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The Pathology of Premenstrual Syndrome: Unraveling the Mysteries

Muralinath.E[1] , Sony Sharlet.E[2] , Sravani Pragna.K[1], Kalyan.C[1], Vinayasree.C[3], Guru Prasad.M[4], Venkat Navven. A[5] , Sravani. K[6], Archana Jain[7]

[1]College of Veterinary Science, Proddatur, Andhra Pradesh, India
[2]College of Veterinary Science, Tirupati, , Andhra Pradesh, India.
[3]College of veterinary science, Korutla, PVNRTVU, Telangana, India.
[4]Vaishnavi microbial Phama pvt.ltd, Hyderabad, India
[5]Technical Sales Officer, Vijayawada, Andhra Pradesh, India
[6]Veterinary Officer, Nuzivedu, Andhra Pradesh, India
[7]Prof and Head, Dept. of Vety Physiology and Biochemistry, veterinary college, Jabalpur, Madhya Pradesh, 8India
[8]M.V.Sc Scholar, NTR college of veterinary science, SVVU, Gannavaram, Andhra Pradesh, India
Corresponding author : muralinathennamuri@gmail.com

Abstract:

Pre menstrual syndrome (PMS) is a combination of emotional, physical and psychological symptoms. Hormones exhibit a major role in the development of PMS. The menstrual cycle is controlled by a delicate balance of Hormones specifically estrogen and progesterone, The fluctuations in the Hormones result in the onset of PMS symptoms. These Hormonal changes can impact neurotransmitter and receptors in the brain, resulting in the mood swings, irritability and emotional disturbances often linked to PMS. Serotonin, a neurotransmitter, is responsible for controlling mood particularly during the PMS, Hormonal functions result in alterations in Serotonin levels, which may contribute to symptoms namely anxiety, depression and irritability. The interplay between hormones and neurotransmitters in the CNS leads to the occurrence if a key aspect of PMS pathology. An enhanced levels of inflammatory markers namely C_ reactive protein (CRP) may be linked to severe PMS symptoms. An inflammatory process result in physical symptoms namely bloating, breast tenderness and headaches. Some individuals, due to genetic characters , may be predisposed to experiencing more severe PMS symptoms. Lack of exercise, poor diet, stress and other environmental factors can aggravate the condition also. Treatment us based on Hormonal birth control, selective Serotonin reuptake inbitors (SSRIs) and non steroidal anti_ inflammatory drugs (NSAIDs) that can manage specific symptoms. It is finally concluded that PMS is a multifaceted situation with a complex physiology. Genetic factors, Hormonal fluctuations, imbalances and neurotransmitters play a role in the development and severity of PMS symptoms.

Key Words: Emotional, physical as well as psychological symptoms, menstrual period, estrogen, progesterone, neurotransmitters, receptors, mood swings, irritability, Serotonin, anxiety, depression, C_ reactive protein (CRP), bloating, breast tenderness, headaches, regular exercise, poor diet, stress, balanced diet, Hormonal birth control, selective Serotonin reuptake inhibitors (SSRIs) and non steroidal anti_ inflammatory drugs (NSAIDs).

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Introduction

Premenstrual Syndrome (PMS) is a collection of physical, emotional, and psychological symptoms that many menstruating individuals experience in the days leading up to their menstrual period. While PMS is a common phenomenon, its underlying pathology is complex and not fully understood. In this article, we will delve into the pathology of PMS, exploring the various factors and mechanisms that contribute to its development and manifestations.

The Role of Hormones

Hormones play a central role in the development of PMS. The menstrual cycle is regulated by a delicate balance of hormones, primarily estrogen and progesterone. These hormones fluctuate throughout the month, and it is these fluctuations that can lead to the onset of PMS symptoms. During the luteal phase of the menstrual cycle (the second half), progesterone levels rise. These hormonal changes can affect neurotransmitters and receptors in the brain, leading to mood swings, irritability, and emotional disturbances often associated with PMS.

Neurotransmitters and the Brain

The brain is a significant player in the pathology of PMS. Serotonin, a neurotransmitter responsible for regulating mood, is often impacted during the premenstrual phase. It is believed that hormonal fluctuations can lead to alterations in serotonin levels, which may contribute to symptoms such as irritability, anxiety, and depression. The interplay between hormones and neurotransmitters in the central nervous system is a key aspect of PMS pathology.

Inflammatory Factors

In recent years, research has highlighted the role of inflammation in PMS. Inflammation is the body's natural response to various stressors, and it can also be triggered by hormonal changes. Some studies suggest that elevated levels of inflammatory markers, such as C-reactive protein (CRP), may be associated with more severe PMS symptoms. Inflammatory processes can contribute to physical symptoms such as breast tenderness, bloating, and headaches.

Genetic and Environmental Factors

While hormones, neurotransmitters, and inflammation are key components of PMS pathology, it’s important to acknowledge that individual genetic and environmental factors also play a role. Some individuals may be genetically predisposed to experiencing more severe PMS symptoms. Stress, poor diet, lack of exercise, and other environmental factors can exacerbate the condition.

Treatment and Management

Understanding the pathology of PMS is crucial for developing effective treatments and management strategies. While there is no one-size-fits-all approach, various methods can alleviate PMS symptoms. Lifestyle changes, such as maintaining a balanced diet, regular exercise, and stress reduction, can help. Additionally, medications like hormonal birth control, selective serotonin reuptake inhibitors (SSRIs), and nonsteroidal anti-inflammatory drugs (NSAIDs) can be prescribed to manage specific symptoms.

Conclusion

Premenstrual Syndrome is a multifaceted condition with a complex pathology. Hormonal fluctuations, neurotransmitter imbalances, inflammation, and genetic factors all contribute to the development and severity of PMS symptoms. Understanding the underlying mechanisms of PMS

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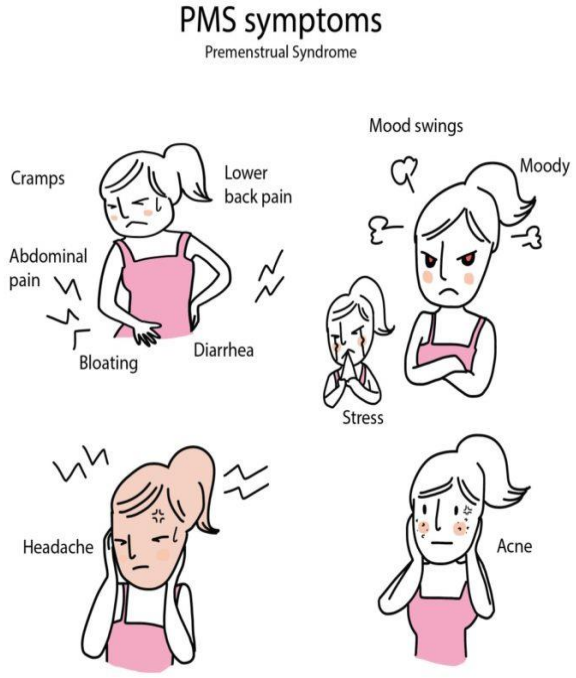
is crucial for the development of effective treatments and management strategies. While there is no cure for PMS, individuals can work with healthcare professionals to find a personalized approach that helps them lead a more comfortable and fulfilling life throughout their menstrual cycle.



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