

PREMENSTRUAL SYNDROME-CAUSES, SYMPTOMS, DIAGNOSIS AND TREATMENT

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ABSTRACT

Premenstrual syndrome (PMS) is psychoneuro endocrine disorder of unknown aetiology. Noticed in leuteal phase of menstruation. It is common in women aged between 30 to 45. PMS don't have exact cause but some hypothesis are postulated like alteration in level of oestrogen and progesterone, low levels of vitamins and minerals, eating a lot of salty foods, which may cause you to retain (keep) fluid, drinking alcohol and caffeine, which may alter your mood and energy level. Diagnosis is possible by keeping menstrual diary it provides clues to help women understand and cope with the changes. As PMS don't have exact cause so its treatment also multifactorial. It includes various pharmacological & non pharmacological treatment to treat PMS syndrome.

Keywords: PMS, Premenstrual syndrome.

INTRODUCTION

Premenstrual syndrome psychoneurotic disorder of unknown aetiology, often occur just prior to menstruation. There is cyclic appearance of large number of symptoms during last 7 to 14 days of the menstruation cycle. It is not related to any organic lesion; regularly occur during the leutial phase of each ovulatory menstrual cycle. Symptom of PMS disturbs the life style of women or she may require the medical help. Rest of cycle period is free from symptom. Many women ask themselves that "What is PMS?" and "Do I have PMS?".

They get different answers from different sources like doctors, friends, and medical web sites.

Premenstrual syndrome (PMS) is a group of symptoms which linked to the menstrual cycle. PMS symptoms occur 1 or 2 weeks before period starts. The symptoms usually go away after starting of bleeding. PMS can affect menstruating women of any age and the effect is different for each woman. For some women PMS is just a monthly bother. For others, it may be so severe that it may disturb their daily routine 1 or 2 week before menstruation cycle. Symptom of PMS is disappearing when monthly period or

bleeding get stop, also in case of pregnancy and menopause these symptoms are not seen.

Premenstrual syndrome symptoms that

Start during the second half of the menstrual cycle (14 days or more after the first day of last menstrual period) Go away 1 - 2 days after the menstrual period starts. PMS is defined as the cyclical recurrence of symptoms Physical, psychological, and /or behavioral,

That occurs after ovulation and disappears within a few days of onset of bleeding.

These symptoms affect how women function in daily life, often interfering with work, school or personal relationships.

Premenstrual syndrome is also called as premenstrual tension

Premenstrual syndrome is the term which is related to menstrual cycle. It is psychoneuro endocrine disorder. It consist cyclic reappearance of symptoms. Symptoms of premenstrual syndrome are occurs during luteal phase of menstrual cycle (7 to 14 days prior to menstrual cycle). For some women, these premenstrual symptoms are severe enough to disturb their routine life and interfering with daily activities.

Menstrual cycle

- It's helpful to understand the anatomy of menstrual cycle since PMS/PMDD occurs in the context of menstruation.
- While menstrual cycle is a multi-faceted biological process, remember it is an important part of being female.

Phases of menstrual cycle

1. The starting phase of menstruation (menarche) – is about 12 or 13 years of age.
2. The next phase is during childbearing years – years of optimal operation.
3. Then the phase of decline (perimenopause) – where the ovaries gradually stop working.
4. Finally, menstruation stops completely (menopause) – ovaries stop functioning and producing hormones).
 - Most of women normally have a fairly predictable cycle.
 - The cycle can vary from 25 to 35 days.

In typical 28 days menstrual cycle

- 1) Menstrual phase - Days 1 to 5
- 2) Follicular phase - Days 1 to 12 (overlaps with menstrual phase)
- 3) Ovulatory phase - Days 13 to 15
- 4) Luteal phase - Days 16 to 28 (premenstrual phase)

1) Menstrual phase-Days 1 to 5

- Day 1 is the first day of bleeding/spotting.

2) Follicular phase-Days 6 to 12

- Occurs after period ends.
- Estrogen and progesterone made by the ovaries cause changes in the lining of the uterus.
- Ovarian follicles or eggs start to mature.

3) Ovulatory phase-Days 13 to 15

- Egg is released on about day 14 (in a 28 day cycle).

4) Luteal phase-Days 16 to 28 (the PMS/PMDD phase)

- The time period from ovulation to the onset of your period
- Typically lasts 14 days in a normal menstrual cycle.

Corpus luteum is formed on the ovary and this cellular structure produces high levels of estrogen and progesterone. Uterus/womb is prepared for pregnancy if the egg or follicle is

not fertilized by a sperm, the corpus luteum begins to degenerate, which causes levels of estrogen and progesterone to decrease. With decreased levels of the hormones, the uterus begins to shed its lining and this is the start of a new cycle.

CAUSES OF PREMENSTRUAL SYNDROME

Exact cause is not known but the following hypotheses are postulated.

- 1) Alteration in level of oestrogen and progesterone starting from luteal phase. Either there is altered oestrogen: progesterone ratio or diminished progesterone level.
- 2) Neuroendocrine factor
 - a) Serotonin is an important neurotransmitter in central nervous system during luteal phase, decrease synthesis of serotonin is observed in women suffering from PMS.
 - b) Endorphins – the symptom complex of PMS is thought to be due to the withdrawal of endorphin from CNS during luteal phase.
 - c) Gama amino butyric acid (GABA) suppress the anxiety level in brain. Medication that are GABA agonist are effective.
- 3) Psychological and psychosocial factors may be involved in produce behavioural change.
- 4) Others like,
 - Low levels of vitamins and minerals
 - Eating a lot of salty foods, which may cause you to retain (keep) fluid
 - Drinking alcohol and caffeine, which may alter your mood and energy level.

1. SYMPTOMS

PMS is more common in women aged between 30 to 45.

Symptoms may vary from woman to woman and can be categorized into the following common symptoms

Mood-related ("affective") symptoms

Depression, sadness, anxiety, anger, irritability, frequent and severe mood swings.

Mental process ("cognitive") symptoms

Decreased concentration, indecision.

Pain

Headache, backache, breast tenderness, joint and muscle pain.

Nervous system symptoms

Insomnia (sleeplessness), hypersomnia (sleeping for abnormally long periods of time), anorexia, food cravings, fatigue, lethargy, agitation, a change in sex drive, clumsiness, dizziness or vertigo, prickling or tingling sensation.

Gastrointestinal symptoms

Nausea, diarrhea, palpitations (rapid fluttering of the heart), sweating.

Fluid and electrolyte symptoms

Bloating, weight gain, reduced urination.

Skin symptoms

Acne, oily skin, greasy or dry hair.

2. DIAGNOSIS

It is difficult to diagnose because there's no clear cause and the symptoms vary and are found in other disorders. The cyclical pattern is crucial for a diagnosis: symptoms appear prior to menstruation and disappear when bleeding starts.

A medical history and physical examination involve an evaluation of the symptoms and when they occur in relation to menstruation. Many doctors advise women to keep a diary of menstrual cycles and the physical and psychological changes they experience over several months. The menstrual diary provides clues to and helps women understand and cope with the changes.

Thyroid function tests and other tests that evaluate the production of hormones are used to rule out other medical disorders.

Tests may be done to rule out menstrual-related pain occurring just before and during menstruation and endometriosis.

Because depression is a common feature of PMS, some women undergo psychological counseling as part of the diagnostic procedure. Psychologists, who are professionally trained to recognize depression and other mood disorders, may be able to differentiate the cyclical pattern of depression associated with PMS from the psychiatric disorder.

Administration of GnRH analogue, goserelin 3.6 mg in the form of depot at monthly intervals for such, the symptoms are relieved along with amenorrhoea, the case is considered to be PMS.

3. TREATMENT**NON PHARMACOLOGICAL TREATMENT**

Treatment focuses on relieving symptoms involves exercise, dietary changes, stress reduction and medication.

Exercise

Exercise has a big effect on hormones, including those involved in the menstrual cycle. Women who exercise experience less anger and depression. Exercise also reduces stress, which makes mildness of PMS symptoms. Women, who experience PMS, are encouraged to exercise regularly, 20-45 minutes, 3 times a week.

Nutrition

Diet manipulation include avoidance of salt, caffeine, refined sugar, dairy products, animal fat and alcohol specially in second half of cycle. Professional nutrition and dietitian can advise you on dietary changes that may relieve symptoms. Some nutritionists recommend vitamins, especially vitamin B6.

Stress reduction

Stress reduction can help reduce PMS symptoms. Physical trainers and physical therapists can help women incorporate exercise and movement into their lives. A counsellor or therapist can provide advice on reducing stress.

PHARMACOLOGICAL TREATMENT

When exercise, diet, and other lifestyle changes have not helped, medication may be effective.

As the aetiology is multifactorial and too often obscure, various drugs are used either on speculation or empirically with varying degrees of success.

Nonhormonal

- a) Tranquilizers or antidepressant drugs, may be helpful logically.
- b) Pyridoxine- 100mg twice daily is helpful by correcting tryptophan metabolism specially following "pills" associated depression.
- c) Diuretics in second half of cycle – Frusemide 20 mg daily for consecutive 5 days a week reduce fluid retention.
- d) Alprazolam 0.25 mg twice daily during the luteal phase improves the anxiety and depression symptom.
- e) selective serotonin reuptake inhibitors are found to be very effective. Fluoxetine is an antidepressant that inhibits neuronal uptake of serotonin. A single oral dose of 20mg was found to improve the psychiatric and behavioural symptom significantly. The drugs are

prescribed prior to onset of symptom and to be continued till menstruation starts.

- f) Danazol- in case of breast tenderness³.

Hormonal

Any of following drugs is to be prescribed

- 1) **Oral contraceptive pills**
The idea is to suppress ovulation and to maintain a uniform hormonal milieu. The therapy is to be continued for 3 to 4 cycles.
- 2) **Progesterone**
Dydrogesteron 10mg daily or twice daily from 5th day of cycle for 20 days is of help on the presumption that progesterone deficiency is the cause. The therapy is to be prepared for 3 to 6 cycles. Levonogestrel intrauterine system is also used to suppress ovarian cycle.
- 3) **Bromocryptine**
2.5 mg daily or twice a day may be helpful, at least to relieve breast complaints.
- 4) **Suppression of ovarian cycle**
suppression of endogenous ovarian cycle can be achieved by giving Danazol 200 to 400mg daily or with help of GnRH analogues That are Goserelin , leuprorelin, Triptorelin etc.

HOME REMEDIES ON PMS

The following are some home remedies for relieving some or all PMS symptoms and some can prevent symptoms.

1) Cramp Relief Remedies

- Red Wine
A popular home remedy to relieve PMS cramps, although alcohol could cause sugar cravings.
- Tea
Peppermint or chamomile tea served hot can combat PMS stomach cramps. Try adding a teaspoon of lemon juice for added relief.
- Baking soda
Add one cup of baking soda to your bath and soak for 30 minutes.
- Warm towel
Wet a kitchen towel in plain water and heat in microwave. Apply to your stomach for relief.

2) Mood Swing Relief Remedies¹

- Cinnamon
Ease your mood with a cup of cinnamon tea before going to bed.
- Vitamin B6
Vitamin B6 actually combats a lot of PMS symptoms besides mood swings. You can also help with fluid retention, bloating, sugar cravings, breast tenderness and fatigue. Some foods that you can find this vitamin in are chicken, bananas, brown rice, sweet potatoes and peanut butter.
- Vitamin C
Fruits such as oranges, grapefruit and lemons reduce stress related to PMS.
- Avocados
Get in a better mood by eating avocados. They contain a natural serotonin that lifts your spirit. Other serotonin-rich foods are papayas, pineapples and plums.

3) Bloating Relief Remedies

- Exercise
Exercising encourages blood flow and fights fluid retention. This can also make you in a better mood!
- Potassium-rich foods
Potatoes, broccoli, figs, onions, tomatoes and bananas help ease bloating associated with water retention from PMS.

4) Tender Breasts and Skin Problems Remedies

- Vitamins A and D
Take vitamins A and D to help treat the acne. Some foods to try are mushrooms, whole grain cereal and soy milk.
- Vitamin E
Treat painful breasts by taking a vitamin E supplement.

5) Preventing PMS Symptoms

- Calcium
Absorbing calcium into your system helps prevent PMS symptoms. Take 1,000 to 1,200 milligrams of calcium supplements daily to relieve and prevent many PMS symptoms. If you don't want to take supplements, you can eat low-fat yogurt, salmon, almonds, soybeans and whole grain pancakes.
- Chasteberry²
Chasteberry has been used by women for thousands of years to ease symptoms related to menstrual problems. It is believed some of the

compounds found within Chasteberry work on the pituitary gland to balance hormone levels.

- Watch your salt intake.
Cut down on your salt intake to prevent water retention.
- Increase fiber intake.
Eating fiber will decrease estrogen level.
- Add vegetables and whole grains to your meals daily.
- Kick the caffeine habit.
Cutting down or eliminating caffeine daily will help reduce mood swings, painful breasts, and irritability.
- Eat pasta.
Magnesium in pasta encourages a stable hormonal function. Just as runners eat pasta the night before a race to prevent

muscle cramps, you can use this to help with menstrual cramping as well.

PMS is not fun and can upset daily life, but you don't have to suffer. Using one or more of these home remedies can help you still live a normal life-even during that monthly visit.

4. REFERENCES

1. Textbook of Gynaecology By D. C. Dutta, edited by Hiiralar Konar ,5th edition, New centre book agency pvt ltd, P.N. 178, 179,180.
2. Principle of anatomy & physiology By Gerard J Tortora, 8th edition, 951.
3. Hawkins and Bourne SHAWS Textbook of Gynaecology 11th Edition B.I. Churchill Livingston New Delhi P.N. 313,314.