



The Sociodemographic Characteristics of PMS Patients

Authors

Dr Dipan Baidya^{1*}, Dr Momtaz Begum², Dr Shahin Akter³

¹Lecturer, Department of Physiology, Chittagong Medical College, Chittagong, Bangladesh

²Professor & Head, Department of Physiology, Chittagong Medical College, Chittagong, Bangladesh

³Assistant Professor, Department of Physiology, Chittagong Medical College, Chittagong, Bangladesh

*Corresponding Author

Dr Dipan Baidya

Abstract

Objectives: In this study our main goal is to evaluate the sociodemographic characteristics of PMS patients.

Methods: This cross-sectional observational study was done in the department of Physiology, Chittagong Medical College, over one-year period from January, 2017 to January, 2018. Total 90 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.

Results: Mean (\pm SD) weight of the subjects were 53.12 ± 10.4 Kg and 53.56 ± 10.3 Kg in group A and group B respectively. Mean (\pm SD) TSH of the subjects were 0.98 ± 0.52 mIU/L and 0.90 ± 0.38 mIU/L in group A and group B respectively. Also, in anaemic group 39% had dysmenorrhoea while in non anaemic group 36% had dysmenorrhea.

Conclusion: From our study we can conclude that larger sample size, among different age group and professions, for an extended period including different hormonal assay and study of neurotransmitters with follow up of the subjects after supplementation of haematinics should be continued to find out the causal factors of PMS.

Keywords: Anaemia, PMS, Sociodemographic characteristics.

Introduction

Premenstrual syndrome (PMS) is a condition with distressing physical, behavioral and psychological symptoms in absence of organic or underlying disease. It regularly recurs during the luteal phase and disappears or significantly regresses by the end of menstruation.

PMS consists of emotional and physical symptoms occurring only during the luteal phase of the menstrual cycle. The degree and type of symptoms can vary significantly from one to another.^{1,2,3,4}

PMS have emotional symptoms along with physical symptoms.^{1,4} Only physical symptoms

are not considered as PMS⁴. Emotional symptoms should be chief complaint in PMS.^{1,4}

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.

These symptoms start usually from the teen years and worsen with aging.^{9,10} PMS can complicate the process of puberty. Social and educational performance are also affected. It results in poor

self-esteem and dissatisfaction which affect daily life of the patients.

Some factors like hormonal change, diet and lifestyle may also cause PMS.^{8,9} It is more prevalent in obese, sedentary and women of low academic background. Using hormonal contraceptives showed a lower incidence of PMS¹. A recent study showed that anaemia is significantly related to depression and fatigue which are predictors of postpartum depression (PPD).¹⁰ Another study showed no significant association between anaemia and depression²⁴. Some previous studies showed significant relation of emotional PMS with PPD.¹¹

In this study our main goal is to evaluate the sociodemographic characteristics of PMS patients.

Objective

General Objective

- To assess the sociodemographic characteristics of PMS patients.

Specific Objectives

- To detect TSH levels of the study subjects.
- To identify menstrual history of the patients.

Methodology

Study Type: It was a cross sectional observational study.

Place and period of the study: This study was carried out in the Department of Physiology, Chittagong Medical College from January, 2017 to January 2018.

Sample Size: To determine the sample size for this study following formula has been used⁶⁷:

$$n = \frac{z^2 pq}{e^2}$$

$$= \frac{(1.96)^2 (0.33)(0.77)}{(0.05)^2}$$

$$= 339.75$$

Where, n = desired sample size,

z = Standard normal deviate set at 1.96 with 95% confidence interval

p = 33% = 0.33 Estimated prevalence value for the target population according to DSM IV¹³.

q = 1-p and = 1-0.33 = 0.77

e = degree of accuracy, 5% of p or acceptable error 0.05%

The optimum sample size was 339.75 at e = 0.05 Due to resource and time constrain 90 subjects were taken in this study.

Study Population

- Total sample size 90
- Subjects were divided into two groups: Group A and Group B.

Group A (Anaemic group): Included 41 subjects having PMS symptoms with anaemia

Group B (Non anaemic group): Included 49 subjects having PMS symptoms without anaemia

Sample Technique

All subjects were selected purposively on the basis of emotional and physical symptoms mimicking PMS for at least 3 consecutive months during time period 8.00am - 2.30pm daily during class hours.

Method

1st year female medical students of Chittagong Medical College, Chittagong was 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 Analysis

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

In table-1 shows sociodemographic characteristics of the study subjects where mean (±SD) weight of the subjects were 53.12 ± 10.4

Kg and 53.56 ± 10.3 Kg in group A and group B respectively. No statistically significant differences were observed between two groups

and both the groups were matched by weight to each other. The following table is given below in detail:

Table-1: Age, Height, Weight, BMI, Blood pressure and Pulse rate of study groups (n=90)

	Group A (n=41)	Group B (n=49)	p value t-value
Age (years)	19.59 ± 0.7 (18 - 21)	19.53 ± 0.7 (18 - 21)	>0.05
Height (cm)	62.29 ± 2.0 (55 - 67)	62.19 ± 1.9 (55 - 67)	
Weight (kg)	53.12 ± 10.4 (32 - 92)	53.56 ± 10.3 (32 - 92)	
BMI (kg/m ²)	21.20 ± 4.1 (15.6-28.8)	21.38 ± 3.9 (15.6-28.8)	
Systolic BP (mm of Hg)	110.49 ± 7.0 (100 - 120)	115.82 ± 5.7 (100 - 120)	
Diastolic BP (mm of Hg)	75.85 ± 4.9 (70-80)	78.57 ± 3.5 (70-80)	
Pulse (beats/min)	76.98 ± 4.1 (70 - 88)	73.63 ± 3.4 (70 - 88)	

Values are expressed as mean \pm SD. p values were obtained by unpaired Student's t test.

Group A : Anaemic subjects

Group B : Non anaemic subjects

Values in parenthesis indicate range.

n = number of subjects

In figure-1 shows TSH levels of the study subjects where Mean (\pm SD) TSH of the subjects were 0.98 ± 0.52 mIU/L and 0.90 ± 0.38 mIU/L in group A

and group B respectively. No statistically significant differences were observed. The following figure is given below in detail:

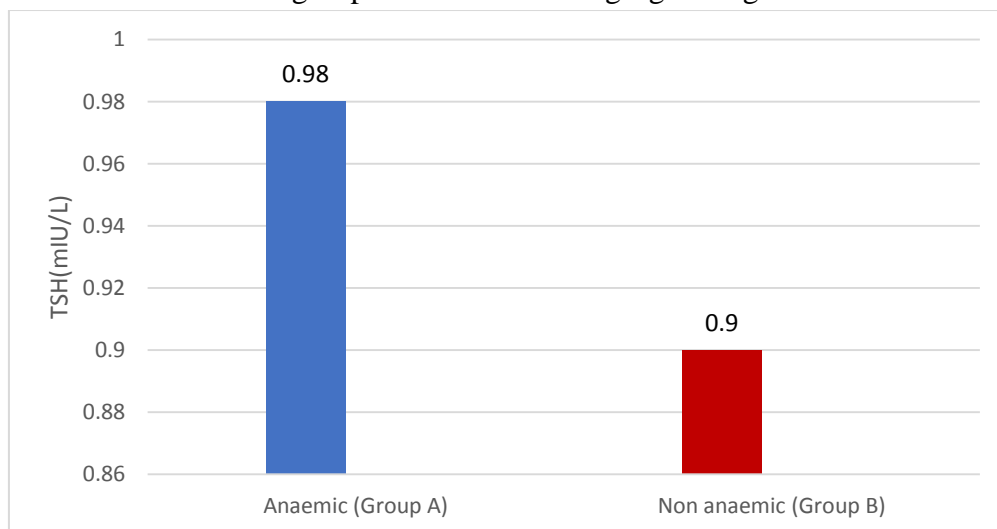


Figure-1: TSH levels of the study subjects

In table-2 shows menstrual history of the patients where mean (\pm SD) age of menarchy of the subjects were 12.80 ± 1.16 and 12.76 ± 1.03 in

group A and group B respectively. No statistical significant difference was observed. The following table is given below in detail:

Table 2: Age of menarchy, duration of menstrual cycle, duration of bleeding of the study subjects (n=90)

	Group A (n=41)	Group B (n=49)	p value
Age of menarchy (in years)	12.80 ± 1.16 (10 - 15)	12.76 ± 1.03 (10 - 15)	>0.05
Duration of cycle (in days)	29.59 ± 2.61 (20 - 35)	29.65 ± 2.71 (20 - 35)	
Duration of bleeding (in days)	5.0 ± 2.01 (3 - 15)	5.0 ± 1.08 (3 - 15)	

Values are expressed as mean ± SD. p value was obtained by unpaired Student’s t test.

Group A : Anaemic subjects

Group B : Non anaemic subjects

Values in parenthesis indicate range.

n = number of subjects

In figure-2 shows menstrual abnormalities of the study groups where in anaemic group 39% had dysmenorrhoea while in non anaemic group 36%

had dysmenorrhoea. The following figure is given below in detail:

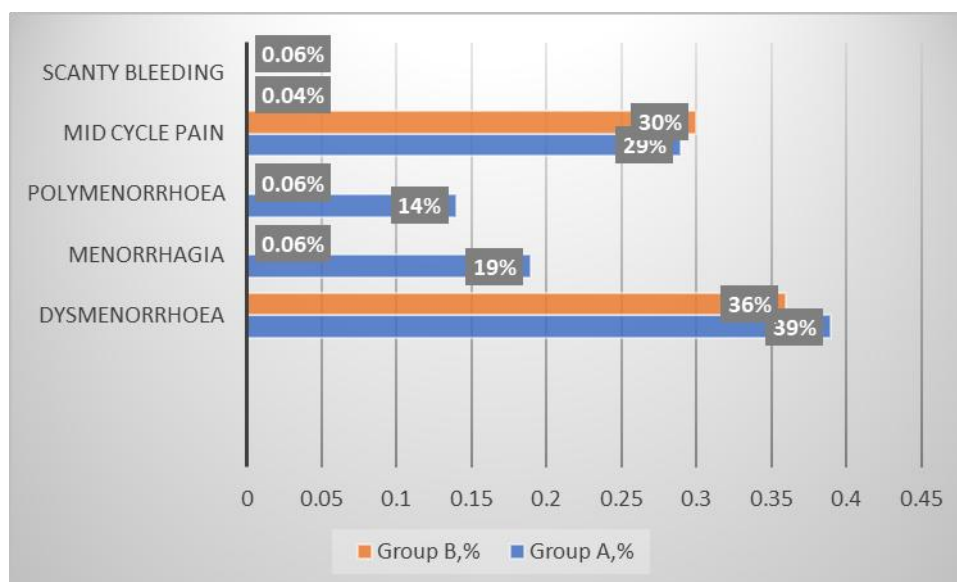


Figure-2: Menstrual abnormalities of the study groups.

In table-3 shows Frequency of emotional symptoms of PMS among the study subjects where grading was done on the basis of number by adding all the PMS marks in the supplied

questionnaire filled up by the subjects (0 = no symptoms, 1 = mild symptoms, 2 = moderate symptoms, 3 = severe symptoms). The following table is given below in detail:

Table-3: Frequency of emotional symptoms in study group A (anaemic) (n=41)

Emotional symptoms of PMS	Group A (n = 41)							
	No Symptoms		Mild Symptoms		Moderate Symptoms		Severe Symptoms	
	No.	%	No.	%	No.	%	No.	%
Anxiety	7	17.0%	28	68.0%	6	14.6%	0	0%
Irritability	5	12.1%	24	58.5%	10	24.3%	2	4.8%
Depression	11	26.8%	18	43.9%	12	29.2%	0	0%
Confusion	21	51.2%	14	34.1%	5	12.1%	1	2.4%
Mood swing	7	17.0%	15	36.5%	18	43.9%	1	2.4%

Discussion

The present study was conducted in the department of Physiology of Chittagong Medical College, Chittagong from July, 2015 to June, 2016 to see the relationship between anaemia and PMS in 1st year female medical students. In this cross sectional observational study, 90 apparently healthy age matched female subjects were included as per inclusion and exclusion criteria by purposive sampling. PMS was diagnosed and scored according to Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV) criteria and Royal College of Obstetricians and Gynaecologists (RCOG) Greentop guideline^{1,4}. For calculation of PMS score and grading of the subjects, standard questionnaire was filled up by the subjects. Though PMS has got more than 200 different symptoms but only 05 emotional and 05 physical symptoms were included in our questionnaire.^{1,4} Anxiety, Irritability, Depression, Confusion and Mood swing were emotional symptoms. Fluid retention, Headache, Mastalgia, Abdominal pain and Joint pain were physical symptoms included in that questionnaire. Physical examination was done. Blood pressure, pulse and temperature were recorded. Anthropometric measurements of the subjects were taken using parameters like height, weight and BMI. Haemoglobin (Hb), TSH and RBS were also estimated for diagnosis and for exclusion.

Anthropometric measurements like height, weight were measured and BMI was calculated of both groups to exclude obesity in our study. There were no statistical difference between the groups as was similar to a previous study ($p > 0.05$)⁸. They measured mean fat percentage instead of BMI, by In-Body 720 (Bio space, Korea) and supposed that total body fat percentage was more significantly associated with PMS rather than BMI.⁹ We did not measure total body fat percentage.

Another study showed significant association between BMI and PMS.¹¹ BMI was as an indicator of nutritional status in that study. Subjects were selected from slum areas. They found a positive correlation between nutritional

status and severity of PMS. Our study subjects were apparently healthy with normal BMI. No relationship was observed between BMI and severity of PMS in our study.

Percentage of different physical and emotional symptoms of PMS in both groups were observed in our study.

In previous studies anaemia was supposed as causative factor for PMS.^{12,13} Menorrhagia and polymenorrhoea were the main causal factors for anaemia in those studies. Our study simulates with them. We also found menorrhagia and polymenorrhoea as menstrual abnormalities along with anaemia.

Another report showed that severity of PMS was related to late age of menarche.⁸ Our study dissimulate with this. We observed no statistical difference regarding age of menarche in our PMS cases. Geographical variation, cultural differences, socioeconomic status might be the cause behind this variation.⁷

Conclusion

From our study we can conclude that larger sample size, among different age group and professions, for an extended period including different hormonal assay and study of neurotransmitters with follow up of the subjects after supplementation of haematinics should be continued to find out the causal factors of PMS.

Recommendations

- Similar study with large sample size, different age groups and longer duration of PMS.
- Symptoms may be compared with other disorders those mimic PMS.
- Intervention may be done by haematinics with follow up of the subjects.
- Different hormonal assay may be done to see the relationship of those with PMS.

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