

PRE-MENSTRUAL SYNDROME- A REVIEW

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Abstract: Premenstrual Syndrome is described as a collection of predictable physical, cognitive, affective, and behavioral symptoms that occur cyclically during the luteal phase of the menstrual cycle and resolve quickly at or within a few days of the onset of menstruation. Severe form of premenstrual syndrome is called Premenstrual Dysphoric Disorder. The typical symptoms of premenstrual syndrome normally involves the symptoms related to mood (mood swings, anxiety, and irritability) and physical conditions – like headache, fatigue, bloating, sleep disturbances, nausea, and breast tenderness. 90% of the women all over the world including Pakistan, experience these symptoms during their child bearing age. Several factors such as hormonal change, diet and lifestyle may cause premenstrual syndrome. PMS affects the daily life of menstruating women of any age; race; and part of world. A large population of Pakistani women is also a victim of PMS. Prescribed medications as oral contraceptives and antidepressants, some over-the-counter drugs like ibuprofen, paracetamol and home remedies are taken as a treatment by the women in Pakistan. Hence Changing lifestyle, modifying diet, exercises, stress reduction and provision of services by health providers, such as counseling by pharmacist can optimize Quality of life and overall health of women suffering from PMS not only in Pakistan but also in the rest of the world.

Key words: Premenstrual Syndrome, Premenstrual Dysphoric Syndrome, Prevalence, Quality of life, Symptoms.

Introduction:

Background:

For centuries, and still at present, the social history of premenstrual syndrome (PMS) and phenomena is entangled with the social history of gender relations. [1]In early 1980s PMS became a household term. Popular press articles told women how to “beat the Blues”, “overcome the menstrual uglies” and negotiate interpersonal relations during those times of month. Clinicians and researchers met at international conferences to discuss definition, etiology and possible treatment of a syndrome estimated by some to affect 80% of women. Feminist and legal scholars debated the validity of term and its use as a defense for criminal behaviour. Since Premenstrual Tension (PMT), as PMS was first termed, has been in medical discourse since Frank (1931) associated it with hormonal imbalances. [2]The premenstrual syndrome (PMS) was first described in 1931 by Frank and Horney, who speculated on the possible physiopathological origins of the condition and on some forms of treatment [3] The World Health Organization’s (WHO) International Classification of Disease, 10th edition includes premenstrual tension syndrome in its section of gynecologic

disorders, as a disorder of the female genital organs. [4]

Definition:

There is no single precise definition of the PMS, but it is generally accepted that Premenstrual syndrome can be broadly defined as any constellation of psychological and physical symptoms that recur regularly in the luteal phase of the menstrual cycle, remit for at least 1 week in the follicular phase and cause distress and functional impairment. [5] Premenstrual syndrome (PMS), occurs 7–14 days before the onset of menstruation and subsides with the commencement of menstrual flow, affects women during their reproductive age, and is associated with physical, psychological and behavioral changes [6] Premenstrual syndrome (PMS) is a cyclic recurrence of distressing somatic and affective symptoms in the luteal phase of menstrual cycle and in the few days (1-3days) of the next follicular phase. [7]

If the mental symptoms predominate, are very severe, and are associated with impairment, then the patient is classified as having premenstrual dysphoric disorder (PMDD) which may be viewed as a severe subtype of PMS [8]

Premenstrual syndrome (PMS) can be defined as a recurrent disorder that occurs every

month in the luteal phase of the menstrual cycle, and remits with the onset of menstruation. PMS is characterized by a complex set of symptoms which include physical, psychological and behavioural changes of varying severity. This can interfere with the lives of the affected, as well as their interpersonal relationships. [9]

Prevalence: It has been estimated from retrospective community surveys that nearly 90% of women have experienced at least one premenstrual syndrome. Epidemiological surveys have estimated that as many as 75% of reproductive age women experience some symptoms attributed to the premenstrual phase of menstrual cycle. One study on adolescent sample (N=78) showed that 100% of the participants reported at least one premenstrual symptom of minimal severity [10,11]

There exists very little population based data from Pakistan regarding the prevalence of PMS and PMDD. A few studies have used convenience sampling of medical students and other groups of women from major cities in Pakistan. However, because of convenience sampling they remain biased. [12]

Symptoms and Clinical Manifestations: The symptoms reappear monthly and last for an average of 6 days per month for the majority of the reproductive years. It has been calculated that affected women experience almost 3000 days of severe symptoms during the reproductive years. [13]

More than 200 symptoms of PMS/PMDD have been described in literature, ranging from mild symptoms to those severe enough to interfere with normal activities.[14]

It is estimated that up to 85% of premenopausal women experience at least one premenstrual symptom and 15-20% meet clinical criteria for premenstrual syndrome (PMS).[15]

The most important somatic symptoms are feeling overwhelmed, food craving, insomnia or hypersomnia, headache, pelvic pain and discomfort, breast tenderness, joint pain,

bloating; and the most common and distressing affective symptoms are irritability, anxiety, depression, mood swing, hostility, poor concentration, confusion, social withdrawal and interpersonal conflicts. The significant appearance of these symptoms starts from the teen years and worsen through the process of aging. During the childbearing age, up to 40% of women have some form of PMS, but only 3-8% have severe psychological manifestations -Premenstrual Dysphoric Disorder (PMDD). Symptoms of premenstrual syndrome may be emotional, physical, behavioral and it may vary in intensity. Premenstrual dysphoric disorder (PMDD) is a severe form of premenstrual syndrome. The main symptoms of premenstrual syndrome include mood swing, anger, fatigue, abdominal cramp, abdominal bloating, and back ache [7, 16]

These symptoms should interfere with the normal activities of a woman including social, occupational, interpersonal and even the sexual functioning and are not related to any organic and functional disease. [17]

Patho-physiology, Etiology, and Risk factors: Within the past decade, premenstrual syndrome (PMS) has become the subject of rigorous scientific scrutiny. As a result, diagnostic criteria have been developed, and the pathophysiology of the disorder has been partially elucidated. The preponderance of evidence suggests that the disorder is the result of the interaction of cyclic changes in estrogen and progesterone with specific neurotransmitters. Serotonin and gamma-aminobutyric acid (GABA) appear to be especially important in this regard. Increased understanding of PMS has enabled the development of specific treatment modalities that, unlike previous prescriptions, have demonstrated efficacy in rigorous and reproducible studies. [18]

The implication is that ovulation, or ovulation-related processes, are an important factor in the patho-biology of PMS. Menstrually related

disorders affect a significant number of women of reproductive age. The pathobiology of menstrually related disorders, specifically premenstrual syndromes, involve multifaceted interactions between processes of the central nervous system, hormones, and other modulators. These interactions include gonadal hormones, their metabolites, and several neurotransmitters and neurohormonal systems, including serotonin, γ -aminobutyric acid, and rennin-angiotensin-aldosterone system. In vulnerable women, response of these systems to normal fluctuations of gonadal hormones may contribute to expressions of symptoms. Disrupted homeostasis and impaired adaptation may be an important underlying mechanism.[8]

Individual variation in stress responsiveness may be involved in pathophysiology of premenstrual symptoms. [19]

Reduced laryngeal functioning is a reality for certain women to the extent that researchers have now given it an official name: Premenstrual Voice Syndrome (PMVS). Other researchers call this syndrome "premenstrual dysphonia," or "laryngopathia premenstrualis." The syndrome or pathology is characterized by vocal fatigue, decrease in range, loss of power, faint hoarseness, loss of range, and loss of agility. [20]

The etiology of Premenstrual syndrome remains unknown and may be complex and multifactorial. The role of ovarian hormones is unclear, but symptoms often improve when ovulation is suppressed. Changes in hormones level may influence centrally active neurotransmitters such as serotonin, but in circulation sex hormones levels are typically normal in women with Premenstrual syndrome. [21]

Factors such as hormonal change, diet and lifestyle may cause premenstrual syndrome. [22]

A variety of risk factors is associated with patterns of symptom reporting and may provide clues to the etiology of perimenstrual

symptoms and help to identify women most vulnerable to them. A woman's age and cycle characteristics are predictors of the type and severity of perimenstrual symptoms she experiences. In addition, a history of affective illness may be associated with increased reporting of perimenstrual symptoms. Risk factors for PMS include advancing age (beyond 30 years) and genetic factors. PMS symptoms are identified in adolescents and can begin around age 14, or 2 years post-menarche, and persist until menopause. Some studies suggest that women whose mothers report PMS are more likely to develop PMS (70%, versus 37% of daughters of unaffected mothers). In addition, concordance rates for PMS are significantly higher in monozygotic twins (93%) compared with dizygotic twins (44%). There are no significant differences in personality profile or level of stress in women with PMS compared with asymptomatic women. However, women with PMS may not handle stress as well [14, 23]

There have been few studies in which premenstrual symptoms in women suffering from depressive disorders were assessed. [24]

The risk of incident PMS tended to increase with the quantity of cigarette smoking and was significantly higher for women who began smoking during adolescence. [25]

Diagnosis: The premenstrual syndrome (PMS) is an amalgum of mental and physical symptoms arising in the luteal phase of the menstrual cycle. The symptoms disappear after the start of menstruation. During the rest of the follicular phase the patient is free from symptoms. The cyclic nature of the symptom interpretation is a diagnosis of the syndrome. [26]

Premenstrual symptoms are experienced by up to 90% of women of child bearing age. A smaller subset meet criteria for premenstrual syndrome (PMS) and less than 10% are diagnosed as having premenstrual dysphoric disorder (PMDD). There are no specific physical findings or laboratory tests can be

utilized to make the diagnosis of PMS. The various bodies that have published definitions include the American College of Obstetricians and Gynecologists (ACOG), the American Psychiatric Association, and the National Institutes of Mental Health. There is no separate diagnostic code for PMS or PMDD. In a Practice Bulletin published in the year 2000, ACOG defined diagnostic criteria for PMS based on the work of Mortola describes that PMS can be diagnosed if at least one of the affective and one of the somatic symptoms is reported five days prior to the onset of menses in the three prior menstrual cycles. The symptoms must be prospectively recorded in at least two cycles and must cease within 4 days of onset of menses and not recur until after day 12 of the cycle. These symptoms must be recorded in the absence of pharmacologic therapy, or use of hormones, drugs, or alcohol, and cause identified dysfunction in social or work related activities. [14]

A variety of instruments have been developed for evaluating PMS, and these have taken into consideration varying numbers of symptoms and intensity levels. Since PMS does not have a characteristic clinical condition, the first questionnaires on PMS were long and directed towards application in clinics. [27]

Published criteria for diagnosis vary greatly between authoritative bodies; a new classification from the International Society for Premenstrual Disorders (ISPMDD) will allow this to be resolved. It will also enable clinicians to provide accurate diagnosis and effective management. [28]

Management: The management of PMS is often frustrating for both patients and physicians. Initially, all patients with PMS should be offered non-pharmacological therapy. These non-pharmacological interventions for PMS include patient education, supportive therapy and behavioral change. Therapies for PMS vary in their efficacy and risk of adverse events. Some

therapies, such as eating a healthy diet, are known to have a variety of health benefits with very low risk of adverse events, and should be recommended to virtually all women. Pharmacologic therapies carry a greater risk of adverse events, and this must be considered when selecting such therapy, and should be only offered to patients with persistent symptoms of PMS. [29]

PMS has a high morbidity level and reduces the quality of life for many women of reproductive age, with pharmaceutical treatments having limited efficacy and substantial side effects. Physical activity has been recommended as a method of reducing menstrual symptom severity. However, little evidence exists to support a clear relationship between physical activity and PMS. Treatment goals for PMS are to ameliorate or eliminate symptoms, reduce their impact on activities and interpersonal relationships, and minimize adverse effects of treatment. Although numerous treatment strategies are available, few have been adequately evaluated in randomized, controlled trials. Initially, all patients with PMS should be offered nonpharmacologic therapy. Medication should be offered to patients with persistent symptoms of PMS and those who meet criteria for PMDD. Surgical treatment, principally hysterectomy plus bilateral oophorectomy, is controversial because it is irreversible and associated with significant risks. Surgery may be considered in severely affected patients who fail to respond to other therapies and also have significant gynecologic problems for which surgery would be appropriate. [15, 30]

A number of mineral/vitamin supplements have been shown to be useful treatments for PMS. Progesterone and progestogens are commonly prescribed for PMS. In fact, many women who suffer from PMS develop depressive side effects from the commonly used progestogens. There is some evidence that the newer contraceptive pills may help some women who suffer from PMS. There is

little doubt that the most effective drug treatments for PMS are the SSRIs. If the patient knows exactly when her symptoms occur then the drug may be started two days before the onset of symptoms and then ceased at the onset of menstruation. Complementary/alternative therapies as herbal medicine, homeopathy, dietary supplements, relaxation, massage, reflexology, chiropractic are popular with women who have premenstrual syndrome. [31]

Calcium carbonate should be recommended as first-line therapy for women with mild-to-moderate PMS. Selective serotonin reuptake inhibitors can be considered as first-line therapy for women with severe affective symptoms and for women with milder symptoms who have failed to respond to other therapies. Other therapies may be tried if these measures fail to provide adequate relief. [32]

No single treatment is universally recognized as effective and many patients often turn to therapeutic approaches outside of conventional medicine. Some herb remedies seem useful for the treatment of PMS. [33]

Traditional Chinese medicine (TCM) has significant advantages in treating gynaecological disorders, one of them is PMS. [34]

The physical and affective symptoms of a broad range of conditions are improved following mindfulness based practices. Mindfulness is predictive of improved symptomatology and well-being. Development of a mindfulness based intervention aimed at reducing symptom severity in premenstrual symptom sufferers. [35]

Very recent studies with large samples of women with premenstrual syndrome, have reported a reduction in depressive symptoms and premenstrual tension as a result of light therapy. [36]

A wide range of therapeutic interventions have been advocated in the treatment of PMS, many of which have side effects. As

symptoms of PMS can be chronic and long-term, special attention should be paid to the side-effects of pharmacological interventions. For this reason, alternative approaches may be recommended. [9, 37]

The most effective current management of PMS is a conservative one including accurate diagnosis, stress control, sensible levels of diet and exercise and perhaps the use of alprazolam in the premenstrual period. Other approaches such as the use of mefenamic acid and evening oil of primrose remain unproven. Progesterone has been proven ineffective. Further research is required into the value of antidepressant medication. [38]

The majority of PMS cases are dealt with in general practice but severe cases should be managed by a multidisciplinary team including a gynecologist, psychiatrist or psychologist, dietitian and counselor. Unfortunately this approach is rarely available. [39]

It's a real biological condition for which women seek treatment--and for which effective treatment is available, the most important thing is to give women who seek help. [40]

Impact of PMS on Quality of life of females: PMS is associated with reduction in health related quality of life and women with PMS have greater work productivity impairment than women without PMS. [11]

PMS is a commonly encountered complaint among women and may affect women's quality of life and reduce their occupational productivity. [41]

Steps in the Treatment of PMS/PMDD:

The following steps for treating PMS/PMDD are based on recommendations outlined in an ACOG Practice Bulletin:

Step 1: A. If mild/moderate symptoms: Recommend supportive therapy with good nutrition, complex carbohydrates, aerobic exercise, calcium supplements, and possibly magnesium or chasteberry fruit. B. If physical symptoms predominate: Try spironolactone or

NSAIDs, or hormonal suppression with OCPs or medroxyprogesterone acetate. Step 2: When mood symptoms predominate and are significantly impairing function: Initiate SSRI therapy. An anxiolytic can be used for specific symptoms not relieved by the SSRI medication. Step 3: If not responsive to steps 1 or 2: Try GnRH agonists. This would not be done in an adolescent without consultation with a gynecologist. [14]

Education about PMS: Efficacy of an education program helped in increasing knowledge and decreasing the severity of symptoms of premenstrual syndrome (PMS). After the education program, the schoolgirls in the experimental group had significantly increased knowledge scores as measured by the Premenstrual Syndrome Knowledge Questionnaire. Three months following the education program, a significant reduction in total PMS scores and three of the subscale scores was measured by a translated version of Abraham's Menstrual Symptom Questionnaire, suggesting that the education program could have been the source of the reduction in PMS symptoms of the experimental group of young adolescent girls. [6]

Pharmacists can improve the recognition and management of these common conditions by providing patient education on premenstrual symptoms and counseling women on lifestyle interventions and pharmacotherapy to relieve their discomfort. [42]

Awareness about PMS: Both the medical and lay communities now have increased awareness of the morbidity associated with the cyclic, disabling premenstrual symptoms in many women during the reproductive years; however, the presentation of premenstrual symptoms in a woman requires careful evaluation. In particular, women with premenstrual symptoms often have concurrent psychiatric or medical illnesses that warrant treatment. [43]

Female patients may approach the pharmacist with questions about treatment of menstrual problems. The only conditions that are amenable to self-treatment are premenstrual syndrome and primary dysmenorrhea. [44]

PMS in Pakistan: Premenstrual syndrome is a very common problem, which does exist not only in west but also in Asian countries like Pakistan.

PMS/PMDD is a common problem in the reproductive age group and severe forms are more prevalent in this part of the world. Measures should be adopted to reduce the incidence of this disorder which influences the quality of life in young girls. [10]

Physical symptoms were the most prevalent PMS experienced by Pakistani women in this study, and significantly affect activities of their daily life. [12].

Very high frequency (81.25%) of PMS among women of reproductive age has been reported in Pakistan. Hence Premenstrual syndrome is a common problem, having an adverse impact on a woman's quality of life and productivity. [21]

Despite the bias however, these and other Asian studies report that a significant proportion of Asian women suffer from premenstrual symptoms, and therefore it is not a "western disease" as frequently perceived.

Conclusion:

As the reviewed literature indicates, significant group of women of child bearing age experience some cyclic menstrual related symptoms of various degrees. These PMS symptoms can have debilitating effects on women's quality of life and work production. However, race, ethnicity and culture may influence expression of premenstrual symptoms and their severity. Most current studies on PMS have been conducted in western countries. Thus, it is imperative to investigate the prevalence, severity, and most common symptoms of PMS among various populations to promote quality of life, health and well being of reproductive age women in

that population. It is concluded that premenstrual syndrome is a very common problem, which does exist not only in west but also in Asian countries like Pakistan. Studies done in Pakistan indicate that here prevalence rate of PMS is very high and it adversely affects the Pakistani woman's quality of life and productivity that leads to increased direct and indirect medical costs. It also affects their self confidence, esteem and relationship with others. Previous studies on PMS done in Pakistan have not given the complete picture of the scenario, as most of them included a highly selective sample comprising of medical students which was also small in size. A study on "Awareness, prevalence and drug therapy of PMS in Lahore" is also being done by me on a large female population from all over the Lahore, belonging to various groups of life and socioeconomic classes. Quality of life of Pakistani adolescent females can be increased by organizing educational programmes on PMS at various levels. Hence Premenstrual syndrome has a substantial social, occupational, academic, and psychological effect on the lives of millions of women (from menarche to menopause) and their families. Management can be done through different methods. Accurate diagnosis, Proper diet, exercise and lifestyle changes along with the services of health care providers who go door to door or at spot can be helpful in relieving premenstrual symptoms, restoring functions and optimizing the overall health of Pakistani women with premenstrual syndrome.

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