

## **A Review of Premenstrual Syndrome: Comparative Insights from Contemporary and Ayurvedic Perspectives**

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**ABSTRACT**

**Introduction:** Premenstrual Syndrome (PMS) is a common condition affecting women of reproductive age, characterized by a variety of physical, psychological, and behavioral symptoms occurring in the luteal phase of the menstrual cycle. The severity of PMS varies, with some women experiencing mild symptoms and others suffering from significant functional impairment. The management of PMS remains challenging, with both biomedical and Ayurvedic treatments offering different approaches to symptom alleviation.

**Methods:** This review synthesizes the causes, pathophysiology, and treatment options for PMS from both biomedical and Ayurvedic perspectives. Biomedically, treatments range from SSRIs, NSAIDs, and oral contraceptives, to GnRH agonists. Ayurvedic treatments focus on balancing the Vāta, Pitta, and Kapha doshas using herbal remedies, dietary modifications, and lifestyle changes.

**Results:** Biomedical treatments provide effective symptomatic relief, particularly for mood disturbances and pain, but come with side effects and long-term management challenges. Ayurvedic therapies, based on individualized treatment plans, emphasize the restoration of balance within the body's natural energies, with Shatavari, Trikatu, and Yoni Prakṣāḷana showing promise in alleviating PMS symptoms.

**Discussion:** An integrated approach combining both biomedical and Ayurvedic treatments offers a more holistic approach to managing PMS, addressing both immediate symptom relief and long-term health maintenance. Further research is needed to validate the efficacy of Ayurvedic treatments through clinical trials.

**Introduction**

Premenstrual Syndrome (PMS) is a complex condition affecting a significant number of women, marked by a combination of physical, psychological, and behavioral symptoms. These symptoms manifest in the luteal phase of the menstrual cycle, typically resolving with the onset of menstruation [1]. Girls usually experience their first menstrual cycle between the ages of 11 and 14 years, and a considerable number report emotional

swings, bloating, water retention, and pain in the abdomen, back, or legs during the latter half of the cycle [2]. Typical timing for the development of symptoms is after day 13 of the menstrual cycle, although PMS symptoms may occur at any time while a woman is fertile [3].

The term "Premenstrual Tension" was first used by Frank in 1931, and Greene and Dalton later coined the term "Premenstrual

Syndrome" in 1953 to describe the varied manifestations beyond just mood changes [4]. Internationally, approximately 47.8% of women of reproductive age experience PMS, with around 20% reporting symptoms severe enough to disrupt daily activities [5]. Common symptoms include appetite changes, weight gain, backache, headache, breast tenderness, nausea, constipation, irritability, anxiety, mood swings, fatigue, and crying spells [1]. PMS has also been associated with increased risks of accidents, low work and school attendance, poor academic performance, and psychiatric disorders [6]. The more severe form, premenstrual dysphoric disorder (PMDD), is recognized as a psychiatric condition.

The pathophysiology of PMS is multifactorial, involving hormonal fluctuations—particularly of estrogen and progesterone—and alterations in neurotransmitters such as serotonin and gamma-aminobutyric acid (GABA), contributing to both physical and mood-related symptoms [2]. Initial management focuses on maintaining regular daily routines, balanced nutrition, and lifestyle adjustments [7]. Pharmacological therapy, primarily using selective serotonin reuptake inhibitors (SSRIs), is reserved for severe symptoms, while nonpharmacological

approaches remain first-line for mild to moderate cases [8].

In contrast, Ayurveda emphasizes the balance of body energies (doshas) and tissues (dushyas) rather than categorizing diseases by name. PMS is predominantly considered a Vāta imbalance affecting menstrual and mental channels. Ayurvedic management includes individualized diet, herbal formulations, and lifestyle modifications, offering a holistic and personalized approach to care [9].

### **Causes**

The etiology of Premenstrual Syndrome (PMS) remains multifactorial and complex. Hormonal fluctuations during the luteal phase, particularly changes in oestrogen and progesterone levels, are considered primary contributors to the development of PMS [10]. An excess of oestrogen or a deficiency of progesterone may disrupt neurotransmitter function, leading to mood disturbances and other common PMS symptoms such as irritability, fatigue, and anxiety [10].

Recent research also implicates serotonin levels in the pathophysiology of PMS. Decreased serotonin activity, particularly in the luteal phase, is associated with mood changes, fatigue, and sleep disturbances. Additionally, alterations in dopamine and

GABA systems have been observed, further complicating symptomatology [10, 11].

Dietary and lifestyle factors are also significant contributors to PMS. High consumption of sugar, caffeine, and processed foods can exacerbate symptoms, leading to fluid retention, gastrointestinal discomfort, and mood swings [8, 10]. Conversely, a sedentary lifestyle and chronic stress are frequently linked to the onset and severity of PMS, with stress being known to influence the hypothalamic-pituitary-adrenal (HPA) axis, thereby worsening symptoms [12].

From an Ayurvedic perspective, PMS is attributed to the imbalance of Vāta dosha. The disturbance in Vāta begins in the Purīṣavāha Srotas (digestive channels) and, if unresolved, spreads to the Rasavāha Srotas (nutrient channels) and Raktavāha Srotas (blood channels), eventually affecting the Ārtavavāha Srotas (channels of menstruation) [9]. Vāta in combination with Pitta and Kapha leads to disturbances in both the Manovāha Srotas (mental channels) and the Rasadhātu (nutrient tissues), causing hallmark symptoms such as emotional disturbances, irritability, and physical discomfort [9]. The root cause of PMS in Ayurveda is thought to lie in Agnimandhya (weak digestive fire) and the vitiation of Vāta

due to poor diet, stress, and lack of exercise [9].

### **Pathophysiology**

The pathophysiology of PMS is complex and not fully understood. It involves the interplay of hormonal fluctuations, neurotransmitter imbalances, and inflammatory processes. The luteal phase of the menstrual cycle, characterized by a decrease in progesterone and an increase in oestrogen, is when symptoms are most pronounced [10, 11]. The imbalance in these hormones triggers changes in the brain's neurotransmitter systems, particularly in serotonin, dopamine, and GABA [10, 11]. Serotonin deficiency has been associated with mood disturbances, irritability, and anxiety, hallmark features of PMS [10].

Neurobiological studies have shown that serotonin levels fluctuate throughout the menstrual cycle, with a marked decrease during the luteal phase, contributing to mood swings, fatigue, and changes in appetite [10]. Additionally, HPA axis activation due to hormonal changes may exacerbate symptoms such as sleep disturbances and increased emotional reactivity [12].

From an Ayurvedic perspective, the pathophysiology of PMS is viewed through the lens of Doṣa imbalance, specifically Vāta [9]. Vāta aggravation starts in the Purīṣavāha

Srotas (digestive channels) and overflows into the Rasavāha Srotas (nutrient channels), Raktavāha Srotas (blood channels), and eventually the Ārtavavāha Srotas (menstrual channels), causing fluid retention, bloating, and pain. The disturbance of Vāta in the Manovāha Srotas (mental channels) manifests as mood swings, anxiety, and irritability. Pitta contributes by increasing inflammation, anger, skin irritation, and headaches [9, 13], while Kapha is responsible for bloating, water retention, and lethargy [9, 14].

### **Ayurvedic Samprapti**

The Ayurvedic Samprapti (pathogenesis) of PMS begins with an imbalance in the Doṣas—Vāta, Pitta, and Kapha—each contributing differently to the syndrome [9]. Vāta accumulates in the Purīṣavāha Srotas (digestive channels) and spreads to Rasavāha (nutrient channels), Raktavāha (blood channels), and Ārtavavāha Srotas (menstrual channels), creating the physical symptoms such as pelvic pain, bloating, and gastrointestinal disturbances.

Pitta contributes to emotional symptoms, particularly irritability, mood swings, and anger, by overflowing into Rasavāha and Raktavāha Srotas, causing heat in the body that manifests as skin issues like acne and headaches [9, 13]. Kapha

contributes to fluid retention, weight gain, and lethargy by accumulating in the Ambuvāha Srotas (water channels), leading to bloating, swelling, and fatigue [9, 14].

The Ayurvedic approach focuses on restoring Doṣa balance by soothing Vāta, reducing Pitta, and balancing Kapha through diet, herbal remedies, lifestyle modifications, and physical therapies. The goal is to treat the underlying imbalance rather than just the symptoms [9, 15].

### **Diagnosis**

The diagnosis of Premenstrual Syndrome (PMS) primarily relies on the identification of characteristic symptoms that occur in the luteal phase of the menstrual cycle. As PMS is a clinical diagnosis, there are no definitive laboratory tests or imaging studies for its identification. The diagnosis is typically made based on the patient's history, symptom patterns, and the exclusion of other conditions that might present with similar symptoms [16].

In clinical practice, PMS is diagnosed by ruling out other conditions such as endometriosis, dysmenorrhea, hypothyroidism, anemia, and psychiatric disorders like depression and anxiety. PMS may also worsen some pre-existing health conditions, including asthma, allergies, and migraines [17].

## Prognosis

The prognosis of PMS varies depending on the severity of symptoms and the effectiveness of the treatment approach. Many interventions provide temporary relief, but symptoms often recur once treatment stops. Hormone-based treatments, such as oral contraceptives, or medications that target symptoms, such as SSRIs or NSAIDs, may temporarily alleviate the symptoms. Oophorectomy or menopause can permanently alter hormone levels, often resulting in resolution of PMS; however, not all symptoms may completely disappear [18].

## Complications

Untreated PMS can significantly impact quality of life, affecting personal, social, and professional functioning [19]. Severe PMS or PMDD has been linked with a higher risk of suicidality, particularly in hormone-sensitive women [20].

## Therapeutic Treatment

Treatment depends on symptom severity:

<b>Lifestyle</b>	<b>Modifications</b>
For minimal symptoms, lifestyle changes—such as stress management, diet modification, and moderate exercise—can be sufficient [7].	

## Pharmacological Therapy

- **NSAIDs:** Non-addictive pain management (e.g., naproxen, ibuprofen) [21, 24, 25]
- **SSRIs:** For mood-related symptoms (e.g., fluoxetine, sertraline, fluvoxamine) [29, 30]
- **Combined oral contraceptives:** To regulate hormonal fluctuations [28]
- **GnRH agonists:** For severe PMS/PMDD (e.g., leuprolide, goserelin) [29]
- **Diuretics:** To manage fluid retention (e.g., spironolactone) [29]

## Non-Pharmacological Therapy

- **Reflexology:** Effective for stress and PMS symptom reduction [22]
- **Acupressure:** Can provide symptomatic relief [23]
- **Cognitive Behavioral Therapy (CBT):** Helps in identifying and modifying behavior patterns [27]
- **Exercise & Diet:** Complex carbohydrates can raise serotonin precursor levels, aiding mood regulation [26]

**Table 1: Contemporary Treatment of PMS**

Therapy	Example
NSAIDs [24,25]	Naproxen, Sodium (Anaprox)
Regular Exercise & Healthy Diet [26]	Complex carbohydrates to increase serotonin precursor
Cognitive Behavioral Therapy (CBT) [27]	Assists in identifying behaviors and developing coping strategies
Combined Oral Contraceptives [28]	Ethinyl estradiol & Drospirenone
SSRIs [29, 30]	Fluoxetine (Sarafem), Sertraline (Zoloft)
GnRH Agonists [29]	Leuprolide (Lupron), Goserelin (Zoladex)
Diuretics [29]	Spironolactone

### Ayurvedic Treatment

Ayurveda offers a more holistic approach to treating PMS, focusing on balancing the Doṣas (Vāta, Pitta, Kapha) and restoring harmony within the body's natural energies. Ayurvedic treatments aim to address the root cause of the condition rather than merely alleviating symptoms. The Ayurvedic treatment for PMS involves a combination of herbal remedies, dietary modifications, lifestyle changes, and therapeutic interventions.

#### 1. Drugs:

- Shatavari (Asparagus racemosus) is one of the most widely used herbs in Ayurveda for supporting female reproductive health. It acts as a reproductive tonic, helping to balance Vāta and Pitta, and is commonly used to treat pelvic pain and irregular menstruation.

- Trikatu (a blend of Piper longum, Zingiber officinale, and Piper nigrum) is used to improve digestion, relieve abdominal bloating, and alleviate gastrointestinal discomfort, which are common PMS symptoms.
- Ashoka (Saraca asoca) is another powerful herb used for its anti-inflammatory and analgesic properties. It helps in reducing pelvic pain, cramps, and breast tenderness associated with PMS.

#### 2. Dietary Modifications:

- Mithyā Ahāra (inappropriate diet) is considered a major factor in the aggravation of Vāta and Pitta. Women with PMS are encouraged to avoid heavy, oily, and spicy foods,

as well as processed sugars and caffeine, which can exacerbate symptoms.

- Vāta-pacifying foods such as warm soups, steamed vegetables, and whole grains are recommended to balance Vāta and alleviate symptoms like anxiety, insomnia, and irritability.
- Kapha-balancing foods are recommended for women who experience fluid retention and weight gain. These foods include light, dry, and warming dishes, such as mung dal and spices like ginger and turmeric.

### 3. Lifestyle Changes:

- Regular exercise and yoga are recommended to balance Vāta and improve circulation. Specific yogasanas such as Baddha Konasana (bound angle pose) and Trikonasana (triangle pose) help relieve pelvic tension and improve flexibility.

- Pranayama (breathing exercises) like Anuloma Viloma (alternate nostril breathing) are particularly beneficial for calming the mind, reducing stress, and balancing Vāta and Pitta doshas.

### 4. Therapeutic Interventions:

- Yoni Prakṣāḷana (vaginal douching) with Triphala Kwātha is commonly used to cleanse the vaginal canal, promote antimicrobial effects, and support tissue healing. It is effective in managing symptoms like pelvic pain and discharge.
- Yoni Pichu (vaginal tampon) with Nimba Taila (Azadirachta indica oil) is used to soothe inflammation, reduce vulval itching, and alleviate pain. Nimba Taila has antibacterial and anti-inflammatory properties that help restore tissue balance.

**Table 2: Ayurvedic Treatment Based on Vāta, Pitta, and Kapha**

Types of PMS	Ingredients	Dosage
<b>Vāta</b>	Dashamoola tea, Aloe vera gel with black pepper	12 tsp Dashamoola in hot water twice daily, 1 tbsp aloe vera before meals
<b>Pitta</b>	Sukumara Grutham, Aloe vera gel with cumin powder	1 tsp Sukumara Grutham on an empty stomach, 1 tbsp Aloe vera
<b>Kapha</b>	Aloe vera gel with Trikatu (black pepper, ginger, and long pepper)	1 tbsp Aloe vera gel daily

**Table 3: Herbs Used for the Treatment of PMS**

Herb	Uses	Dosage
Asoka [31]	Pain reliever, phytoestrogens for normalizing menstrual flow	2-3 ml Asoka bark mixed with water or juice
Shatavari [32]	Anti-inflammatory, promotes digestion and reproductive health	Powder form with ghee or milk
Trikatu [33]	Improves digestion, relieves pain and cramps	1 tsp twice a day in water
Lodhra [34]	Uterine tonic, effective for hormonal acne	Lodhra powder
Brahmi [35]	Reduces stress, improves sleep	2 tsp powder twice a day in water

**Table 4: Ayurvedic Lifestyle Recommendations for PMS**

Lifestyle	Benefits	Recommended Practices
Yogasana	Improves flexibility, reduces stress, alleviates pain	Baddha Konasana, Trikonasana, Ardha Chandrasana
Pranayama	Balances Vāta, calms the mind, improves emotional health	Anuloma Viloma (alternate nostril breathing)
Dietary Changes	Reduces Vāta and Kapha imbalances, improves digestion	Warm, cooked meals; avoid processed sugars and caffeine
Exercise	Reduces fluid retention, enhances circulation	Regular moderate exercise like walking or swimming

### Integrated Approach

An integrated approach that combines both biomedical treatments and Ayurvedic therapies offers a comprehensive and effective solution for managing PMS. For instance, SSRIs or NSAIDs can be used for immediate relief, while Ayurvedic herbs and

lifestyle modifications address the root cause and support long-term health. This combined approach allows women to experience both short-term relief and long-term balance, offering a holistic solution to managing PMS symptoms.

## Discussion

Premenstrual Syndrome (PMS) affects a significant number of women globally, with symptoms ranging from mild discomfort to debilitating conditions that affect daily life. The pathophysiology of PMS remains a complex and multifactorial issue, influenced by hormonal fluctuations, neurotransmitter imbalances, and lifestyle factors. While conventional biomedical treatments provide effective symptomatic relief, they are often associated with side effects, and their long-term efficacy remains debatable for many women.

Biomedical Treatments such as SSRIs, NSAIDs, oral contraceptives, and GnRH agonists focus primarily on managing symptoms, particularly mood swings, pain, and fluid retention. SSRIs, like fluoxetine and sertraline, have proven to be effective in treating the psychological symptoms of PMS, but their long-term use may result in side effects such as sexual dysfunction, weight gain, and gastrointestinal issues. Similarly, NSAIDs are effective in reducing pain, but they do not address the underlying hormonal imbalances or improve the patient's overall reproductive health.

On the other hand, Ayurvedic treatments provide a more holistic approach by focusing on Vāta, Pitta, and Kapha dosha

imbalances. Ayurvedic remedies such as Shatavari (*Asparagus racemosus*), Trikatu (a blend of Piper longum, Zingiber officinale, and Piper nigrum), and Yoni Prakṣāḷana with Triphala Kwātha aim to restore balance in the body's energies (doshas) and address the root causes of PMS. Shatavari is widely used for its reproductive health benefits, while Trikatu aids in improving digestion and alleviating abdominal discomfort. Yoni Prakṣāḷana helps cleanse the reproductive system, promoting tissue regeneration and reducing inflammation.

The combination of biomedical and Ayurvedic approaches offers a more comprehensive treatment plan, addressing both the immediate symptoms and the root causes of PMS. Integrating both systems may provide a balanced solution, allowing women to benefit from short-term relief through biomedical treatments while restoring long-term balance through Ayurveda.

Despite the promising results seen in Ayurvedic treatments, there is a need for further research and clinical trials to validate the efficacy of these therapies. A controlled study comparing biomedical treatments with Ayurvedic remedies would help quantify their effectiveness and provide greater clarity on their role in PMS management. Future studies should also explore the long-term

sustainability of Ayurvedic treatments and their potential to complement or replace conventional therapies.

## Conclusion

Premenstrual Syndrome (PMS) is a prevalent condition that affects a substantial number of women worldwide, with symptoms ranging from mild to severe. The pathophysiology of PMS is multifactorial, involving hormonal fluctuations, neurotransmitter imbalances, and lifestyle factors. Biomedical treatments primarily aim to provide symptomatic relief, but these often come with side effects and may not offer long-term solutions.

In contrast, Ayurvedic medicine offers a holistic and individualized approach to managing PMS, focusing on balancing the body's internal energies (Doṣas) and addressing the root causes of the condition. Ayurvedic treatments, such as herbal remedies, dietary modifications, yoga, and lifestyle changes, provide an effective and non-invasive option for managing PMS symptoms. By restoring balance to Vāta, Pitta, and Kapha, Ayurveda seeks to alleviate both the physical and emotional disturbances associated with PMS.

The integration of both biomedical treatments and Ayurvedic therapies holds

great potential for managing PMS in a more comprehensive manner. Pharmacological interventions, such as SSRIs and NSAIDs, provide immediate symptom relief, while Ayurvedic therapies offer long-term benefits by addressing the root causes of the condition. Combining these approaches may offer the best of both worlds—effective short-term symptom management and sustainable, holistic healing.

Further research, including clinical trials and comparative studies, is needed to establish the efficacy of Ayurvedic treatments for PMS and to better integrate these practices into conventional medical care. An integrated approach, taking into account both modern scientific and traditional Ayurvedic perspectives, promises a more balanced and patient-centered approach to the management of PMS.

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