phase which was supposed to be related to PMS symptoms.[2]

Recent studies showed that transporters for serotonin and norepinephrine are decreased in iron deficiency anaemia causing PMS.[4,5] Altered noradrenergic and/or thyroid function might cause the capillaries smaller in PMS subjects as suggested in a study.[2]

Conclusion

From our study we can conclude that, uncomfortable symptom during menstrual cycle that may temporarily disturb normal functioning. These symptoms may last from a few hours to many days, and the types and intensity of symptoms can vary in individuals. Further study with large and representative sample from reference population is needed for better understanding of the outcomes and its effect on lifestyle among pms patients.

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