

Prevalence of premenstrual symptoms: Preliminary analysis and brief review of management strategies

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ABSTRACT

Objective: To determine the prevalence of premenstrual cyclic symptoms in perimenopausal age.

Subjects and Methods: Women attending Bhavan's SPARC Maitreyi's Health Care Programme (HCP) for women around 40 years of age were included in the study. Last 200 women who attended from April 2002 to October 2004 are included for analysis. Out of these 107 qualified for final analysis as others were post hysterectomy or post menopausal. Thirty five symptoms listed under premenstrual tension syndrome were analysed.

Results: Forty one women (38.3%) had 3 or more symptoms whilst 15 (14.0%) had 5 or more cyclic symptoms. Five women (4.7%) reported that the symptoms were severe. Eleven women had sought treatment for premenstrual tension syndrome (PMTS). The commonest symptom was mastalgia or heaviness of breasts. Next was whilst also was reported by several women. Women reported anger attacks and reported depression.

Conclusion: PMTS was common between 36 and 55 years. About half of them have experienced 3 more symptoms and 1 in 20 may require treatment.

Key Words: Premenstrual tension, perimenopause, premenstrual tension syndrome

INTRODUCTION

Women require special need-based health care programs as they pass through the menopausal transition. With this vision, a multisystem multispecialty health check-up and follow-up care program (Maitreyi health care program [HCP]) was initiated by our team about a decade ago, and this has been continued at the Medical Research Center, Kasturba Health Society, Mumbai. More than a thousand women have benefited from this program. The comparative effects of three plant products on perimenopausal symptoms, quality of life (QOL) and clinical biochemistry have been reported by our group earlier.^[1,2] Our observation of frequent mood changes and sleep disturbances in women in the premenopausal group prompted us to undertake a study of cyclic symptoms in Maitreyi HCP.^[3] In this communication, we describe the preliminary findings

from the analysis of premenstrual symptoms in 200 consecutive women who underwent a comprehensive check-up in the Maitreyi HCP.

Diagnosis of premenstrual tension syndrome (PMTS) is based on the following criteria as per the American Association of Obstetricians and Gynecologists^[4]:

A 30% increase in the intensity of symptoms of premenstrual syndrome (measured using a standardized instrument) from cycle days 5–10 as compared with the 6-day interval before the onset of menses and documentation of these changes for at least two consecutive cycles.

At least one of the following affective and somatic symptoms during the 5 days before menses in previous cycles. Affective symptoms: depression, angry outbursts, irritability, anxiety, confusion, social withdrawal. Somatic symptoms: breast tenderness, abdominal bloating, headache, swelling of extremities; symptoms relieved from days 4 through 13 of the menstrual cycle.

Objective

To determine the prevalence of premenstrual cyclic

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symptoms in women who attended the Maitreyi HCP.

METHODS

Maitreyi's HCP for women above 35 includes comprehensive health questionnaire, gynecological and physician's check-up, biochemical investigations of complete blood count, glucose tolerance test, lipid profile, liver functions, serum creatinine and serum thyroid stimulating hormone. Pap smear, pelvic sonography and urine and stool examination for occult blood are also included. A multidisciplinary trans-system team offers this community-oriented programme to women with voluntary services by the consultants. Bone mineral density and mammography are advised as per the age and risk factors. This analysis is a preliminary report restricted to the premenstrual cyclic symptomatology in 200 consecutive women who attended this program over 2½ years.

A special case record form has been used and a detailed medical and surgical history is included in the same. Posthysterectomy and postmenopausal cases were excluded from analysis. One hundred and seven women qualified for the analysis. Twelve women who continued to menstruate beyond 50, up to 55 years, have been included in the analysis. Only those who had symptoms at least during two consecutive cycles or more were included in the analysis.

The American Society of Obstetricians and Gynecologists and the American Psychiatric Society have now brought out the consensus criteria for inclusion of the condition in PMTS or Premenstrual Dysphoric Disorder (PMDD), the latter usually requiring treatment for neuropsychiatric symptoms. Accordingly, PMTS is said to be present when the woman reports three or more of the following symptoms in two cycles or more^[4-6]:

There are 36 symptoms as listed below in the SF-36 mental component.^[7] In the present analysis, the symptoms were classified as per the Medical Outcomes Study Short Form-36 for assessment of premenstrual symptoms, and the presence of three of these occurring over two or more cycles was labelled as PMTS:

Anxiety, irritability, depression, tension, mood swings, loss of self-control, difficulty in concentration, insomnia, confusion, headache, crying attacks, fatigue, aches, breast tenderness, cramps, bloatedness, food craving, visual disturbances, tiredness, fatigue, puffiness of the face, weight gain, altered libido, aggression, nausea, vomiting, acne, skin rashes, constipation, diarrhea, joint stiffness,

backache, abdominal cramps/pain, anger attacks, aggravation of epilepsy, aggravation of asthma.

RESULTS

Of 107 women, 26 (24.3%) did not report any premenstrual symptoms at all and 81 (75.7%) reported at least one symptom [Table 1].

Maximum frequency was seen in women from 35 to 50 years of age. Older women did not have as many symptoms.

Forty women (37.4%) who reported premenstrual symptoms had three or more cyclic symptoms for more than two cycles and could be classified as those with PMTS. Fifteen (14%) had five or more symptoms cyclically in at least two cycles. Almost 10% reported five or more symptoms inclusive of anger attacks and could be labelled as PMDD.

An analysis of most frequent symptoms was also made. Mastalgia was the most common symptom (50.5%), followed by mood changes (46.7%), depression (7.5%) and anger attacks (6.5%). PMDD was present in 10% of the cases who were referred to a clinical psychologist or a psychiatrist.

DISCUSSION

Many women have premenstrual cyclic symptoms of psychological or physical nature and, sometimes, these limit their functional capacity. The symptoms due to neurohormonal imbalance or ageing may start as early as 35 years of age. PMTS is an entity that causes considerable morbidity, and in about 3% of the women, it may disrupt the woman's life when severe symptoms recur. When there are severe symptoms like anger attacks, depression and suicidal thoughts, special attention including psychiatric consultation may be required, i.e. the PMDD. The prevalence of PMTS in general is about 2–10% for disabling symptoms, while minor symptoms may be present in up to 85% of the

Table 1: Number of symptoms experienced by women in different age groups in two or more cycles

Age (years)	Number of symptoms experienced cyclically						
	1	2	3	4	5	6	Nil
36–40	7	2	3	1	2	2	7
41–45	10	10	7	2	2	4	8
46–50	5	3	5	3	2	2	7
51–55	1	3	3	1	-	-	4
Total	23	18	18	7	6	9	26

women.^[4-6,8] In the present series, 75.7% reported at least one symptom cyclically.

In the present series, a high prevalence of PMTS and PMDD was observed in premenopausal women. Halbreich has reported that in about 20% of the women, the symptoms are severe enough to warrant treatment.^[5] Dean *et al.* have reported a prevalence of 19–30% when all women from 18 to 45 years of age were screened.^[6] Freeman *et al.* reported that PMTS is common in younger women with many children.^[8] In a recent survey of 3,913 women of 15–54 years of age, Tschudin *et al.* observed that about 10% reported PMTS and 3.1% reported PMDD. The prevalence was higher in women older than 35 years.^[9]

When the Indian scenario is considered, Chaturvedi *et al.* in the 1990s have reported a prevalence of 20% in a general population and severe symptoms in 8%.^[10] The same authors have, in a later study, reported suicidal ideas and/or death wish during the premenstrual period in 10% of the subjects, more so among college students and industrial working women as compared with housewives.^[11] Banerjee *et al.*, in a group of 62 women, reported PMDD in 6.4%.^[12]

There is a close association between mood disorders and the sleep rhythm and disturbances in sleep pattern in premenopausal age.^[3-13,14]

Management Strategies

Many women and their physicians regard PMTS as a physiological phenomenon and do not think treatment is necessary. However, it does affect QOL in some and it is therefore essential to identify which women will benefit from lifestyle management and which will require pharmacological intervention. Those who want to reach their full functional potential and who find that the symptoms are hampering their progress or interfering with normal daily routine should be certainly offered safe pharmacological interventions provided that they come for routine follow-ups. Because there are many etiological factors that have been described as probably causative, and multiple causes may be present in an individual woman, there is a wide variety of treatment options and combinations depending on specific symptoms and their severity. The postulated causes range from hormonal imbalances like progesterone deficiency, prolactin excess, thyroid hypofunction, fluctuation in circulating level of estrogen; electrolyte disturbances like rennin-angiotensin alterations, antidiuretic hormone excess, decreased colloid osmotic pressure; neurotransmitter disturbances with serotonin or

gamma-amino-butyric-acid, or β -endorphin activity alternations, serotonin metabolism alternations or prostaglandin imbalance; cytokine imbalances like excess of interleukin (IL)-6, IL-1 β and tumor necrosis factor (TNF)- α ; nutritional deficiencies like vitamin B or vitamin D deficiency; lack of exercise or psychosocial disturbances.^[8-10,13-15] The treatment therefore will depend on the particular symptom complex in the individual woman.^[16,17] In concordance with other authors, we have also observed PMTS in cases with subclinical hypothyroidism.^[18] Thyroid replacement therapy is usually simple to follow. Lifestyle measures like regular exercise, balanced nutritious diet and regular hours of sleep will benefit all, and may be adequate for some.^[19-21] For others, pharmacological interventions may be helpful if required.

The therapy is multipronged and has to be individualized. While simple measures like the institution of physical exercises, relaxation techniques like yoga and vitamin and mineral supplements are adequate for most women,^[19-24] some require hormonal therapy with combined oral contraceptives or regulation of fluid and electrolytes. As a matter of fact, combined oral contraceptives are used frequently in the more severe cases and, drospiridone, containing newer combinations, is relatively free from side-effects.^[16,17,25] Selective estrogen modulators, including nonsteroidal agents like centchroman, also could be useful, particularly in women with contraindications to hormones.^[26] Group sessions with psychologists also have shown benefit. Few women need psychiatric consultation and will benefit from antidepressants, particularly sertraline or fluoxetine, while some respond to prolactin inhibitors like bromocriptine or cabergoline.^[27,28]

Complementary and alternative therapies like soy, *Hypericum perforatum* and *Gingko biloba* have a definite role to play.^[24,29-31] Evening Primrose oil does not have significant efficacy.^[32] We have observed relief of mild to moderate premenstrual symptoms with soy, *Gycyrrhiza glabra* and *Withania somnifera*.^[1,2] We have also observed complete relief of PMTS in two women treated with an extract rich in *Saraca asoka*, prescribed for menorrhagia, which was also controlled.^[33] There is need for more research in this area because commonly used drugs may have side-effects that may prevent regular long-term use [Table 2].

Effect on Work and QOL

Recently, two well-designed studies have shown that PMTS leads to loss of work hours and economic losses, and does not allow women to reach their full potential.^[34-36]

Table 2: Common side-effects of existing pharmacologic therapies for PMTS

Drug	Common side-effect
Spironolactone	Irregular cycles, hyperkalemia
Naproxen sodium	Nausea, gastric, ulceration, renal toxicity
Danazol	Weight gain, breast atrophy, deepening of voice, dyslipidemia, altered liver functions, hepatosis
GnRH analogues	Estrogen-deficiency symptoms like dry vagina, hot flashes, CVS effects, osteoporosis
SSRIs psychoactive	Insomnia, drowsiness, fatigue, nausea, headache, mild tremor, sexual dysfunction, headache
Bromocriptine	Severe constipation
Alprazolam	Additional, tolerance, increases food craving, specially fat
Oral contraceptives	May increase PMTS in susceptible women, while in many women anovulation relieves PMTS

Effective and safe therapy is indicated. It is also important to bear in mind that other chronic diseases like migraine or depression or irritable bowel syndrome could be exaggerated during the premenstrual phase, and a multidisciplinary team should evaluate and manage such cases.^[36,37]

CONCLUSION

PMTS is a common condition sometimes precipitated by stress. There are multiple etiological factors and a number of options are available for treatment. It is very important to ensure that the first option is nonpharmacological as many women may respond to it. Pharmacotherapy can be added in recalcitrant cases and must be individualized as per the woman. Great care should be taken to avoid side-effects and drug interactions because multiple therapies may be used. Medicinal plants may be a safe alternative in some women. Because PMTS could be a predictor for menopausal syndrome, it will be useful to warn women with PMTS and their families of a flare up or the need for long-term follow-up. Freeman *et al.* and Arpel *et al.* have reported PMTS to be predictive of menopausal syndrome in a long-term follow-up study and have shown the association of hormonal imbalance with depressive symptoms in women.^[8,38]

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