



Prevalence of Pre-Menstrual Syndrome in Medical Student Population and Their Relief Measures - A Cross Sectional Study

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Abstract

Background: *The Premenstrual syndrome (PMS) is commonly seen in the younger age groups and, therefore it is demarcated as significant public health problem in young girls.*

The aim of the study is to evaluate the prevalence, severity, factors of premenstrual syndrome (PMS) and its impact among the female medical students and relief measures adopted by teenage girls suffering from PMS.

Methods: *This cross-sectional study was conducted on the female medical students attending SV Medical College Tirupathi, A.P, India. It included 150 medical students. They filled different pre structured questionnaires covering American College of Obstetrics and Gynecology (ACOG) criteria to diagnose PMS, socio- demographic factors, physical and psychological activities.*

Results: *PMS was diagnosed in 82% of cases .In our study in that severity is more in abdominal pain (76%), body ache (67.7%), backache (48.4%), irritation (22.6%), breast discomfort (66.72%), headache (15.3%), and acne (44.2%), abdominal bloating (0.5%).56 girls used medication to get relief from premenstrual symptoms.*

Conclusion: *PMS is a most common condition in young students with regular menstrual cycles. Severe PMS was associated with more impairment of daily works and psychological tensions. Older student age, rural residence, earlier age of menarche and positive family history are possible risk factors for PMS.*

Key Words: *Premenstrual Syndrome (PMS), Teenage girls, Psychological activities*

INTRODUCTION

Menstruation is a physiological phenomenon, associated with periodic discharge of mucosal lining of uterus starts with menarche and ends with menopause. Many women experience

collective physical and physiological symptoms prior to menstruation called premenstrual syndrome. Premenstrual syndrome is characterized by physical, cognitive, affective & behavioral symptoms that occurs cyclically 7-14 days prior to

onset of menstruation, and resolves slowly at or within 4 days of menstruation for at least 2-3 consecutive cycles.¹ Premenstrual symptoms are irritability, lassitude, malaise, headache, gastrointestinal upsets such as colon spasm and constipation, frequency of micturition, a feeling of fullness in the breasts, abdomen, face, and feet. Premenstrual symptoms associated with the premenstrual syndrome impair the health, relationships and work productivity. In women with introspective tendencies all these symptoms exaggerated and form a well-marked psychosomatic disorder². In some cases there is demonstrable water retention and a weight gain of 1or1.5k.g. The breast symptoms are well marked and gives rise to a feeling of fullness, weight and tenderness. Some patients suffer from a type of migraine. Premenstrual disorders primarily affect the adolescent girls both with ovulatory and oligo ovulatory cycles. Hormonal imbalance, diet, stress, different lifestyles alter the PMS. Cyclic hormonal fluctuations can alter brain neurotransmitters or neuropeptides, leading to PMS and PMDD in biologically susceptible women. Major life events and daily stressors influence the course of PMS, and day-to-day stress is more strongly associated with PMS than a culmination of major life events³. Major life events and stressors such as marriage, divorce, and caring for children may help to explain why women in their 30s and 40s are more likely than their younger counterparts to experience PMS. Women with PMS and PMDD have been found to have abnormal serotonergic function during the luteal phase, as evidenced by lower whole blood

serotonin concentrations and decreased platelet uptake of serotonin.⁴ Reduced serotonergic neurotransmission has been linked with depressed mood, irritability, anger, aggression, poor control of impulses, and increased craving for carbohydrates. The role of serotonin in the etiology of premenstrual mood symptoms is the observation that serotonergic drugs, such as the selective serotonin reuptake inhibitors (SSRIs), are highly effective in reducing the symptoms of PMDD.^{4,5} Increase in the extracellular water throughout the body possibly due to excessive estrogen production, or to some cyclical disturbance of adrenal cortical function is seen constantly. Oestrogen is recognized to produce water and sodium retention. .

PMS is classified as a physical disease in the 10th revision list of International classification of disease. It is an important public health problem commonly seen in young women with frequency 5-75%, which will affect quality of life.² Quality of life, can be defined as a subjective feeling that the individuals life is changing entirely for the better and may also be denoted as how the individual perceives her life with in the culture and value system. It is a tool with increased acceptability to determine the functional impact of a disease. Dysmenorrhoea and PMS are most commonly observed menstrual problems. PMS adversely affect self confidence, social relations, school/college attendance quality of life. The diagnosis of PMS or PMDD requires that symptoms be confined to the luteal phase, with a symptom-free period before ovulation each month. By assessing the completed daily symptom

rating calendar, the clinician can determine whether the patient's symptoms follow a cyclical pattern. Symptoms that are not confined to the luteal phase do not represent PMS and instead may indicate another disorder.⁶

PMS have an onset between adolescents and in 20's. PMS is common but 3-9% comes in severe form, premenstrual dysphoric disorder is the severe form of PMS³. To diagnose PMDD, at least five symptoms out of eleven (including at least one out of the first four affective symptoms) have to be confirmed by prospective daily self-ratings of PMS symptoms in the form of a diary over two consecutive menstrual cycles⁷. These symptoms include: (1) affective lability; (2) irritability or anger or increased interpersonal conflicts; (3) depressed mood; (4) anxiety or tension; (5) decreased interest; (6) difficulty in concentrating; (7) lethargy, fatigability, or lack of energy; (8) change in appetite; (9) Hypersomnia or insomnia; (10) a sense of being overwhelmed or out of control; and (11) other physical symptoms (for example, breast tenderness, pain). The symptoms have to exist in the majority of cycles over the preceding 12 months and must cause significant distress or interference. Consists of primarily mood related may include physical symptoms such as bloating. Also the extension of the interference criteria with the expression of distress is essential as it takes into account that women may maintain their function with a high level of distress without suffering from interference in functioning¹⁰. PMS symptoms are interfering with women's functioning at the home, social situations and at work that can be impaired every

month often over a span of many years'⁵. Risk factors for Premenstrual syndrome are hormonal imbalance, Thyroid dysfunction, and hypoglycemia. stress, fluid retention, genetic and psychological factors.

Treatments include analgesics, GnRh analogues, oral contraceptives and selective serotonin reuptake Inhibitors (SSRI's) which are regarded as first line agents in severely affected patients⁶. High glutamate levels have been leads to mood disorders, decreased level of endorphins which is a opioid acts as neurotransmitter. The American College of Obstetricians and Gynecologists (ACOG) has developed the following diagnostic criteria for the diagnosis of PMS: patient reports at least one of each of the following affective and somatic symptoms during the five days before menses, .Symptoms must appear in three consecutive menstrual cycles. Affective symptoms: Depression. Angry outbursts, irritability, anxiety, confusion, social withdrawal. Somatic symptoms: Breast tenderness, abdominal bloating, headache, swelling of extremities and to assess the prevalence, and relief measures adopted by the MBBS girls suffering with PMS diagnosed ACOG criteria⁸

METHODOLOGY

The study was a cross-sectional study conducted among the female medical students attending S.V. Medical College Tirupathi. It included 150 students. Permission has taken from Ethical Committee and informed consent was obtained from study participant. Unmarried girls between 18-22 years of who had regular cycles for last 6

months having menstrual cycle length of 21-35 days were included in the study. Participants have to meet the criteria of PMDD or the criteria of severe PMS as outlined in the guidelines of ACOG⁵. Girls suffering with organic disease, thyroid disorders, eating disorders Gynecological diseases like endometriosis, birth of a child or lactation during last 3 months, pregnancy, participation in psychotherapy due to premenstrual symptoms, and psychological disorders were excluded from the study.

The diagnosis of PMS was according to ACOG (American college of obstetrics and gynecology). The study is conducted by pre structured

questionnaire which contains fifteen questions. The data is analyzed with Microsoft Office Version.2007.

RESULTS

The present study included girls with age between 18-22 with prevalence of premenstrual syndrome is 82% with mean age of menarche 13.4 years with an average duration of menstrual cycle 4 days. Almost all of them had regular menstrual cycles. Out of 150, only 8 members had family history of PMS. Girls with 85% were sedentary and rest 15% practiced exercise and yoga to get relief from premenstrual symptoms.

Table I: Weight Distribution Of Subjects

S.NO	Weight distribution	number	Percentage
1	Obesity	17	11.3%
2	Overweight	26	17.3%
3	Normal	107	71.3%

71.3% of girls are in normal weight distribution. Menstrual irregularities were more in overweight and obese girls than normal weight girls but the

study included only those with regular menstrual cycles.

TABLE II: Personality changes during menstruation

S.No	Personality change	Number	Percentage
1	Extrovert	74	49.3%
2	Aggressive	25	16.6%
3	Emotional	24	16%
4	Stressful	18	12%
5	Introvert	9	6%

Extrovert personality was most common followed by aggressive and emotional.

Table 3: Symptoms during menstruation

S.no	Symptom	percentage
1	Abdominal pain	76%
2	Breast discomfort	66.72%
3	Body aches	67.71%
4	Increased appetite	58.3%
5	Acne	44.4%

Physical symptoms, the most common symptoms were abdominal pain (76%), Breast Discomfort, Body ache, and increased appetite. The total members who have taken treatment for PMS are 16 and remaining members of PMS group got relieved their symptoms by rest and sleep. The order of consumption of medications were antispasmodics, analgesics and herbal medicines.

DISCUSSION

Premenstrual symptoms in most women can be relieved or reduced through life style interventions such as dietary changes like craving for carbohydrates rich food, exercise and drug therapy either with hormones or psycho tropic drugs .For premenstrual dystrophic disorder Serotonin reuptake inhibitors have now emerged as first line drugs No specific thyroid abnormality with PMS. Dietary supplements including calcium also be an option for women. Stress also induces pms.¹¹ vitamin E supplementation at doses up to 600 I.U. Per day is effective in reduce mood and physical symptoms, if symptoms includes breast pain and tenderness. Herbal product like evening primrose oil contains the essential fatty acid g-linolenic acid, a prostaglandin precursor based on

hypothesis that PMS involves a deficit of g-linolenic acid¹¹.

Prevalence of PMS was (150) 82% present study in compared with other studies Egypt El-Defrawi et al reported prevalence of 69.6%, Rasheed and Al; Sowielem in Saudi Arabia reported a prevalence of 96.6%, Steiner M, Born L ⁽⁶⁾ reported the prevalence rate of 85%. Due to the complexity of PMS, no single therapeutic program is effective, even for women suffering from a similar cluster of symptoms.¹² For the treatment of PMS/PMDD, more than 80-90 different therapies have been suggested, resulting in much conflicting information and many un guaranteed information of effectiveness. No single intervention is effective for all women, and there is a substantial placebo response with many therapies. It may take time and several attempts to determine the safest and most effective treatment for an individual patient. A stepwise fashion, treatment is a best management approach in PMS/PMDD.

Beginning with lifestyle modifications and progressing to nutritional supplementation, non-pharmacologic therapy and nonprescription and prescription medications. Conservative treatment has proved beneficial in many women and should

be considered first-line therapy in women with mild symptoms and adjunctive therapy in all others. Selection of management can also be related to the nature of the symptoms. In mild to moderate PMS symptoms changing of lifestyle patterns, nutritional changes includes reduction of caffeine, reduced consumption of salt, increase in Carbohydrates and consumption of vitamin B rich foods¹⁰. Nonprescription drugs like calcium 1000g or magnesium 400g once daily¹¹. Relaxation therapy and cognitive behavioral therapy and PMS with physical problems predominating: Spironolactone 2 mg daily, for breast tenderness OCs (oral contraceptives-regular or long cycle) or MPA for breast and abdominal pain, NSAIDs during the luteal phase. Treatment must be individualized and often requires a combination approaches. Long-term treatment of PMS/PMDD is typically required, as evidence indicates that symptoms return when treatment is discontinued. NSAIDs (naproxen, mefenamic acid, ibuprofen, etc.) in doses commonly used in the treatment of menstrual muscle cramps.

CONCLUSION

PMS is the most common problem in adolescent girls. It was observed that 82% of the study population is suffering from PMS. The total members who have taken treatment for PMS are 56 out of 150 and remaining members of PMS group got relieved their symptoms by rest and sleep. Antispasmodics followed by analgesics and herbal medicines are commonly used.

The cross sectional study conducted among adolescent girls confirmed these results and to plan out strategies for better detection and management of PMS in young women. The counterpart of a pathologization is to deny premenstrual symptoms which might also be problematic as many women suffering from PMS do not feel that they are being taken seriously. The introduction of a reproductive health component into college health education program could help in providing information, education and support to the young students. Patients should be advised not to take herbal preparations randomly or without consultation.

A few studies have examined the use of other forms of alternative therapies for the treatment of PMS/PMDD. Other alternative therapies women may want to explore include the following, acupressure, acupuncture, homeopathic remedies.⁹

Conflict of Interest: None

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