

## **PREMENSTRUAL SYNDROME (PMS): A NATURAL INDICATOR, INDICATES THE START OF WOMANHOOD**

**<sup>1</sup>\*Dr. Kishor Dholwani, <sup>2</sup>Kushal Nandi, <sup>2</sup>Suprodip Mondal, <sup>2</sup>Dr. Dhrubo Jyoti Sen,  
<sup>2</sup>Dr. Beduin Mahanti and <sup>3</sup>Dr. Dhananjoy Saha**

<sup>1</sup>Laxminarayandev College of Pharmacy, Narmada nagar, Beside Swaminarayan School,  
Bholav, Bharuch, Gujarat, India.

<sup>2</sup>Department of Pharmaceutical Chemistry, School of Pharmacy, Techno India University,  
Salt Lake City, Sector-V, EM-4, Kolkata-700091, West Bengal, India.

<sup>3</sup>Deputy Director, Directorate of Technical Education, Bikash Bhavan, Salt Lake City,  
Kolkata-700091, West Bengal, India.

Article Received on  
21 March 2021,

Revised on 11 April 2021,  
Accepted on 01 May 2021

DOI: 10.20959/wjpr20215-20501

### **\*Corresponding Author**

**Dr. Kishor Dholwani**

Laxminarayandev College  
of Pharmacy, Narmada  
nagar, Beside  
Swaminarayan School,  
Bholav, Bharuch, Gujarat,  
India.

### **ABSTRACT**

Premenstrual syndrome (PMS) is a combination of emotional, physical, and psychological disturbances that occur after a woman's ovulation, typically ending with the onset of her menstrual flow. The most common mood-related symptoms are irritability, depression, crying, oversensitivity, and mood swings. Premenstrual syndrome (PMS) has a wide variety of signs and symptoms, including mood swings, tender breasts, food cravings, fatigue, irritability and depression. It's estimated that as many as 3 of every 4 menstruating women have experienced some form of premenstrual syndrome. A more severe form of PMS, known as premenstrual dysphoric disorder (PMDD), also known as late luteal phase dysphoric disorder, occurs in a smaller number of women and leads to significant loss of

function because of unusually severe symptoms. The American Psychiatric Association characterizes PMDD as a severe form of PMS in which anger, irritability, and anxiety or tensions are especially prominent. Symptoms tend to recur in a predictable pattern. But the physical and emotional changes they experience with premenstrual syndrome may vary from just slightly noticeable all the way to intense. Still, women don't have to let these problems control their lives. Treatments and lifestyle adjustments can help them reduce or manage the signs and symptoms of premenstrual syndrome.

**KEYWORDS:** Mood Swing, Acne, Headache, Frustration, OCP's, Exercise.

## INTRODUCTION



**Figure 1: Mood Swing.**

Premenstrual syndrome (PMS) refers to emotional and physical symptoms that regularly occur in the one to two weeks before the start of each menstrual period. Symptoms resolve around the start of bleeding. Different women experience different symptoms. The common emotional symptoms include irritability and mood changes while the common physical symptoms include acne, tender breasts, bloating, and feeling tired; these are also seen in women without PMS. Often symptoms are present for around six days. An individual's pattern of symptoms may change over time. Symptoms do not occur during pregnancy or following menopause.<sup>[1]</sup> Diagnosis requires a consistent pattern of emotional and physical symptoms occurring after ovulation and before menstruation to a degree that interferes with normal life. Emotional symptoms must not be present during the initial part of the menstrual cycle. A daily list of symptoms over a few months may help in diagnosis. Other disorders that cause similar symptoms need to be excluded before a diagnosis is made. The cause of PMS is unknown. Some symptoms may be worsened by a high-salt diet, alcohol, or caffeine. The underlying mechanism is believed to involve changes in hormone levels. Reducing salt,

caffeine, and stress along with increasing exercise is typically all that is recommended in those with mild symptoms. Calcium and vitamin D supplementation may be useful in some. Anti-inflammatory drugs such as naproxen may help with physical symptoms.<sup>[2]</sup> In those with more significant symptoms birth control pills or the diuretic spironolactone may be useful. Up to 80% of women report having some symptoms prior to menstruation. These symptoms qualify as PMS in 20 to 30% of pre-menopausal women. Premenstrual dysphoric disorder (PMDD) is a more severe form of PMS that has greater psychological symptoms. PMDD affects three to eight percent of pre-menopausal women. Antidepressant medication of the selective serotonin reuptake inhibitors class may be used for PMDD in addition to the usual measures for PMS.<sup>[3]</sup>

**How many women suffer from PMS:** About 90% of women experience premenstrual symptoms at some point in their lifetime. The true incidence of PMS has often been overestimated by including all women who experience any physical or emotional symptoms prior to menstruation. It is estimated that clinically significant PMS (which is moderate to severe in intensity and affects a woman's functioning) occurs in 20% to 30% of women. It is generally most severe in women in their 4th decade of life. About 3% to 8% of women are believed to have the condition.<sup>[4]</sup>

**Signs And Symptoms:** A great variety of symptoms have been attributed to PMS. Women can have PMS of varying duration and severity from cycle to cycle. The most frequent mood-related symptoms of PMS include;

- Anger and irritability,
- Anxiety,
- Tension,
- Depression,
- Crying,
- Oversensitivity, and
- Exaggerated mood swings.

**The most frequent physical signs and symptoms of PMS include**

- Fatigue,
- Bloating (due to fluid retention),
- Weight Gain,

- Breast tenderness,
- Acne: Acne is one of the most common signs of PMS, and it doesn't just affect teenagers. Hormonal changes can cause glands in the skin to produce more sebum. This oily substance may clog the pores, triggering a breakout -- a visible reminder that your period is on its way.
- Sleep disturbances with sleeping too much or too little (insomnia), and
- Appetite changes with overeating or food cravings: Many women get specific cravings when PMS strikes, often for sweet or salty foods like chocolate cake. The reasons for this aren't really clear. Other women may lose their appetite or get an upset stomach. Bloating and constipation are also common.<sup>[5]</sup>
- PMS can trigger a wide range of aches and pains, including:
  - Back pain
  - Headaches
  - Tender breasts
  - Joint pain

**PMS Vs Pregnancy Syndrome:** A great variety of symptoms have been attributed to PMS. Women can have PMS of varying duration and severity from cycle to cycle. The most frequent mood-related or psychological symptoms of PMS include:

- Anger
- Irritability
- Anxiety
- Tension
- Difficulty concentrating
- Depression
- Crying
- Social withdrawal
- Changes in libido (sex drive)
- Oversensitivity
- Exaggerated mood swings

**The most frequent physical signs and symptoms of PMS include**

- Fatigue
- Headache

- Bloating (due to fluid retention)
- Weight gain
- Musculoskeletal pain
- Breast tenderness
- Constipation
- Diarrhea
- Acne flare-ups
- Sleep disturbances with sleeping too much or too little (insomnia)
- Appetite changes with overeating or food cravings

**Symptoms & Sign lasting duration:** The duration of PMS varies among women. Most women experience the symptoms for a few to several days in the week prior to the onset of their menstrual period. Some women may have symptoms for a shorter or longer time period, but symptoms of PMS typically start after ovulation (the mid-point in the monthly menstrual cycle).

**Cause Of PMS:** PMS remains an enigma because of the wide-ranging symptoms and the difficulty in making a firm diagnosis. Several theories have been advanced to explain the cause of PMS. None of these theories have been proven, and specific treatment for PMS still largely lacks a solid scientific basis. Most evidence suggests that PMS results from the alterations in or interactions between the levels of sex hormones and brain chemicals known as neurotransmitters.

PMS does not appear to be specifically associated with any personality factors or specific personality types. Likewise, a number of studies have shown that psychological stress is not related to the severity of PMS.<sup>[6]</sup>

### **Conditions That are Mimics PMS**

**Some examples of medical conditions that can mimic PMS include**

- Depression
- Cyclic water retention (idiopathic edema)
- Chronic fatigue
- Hypothyroidism
- Irritable bowel syndrome (IBS)

The hallmark of the diagnosis of PMS is that symptom-free interval after the menstrual flow and prior to the next ovulation. If there is no such interval and the symptoms persist throughout the cycle, then PMS may not be the proper diagnosis. PMS can still be present and aggravate symptoms related to the other conditions, but it cannot be the sole cause of constant or non-cyclic symptoms. Blood or other tests may be ordered to help rule out other potential causes of symptoms.

### Diagnostic test of PMS

April 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4 M Cramps	5 H	6 H Cramps
7 H	8 H Cramps; took 200mg ibuprofen	9 H Cramps; took 200mg Motrin	10 H	11 M Cramps; took 400mg ibuprofen	12 M/L	13 L
14 L	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

**Figure 2: Menstrual Diary.**

The most helpful diagnostic tool is the menstrual diary, which documents physical and emotional symptoms over months. If the changes occur consistently around ovulation (mid-menstrual cycle) and persist until the menstrual flow begins, then PMS is probably the accurate diagnosis. Keeping a menstrual diary not only helps the health-care professional to make the diagnosis, but also promotes a better understanding by the patient of her own body and moods. Once the diagnosis of PMS is made and understood, the patient can better cope with the symptoms.<sup>[7]</sup>

The diagnosis of PMS can be difficult because many medical and psychological conditions can mimic or worsen symptoms of PMS. There are no blood or laboratory tests to determine

if a woman has PMS. When laboratory tests are performed, they are used to exclude other conditions that can mimic PMS.

**Treatment of PMS:** The treatment of PMS can sometimes be as challenging as making the diagnosis of PMS. Various treatment approaches have been used to treat this condition. Some measures lack a solid scientific basis but seem to help some women. Other treatments with a sound scientific basis may not help all patients.

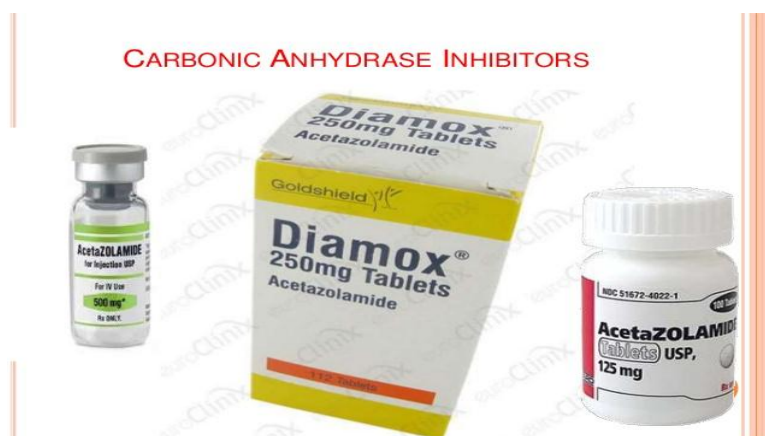
**General management includes a healthy lifestyle including**

- Exercise
- Emotional support during the premenstrual period
- Salt restriction before the menstrual period
- Decreased caffeine intake prior to menstruation
- Smoking cessation
- Limitation of alcohol intake
- Reduction of refined sugar intake

**Possible natural and herbal remedies:** A variety of medications are used to treat the different symptoms of PMS. Medications include diuretics, analgesics, oral contraceptives, antidepressants, and drugs that suppress ovarian function.

**Diuretics:** Diuretics are medications that increase the rate of urine production, thereby eliminating excess fluid from the body tissues. Several nonprescription menstrual products (including Diurex PMS, Lurline PMS, Midol PMS, Pamprin Multisymptom and Premesyn PMS) contain diuretics, and either caffeine or pamabrom. Spironolactone (Aldactone) is a prescription diuretic that has been widely used to treat premenstrual swelling of the hands, feet and face. Unfortunately, it has not been effective in all patients.<sup>[8]</sup>





**Figure 3: Diuretics.**

**Pain killers (analgesics):** These are commonly given for menstrual cramps, headaches, and pelvic discomfort. The most effective group of analgesics appears to be the nonsteroidal anti-inflammatory drugs (NSAIDs).

Examples include ibuprofen (Advil, Motrin), naproxen (Aleve, Anaprox), and mefenamic acid (Ponstel).

**Benzodiazepines:** The benzodiazepine alprazolam (Xanax) has been shown in some studies to relieve the depressive symptoms of PMS or PMDD. However, this drug is not considered a first-line treatment for these conditions because of its addictive potential.

**Oral contraceptive pills (OCPs):** OCPs are sometimes prescribed to even out ovarian hormone fluctuations. While older studies failed to provide evidence that oral contraceptive pills can consistently provide relief for symptoms of PMS, the newer birth control pills, with their improved hormonal formulations, seem to be more beneficial for many women. Oral contraceptive pills containing the progestin drospirenone have been approved by the FDA for the treatment of PMS and premenstrual dysphoric disorder (PMDD).



**Figure 4: OCP's.**



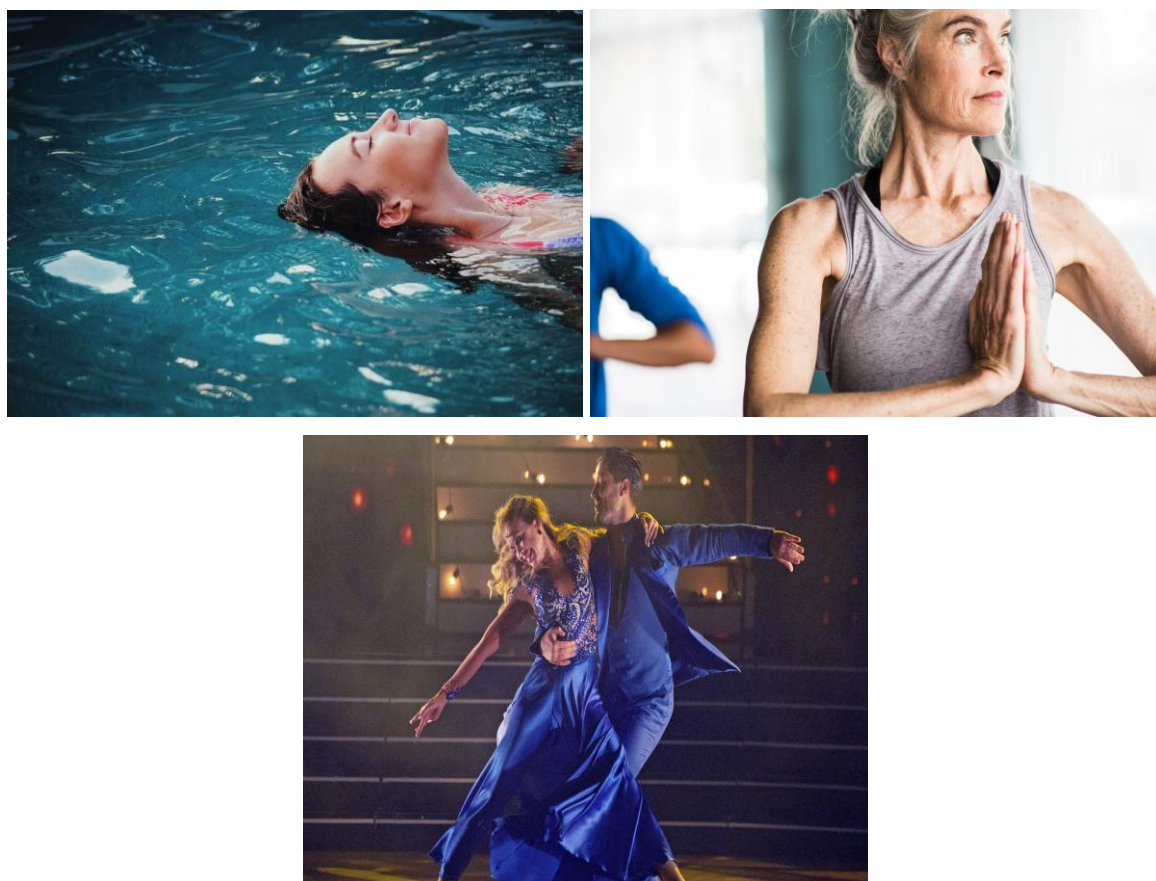
**Ovarian suppressors:** Drugs like danazol (Danocrine) have been prescribed to suppress ovarian hormone production. Unfortunately, Danocrine cannot be used over long periods because of side effects.

**Gonadotropin-releasing hormone (GnRH):** Complete suppression of ovarian function by a group of drugs called gonadotropin-releasing hormone (GnRH) analogs has been found to help some women with PMS. These GnRH analogs are not given over the long term (more than six months) because of their potential for adverse effects on bone density causing an increased risk of bone thinning (osteoporosis). In some cases these drugs may be prescribed along with hormone supplementation.<sup>[9]</sup>

**Antidepressants:** These are widely used in treating the mood disturbances related to PMS. Antidepressants appear to work by increasing brain chemical (opioids, serotonin, and others) levels that are affected by the ovarian hormones. These neurotransmitters are important in the control of mood and emotions. The serotonin reuptake inhibitor group of antidepressants seems to be the most effective for symptoms of PMS. Fluoxetine (Prozac) and paroxetine (Paxil) are examples of antidepressant medications from this group that have been found to be effective in treating the mood changes associated with PMS.

**What exercises relieves PMS Pain and other symptoms?** Evidence suggests that exercise can help relieve some of the symptoms of PMS in adolescents and young women. Physical activity improves general health and helps relieve nervous tension and anxiety. Exercise is believed to release endorphins. Endorphins contribute to euphoric feelings such as the "runner's high" experienced after prolonged exercise. Endorphins are chemical messengers for nerves (neurotransmitters) that affect mood, perception of pain, memory retention and learning.<sup>[10]</sup>

"Low-impact" aerobic exercises are less stressful on the joints and avoid the muscle and joint pounding of more "high-impact" exercises like jogging and jumping rope. Benefits of exercise for PMS pain and other symptoms include:



**Figure 5: Probable exercise that helps to get rid from PMS.**

- Cardiovascular fitness
- Muscle tone
- Weight loss or control
- Decreases fluid retention
- Aerobic exercise strengthens the heart and improves overall fitness by increasing the body's ability to use oxygen.
- Swimming
- Walking
- Dancing

## CONCLUSION

Widespread recognition of PMS has attracted a broad range of research interest in the treatment and management of the symptoms of PMS. Although there is no "cure" for PMS at this time, there are many options for managing its signs and symptoms. The first priority is an accurate diagnosis. Other medical or psychological conditions should be identified and treated. Proper diet, exercise, and lifestyle changes can improve overall health and thereby

lead to the reduction of symptoms. If these measures are not effective, over-the-counter or prescription, medications may be indicated. Most women can control their PMS symptoms successfully and continue to lead healthy and productive lives.

## REFERENCES

1. "Premenstrual syndrome (PMS) fact sheet". Office on Women's Health. December 23,
2. Biggs, WS; Demuth, RH. "Premenstrual syndrome and premenstrual dysphoric disorder". American Family Physician, 2011; **84**(8): 918–24.
3. Dickerson, Lori M.; Mazyck, Pamela J.; Hunter, Melissa H. "Premenstrual Syndrome". American Family Physician, 2003; **67**(8): 1743–52.
4. "Merck Manual Professional - Menstrual Abnormalities", November 2005.
5. Johnson S, PHD. "Premenstrual Syndrome (Premenstrual Tension)". Menstrual Abnormalities and Abnormal Uterine Bleeding. Armenian Health Network, Health.am.
6. "MayoClinic.com: Premenstrual syndrome (PMS): Signs and symptoms". MayoClinic.com, 2006-10-27.
7. Rapkin, Andrea J; Lewis, Erin I. "Treatment of Premenstrual Dysphoric Disorder". Women's Health, 2013; **9**(6): 537–56.
8. Koeppen, Bruce M.; Stanton, Bruce A. Berne & Levy physiology (6th ed.). Elsevier, 2008; 790.
9. Marjoribanks J, Brown J, O'Brien PM, Wyatt K; Brown; O'Brien; Wyatt. "Selective serotonin reuptake inhibitors for premenstrual syndrome" (PDF). The Cochrane Database of Systematic Reviews, Jun 7, 2013; 6: CD001396.
10. "Low Doses Of Anti-depressant May Help Some Women Suffering From Moderate-to-severe PMS". Sciencedaily.com, 2006-10-14.