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OVERVIEW OF PRE-MENSTRUAL SYNDROME

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Abstract:

Premenstrual Syndrome (PMS) is a prevalent condition affecting women, characterized by a range of physical, emotional, and behavioral symptoms that occur during the luteal phase of the menstrual cycle. These symptoms can significantly impact daily life, particularly in young women and students.

***Aim:** to provide a detailed overview of PMS, its prevalence, symptoms, and management strategies.*

***Method:** This is a comprehensive review of PMS manifestation and management. The PUBMED and Google Scholar search engines were the main databases used for the search process, with articles up to 2022. This thorough review ensures that the information presented is reliable and up-to-date.*

***Conclusion:** PMS includes various symptoms that can greatly affect a woman's life. Emotional symptoms like irritability and depressed mood are key, while cognitive and behavioral aspects also matter. Physical symptoms, though less common, are important for PMS. The diagnosis involves symptom tracking, reviewing medical history, and ruling out other disorders. These steps help healthcare providers to diagnose PMS accurately and customize treatment for individual patients. Effective treatment of PMS requires lifestyle changes, dietary adjustments, stress management, and sometimes medication. A holistic approach with compassionate counseling can greatly improve the lives of those affected, ensuring treatment is effective and tailored.*

***Keywords:** Premenstrual Syndrome (PMS) - Signs – Symptoms - Causes - Risk Factors – Management*

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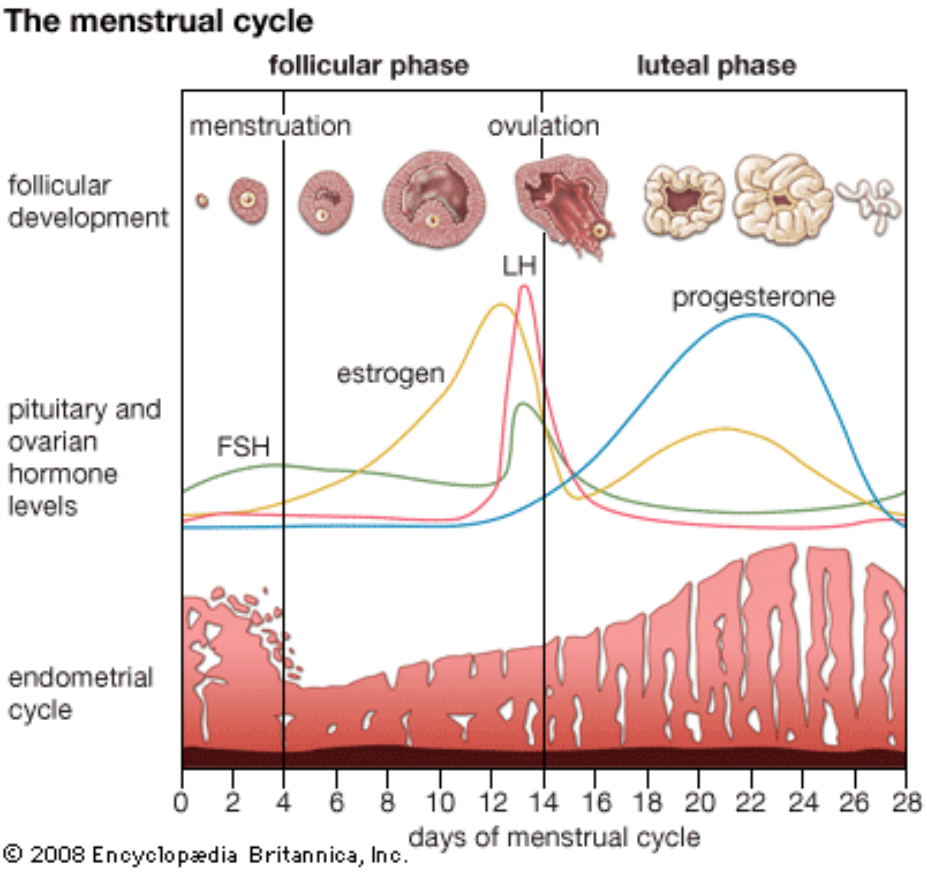
INTRODUCTION:

Pre-menstrual syndrome (PMS) is a prevalent condition affecting approximately 75% of women of childbearing age, characterized by a collection of physical and psychological symptoms that typically arise during the luteal phase of the menstrual cycle, specifically 1 to 2 weeks before menstruation and resolve shortly after the onset of menses. (1) The pathophysiology of PMS is multifaceted, involving hormonal, neurochemical, psychological, and environmental factors. Central to PMS are hormonal fluctuations, particularly in estrogen and progesterone, which occur during the menstrual cycle, especially in the luteal phase following ovulation. (2) On the other hand, Premenstrual Dysphoric Disorder (PMDD); denotes a more severe manifestation of these symptoms, particularly mood disturbances that significantly impair daily functioning. (2-4) Central to the pathophysiology of PMS and PMDD are the gonadal hormones, particularly estrogen and progesterone. These hormones exhibit fluctuations throughout the menstrual cycle, which are implicated in the onset of premenstrual symptoms. Studies have shown that both estrogen and progesterone play crucial roles in the manifestation of these symptoms, suggesting that their levels directly influence the severity of mood disturbances. (2) Furthermore, estrogens have been found to affect serotonin receptors, which may further modulate the emotional symptoms associated with PMS. (5) The serotonergic system is another critical component in understanding the pathophysiology of PMS and PMDD. There is a close reciprocal relationship between gonadal hormones and the serotonergic system, indicating that alterations in serotonin levels may contribute to irritability, anger, and depressive symptoms commonly observed in these disorders. (5, 6) This serotonin dysregulation is particularly relevant, as it has been identified as a plausible target for therapeutic interventions, such as selective serotonin reuptake inhibitors (SSRIs) that have shown efficacy in alleviating symptoms. Recent evidence suggests a genetic component to premenstrual symptoms, indicating a biological basis for their pathophysiology. This heritability implies that some women may be predisposed to experience more severe premenstrual symptoms due to genetic factors, further complicating the interplay between hormonal changes and psychological manifestations.

Figure (1): Normal menstrual cycle



Signs & Symptoms:

Premenstrual Syndrome (PMS) is characterized by a range of emotional, behavioral, and physical symptoms that typically occur in the luteal phase of the menstrual cycle and remit after menstruation begins. (2, 7, 8) The emotional symptoms are particularly significant, as they are the dominant symptoms associated with PMS, including irritability, tension, and depressed mood. Irritability is a common emotional symptom, reflecting mood changes that can lead to increased sensitivity and frustration. Tension, another prevalent emotional symptom, manifests as feelings of stress or anxiety, often exacerbating the overall emotional distress experienced during this phase. Additionally, many women report mood swings, which are rapid changes in emotional state that can occur in the days leading up to menstruation. Cognitive symptoms also play a role in PMS, particularly during the premenstrual phase, where issues such as difficulty concentrating and memory lapses may arise. These cognitive disturbances can further complicate the emotional symptoms, leading to a cycle of increased anxiety and stress. Behavioral symptoms are consistently observed throughout the menstrual cycle, with a notable prevalence in the latter half of the intermenstrual and premenstrual phases. These symptoms include changes in sleep patterns, appetite fluctuations, and social withdrawal. Physical symptoms, while less prevalent than emotional symptoms, are also significant in the context of PMS. These include breast tenderness, bloating, cramps, and headaches, which predominantly load on factor II during the premenstrual phase. The interplay between these physical symptoms and emotional disturbances can exacerbate the overall experience of PMS, making it a multifaceted condition. Understanding these symptoms is essential for effective management and treatment of PMS, which may include lifestyle changes, psychotherapy, and pharmacological interventions.

Causes & Risk Factors:

The etiology of PMS remains largely unknown, but several biological and hormonal factors have been identified as significant contributors to its manifestation. Central to the development of PMS are fluctuations in female sex hormones, particularly estrogen and progesterone. These hormones play a crucial role in the symptomatology of PMS, with

studies indicating that elevated blood estrogen levels and low progesterone levels are particularly associated with the PMT-A subgroup, which includes symptoms such as anxiety and irritability. (2, 9) The hormonal changes that occur during the menstrual cycle, especially in the luteal phase, are believed to trigger these symptoms. (10) In addition to hormonal imbalances, other risk factors have been identified across different PMS subgroups. For instance, the PMT-H subgroup is characterized by elevated serum aldosterone, which is linked to symptoms of water and salt retention, abdominal bloating, and weight gain. (2, 9) Conversely, the PMT-C subgroup exhibits increased carbohydrate tolerance and low red-cell magnesium levels, both of which are associated with symptom severity and glucose metabolism. Furthermore, a deficiency of prostaglandin PGE1 has been suggested as a potential contributing factor in PMT-C, indicating a metabolic aspect to the syndrome. Another subgroup, PMT-D, is marked by elevated adrenal androgens, which can exacerbate symptoms and is associated with a higher risk of severe outcomes, including suicidal behavior. This highlights the importance of understanding the hormonal and metabolic profiles of individuals when assessing risk factors for PMS. Overall, the interplay of hormonal changes, metabolic conditions, and individual biological responses contributes to the complexity of PMS. The recognition of these factors is essential for developing targeted therapeutic strategies and individualized treatment plans for those affected by this condition

Diagnosis:

Diagnosing Premenstrual Syndrome (PMS) involves a systematic approach that includes symptom tracking, medical history assessment, and the exclusion of other potential disorders. The diagnosis is primarily based on the severity of symptoms, which must significantly impair a woman's ability to function in daily life, whether at home, work, or in social relationships. (11, 12) The American College of Obstetricians and Gynecologists published specific diagnostic criteria for PMS in 2000, which serve as guidelines for clinicians. A thorough medical and psychiatric history is essential, as it helps identify the presence and severity of symptoms and any relevant personal or family history of mental disorders. One of the most effective methods for diagnosing PMS is prospective symptom charting, often referred to as the "gold standard." This involves tracking symptoms over time, which can be done through daily ratings or validated instruments for at least two menstrual cycles.(12, 13) This method allows for a clear understanding of the timing and severity of symptoms in relation to the menstrual cycle, which is crucial for establishing a diagnosis. Before confirming a diagnosis of PMS, it is vital to exclude other medical conditions that may present similar symptoms, such as major depression, anxiety, hypothyroidism, and diabetes. (11) A thorough physical examination and basic laboratory tests can help rule out these potential causes. (12)

Treatment:

Treating Premenstrual Syndrome (PMS) involves a multifaceted approach that can be tailored to individual needs and preferences. Key strategies include lifestyle changes, dietary modifications, stress management, and pharmacological treatments.

Lifestyle:

Lifestyle changes are fundamental in alleviating PMS symptoms. These modifications can encompass regular physical activity, adequate sleep, and the establishment of a consistent daily routine, which collectively contribute to overall well-being and symptom relief. (12, 14) Additionally, diet changes play a crucial role; incorporating a balanced diet rich in whole foods, fruits, and vegetables can help mitigate symptoms associated with PMS. Nutritional supplementation may also be beneficial, as it can lead to significant improvements in symptoms, even though dietary deficiencies are often hard to demonstrate. Stress management techniques are essential for addressing the psychological aspects of PMS. Approaches such as mindfulness, yoga, and relaxation exercises can help reduce stress responses and enhance relaxation, which is vital for managing premenstrual tension. Cognitive therapy can further assist patients in developing effective coping strategies for the emotional challenges posed by PMS.

Pharmacological Treatments:

In cases where lifestyle and dietary changes are insufficient, pharmacological treatments may be necessary. Medications such as oral contraceptive agents can help regulate hormonal fluctuations, thereby alleviating symptoms. (14, 15) Diuretics may be prescribed to reduce fluid retention, while antidepressants can effectively manage mood-related symptoms. It is important to note that these medications should be considered in conjunction with lifestyle modifications for a comprehensive treatment plan. Selective serotonin reuptake inhibitors (SSRIs) are commonly used as a first-line treatment for PMS. However, other medications that suppress ovulation, such as gonadotropin-releasing hormone agonists, have also shown efficacy, albeit with potential health risks like low estrogen levels. (16) Providing supportive and understanding counseling helps

patients navigate their symptoms and determine the most effective treatment approach tailored to their individual circumstances. This personalized care is essential, as PMS can vary significantly in its presentation and impact on daily life.

CONCLUSION:

PMS includes various symptoms that can greatly affect a woman's life. Emotional symptoms like irritability and depressed mood are key, while cognitive and behavioral aspects also matter. Physical symptoms, though less common, are important for PMS. The diagnosis involves symptom tracking, reviewing medical history, and ruling out other disorders. These steps help healthcare providers to diagnose PMS accurately and customize treatment for individual patients. Effective treatment of PMS requires lifestyle changes, dietary adjustments, stress management, and sometimes medication. A holistic approach with compassionate counseling can greatly improve the lives of those affected, ensuring treatment is effective and tailored.

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