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Premenstrual Syndrome: A Psychological Overview

SUMMARY

This paper reviews the premenstrual syndrome (PMS) from a historical and psychological perspective. The physician must recognize that the premenstruum—the four days before the onset of the menses—is a 'high risk' phase for women. They may demonstrate somatic and psychological complaints such as irritability, aggression, tension, anxiety, depression, lethargy, insomnia, poor coordination and concentration. Psychological disturbances can range from self-deprecation and the feeling that 'everything is too much' to pronounced feelings of oppression and depression. Psychiatric patients may become even more disturbed at this time. Recent reviews on PMS have studied its etiology and its possible connection to hormone imbalance, but to date there is no complete explanation for the syndrome's psychological symptoms. The most promising treatments for the psychological symptoms of PMS are pyridoxine (although there are conflicting reports about it), antidepressants, benzodiazepines if anxiety and tension dominate, and ongoing psychotherapy for severe cases. (Can Fam Physician 1983; 29:1919-1924).

SOMMAIRE

Cet article examine le syndrome prémenstruel (SPM) dans une perspective historique et psychologique. Le médecin doit reconnaître que le prémenstruum—les quatre jours précédant l'apparition des menstruations—est une période "à haut risque" chez les femmes. Elles peuvent présenter des complaintes somatiques et psychologiques comme l'irritabilité, l'agression, la tension, l'anxiété, la dépression, la léthargie, l'insomnie et un manque de coordination et de concentration. Les désordres psychologiques peuvent aller de l'auto-dépréciation et d'un sentiment que "tout est de trop", à des sentiments marqués d'oppression et de dépression. Les patientes psychiatriques peuvent présenter une aggravation de leurs troubles. De récentes revues de littérature concernant le SPM one étudié son étiologie et le lien possible avec un déséquilibre hormonal mais, à date, il n'y a pas d'explication complète pour les symptômes psychologiques du syndrome. Les traitements les plus prometteurs pour les symptômes psychologiques du SPM sont la pyridoxine (bien qu'il y ait des rapports conflictuels sur ce médicament), les antidépresseurs, les benzodiazépines si l'anxiété et la tension dominent, et une psychothérapie prolongée pour les cas graves.

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IN RECENT YEARS there has been much renewed interest in the psychological aspects of menstruation and in particular the premenstrual period. The purpose of this paper is to present an overview of the past and present literature on the premenstruum and to focus on those aspects that comprise the premenstrual syndrome (PMS). Subsequently we will define the progress made in discovering the causes of and treatment for this syndrome.

The Premenstruum

The premenstruum refers to the four days before the onset of the menses. The PMS may be defined as

the constellation of symptoms found in the majority of women in these few days before and sometimes including the first day of the menses. Symptoms are always in the same phase of every menstrual cycle, and are completely absent for a bare minimum of seven consecutive days during the postmenstruum; most patients are asymptomatic for at least 14 days.[1] Symptoms that comprise this syndrome include numerous somatic and psychological complaints such as irritability, aggression, tension, anxiety, depression, lethargy, insomnia and poor coordination and concentration.[2] Karen Horney[3] states in her book *Feminine Psychology* that psychological disturbances of the menstrual cycle occur more frequently in the days before the menstruum and that they consist of degrees of tension ranging from a feeling of self-deprecation and that "everything is too much" to pronounced feelings of oppression and of severe depression. Somewhere in between lie the symptoms of listlessness and apathy. These are "intermingled with feelings of irritability or anxiousness". All this "recedes at the onset of the bleeding with a concomitant feeling of relief".[3]

Recent reviews on PMS have touched upon the theories of its etiology and its possible connection to hormone imbalance. Theories of "estrogen excess, progesterone deficiency or withdrawal, imbalance of estrogen-progesterone ratio and hyperprolactinemia have been researched but there is no conclusive evidence that any one of these is a valid explanation for the psychological symptoms of this syndrome."[4]

Many difficulties arise in trying to ascertain the incidence and prevalence of PMS. Since this syndrome has not been consistently defined from investigator to investigator, and because many of the studies have not been well controlled with unbiased patient populations, one can only say that mild PMS is very common and may occur in most women, while severe PMS affects only a small minority.[4] Some studies say that up to 90% of women have noticeable objective and subjective premenstrual symptomatology, but that only 10% of these are severe. Attempts to assess PMS have led researchers to develop several self-report instruments.[5-11]

Severe PMS is more common in the 30s and 40s than in the teens and 20s when menstrual symptoms predominate.[5] Psychotic episodes exacerbated in the PMS on a cyclical basis are more common in younger women.[6] However, this may be a disorder that is distinct from PMS.

Effect of Culture on PMS

Culture may influence the incidence and prevalence of PMS. Attitude[12] may play an important role in symptomatology and severity of symptoms. Expectation[9] was shown to have a clear influence on symptom reporting. There are shared cultural beliefs and stereotypes related to PMS.[8] Since most questionnaires were retrospective and because the reporting was done by women who, at times, had also volunteered for the various studies, inaccurate observations may have been made in many early studies.[4]

The History of PMS

Mary Chadwick reviewed the history of the psychological effects of menstruation and in particular of the PMS, in a 1932 monograph.[13] She refers to Galen and Pliny, who wrote about periodic psychological disturbances in women. These disturbances were attributed to "the wanderings of the uterus about the body" and to phases of the moon. Men viewed the menses with horror thought they caused grave public damage and feared contamination. Women themselves viewed menstruation with shame and guilt. They were segregated and their activities were limited. Pliny wrote:
"The touch of a menstruous woman turned wine to vinegar, blighted crops, killed seedlings, blasted gardens, brought down the fruit from trees, dimmed mirrors, blunted razors, rusted iron and brass (especially at the waning of the moon), killed bees or at least drove them from their hives, caused mares to miscarry, and so forth".

In medieval history, psychological disturbances in women were attributed to witchcraft. Symptoms of mental derangement were accentuated in the paramenstruum (the four days before and the first four days of menstruation). A woman becomes "temporarily unbalanced, her actions are unreliable and it is often impossible to

know what to expect from her at this time. Her memory is frequently impaired and she cannot be relied upon to carry out duties which usually she performs perfectly." She feels "exceedingly injured and wishes to obtain revenge" . . . as compensation to her outraged feelings".[13]

In his book, *The London Dispensatory and Key to Galen's Method of Physick*, Nicholas Culpeper wrote that "the Womb hathe much affinity with the head", and the "head principally suffers with the womb".[13] Women were thought to suffer from hysteria and were given prescriptions of valerian which had an "unpleasant odor and taste".

Research on PMS

In his article, "Types of Neurotic Nosogenesis,"[14] Freud refers to the probable importance of women's menstrual cycle when they experience sudden intensifications in libido, regressive tendencies and heightened conflicts at certain times. Dr. Harry Campbell[13] referred to "peculiarities of nervousness" recurring just before the menses in his book, *Differences in the Nervous Organization of Man and Woman*.

In 1931, Frank described 15 cases of the "premenstrual tension syndrome", a term that has become synonymous with PMS.[15] This was the first "modern" scientific investigation of premenstrual symptomatology. He focused on women who are "handicapped" by premenstrual symptomatology and suggested that it may explain some absences from work or decreased performance at work. He described two cases in which the frequency of seizures and of asthmatic attacks seemed to increase in the premenstruum.

In 1939, Therese Benedek and Boris Rubenstein wrote a classic paper on the correlations of ovarian activity and psychodynamic processes.[16] In part II of their monograph they psychoanalyze analytic material in 15 patients through 125 menstrual cycles and correlated their analysis with daily vaginal smears and basal body temperatures. They were able to correlate physiological and psychological processes and relate instinctual drives to specific hormone functions of the ovaries.

Karen Horney[3] hypothesized that premenstrual tension is connected to conflicting ideas about pregnancy. This time of the cycle is a "burden only to those women in whom the idea of motherhood is fraught with great inner conflicts". It is interesting that PMS tends to become more prevalent and bothersome as the menopause approaches.[4] This supports those who, with Horney, theorize that there is a psychogenic basis for PMS. The realization that the ability to bear children is ending may contribute to PMS in these women.

Since the 1930s we have learned much more about the hormonal changes related to the menstrual cycle, and about drugs that can influence these changes. It doesn't appear, however, that we are any further ahead in delineating the causes of psychological changes related to the premenstruum nor what can eliminate the negative aspects of these changes.

In the 1960s, Katerina Dalton, a London, England general practitioner began her extensive work on PMS. Her early studies have been highly criticized for being inadequately controlled; however, they have not been disproven and are still frequently quoted in the literature. She studied the effect of the menstrual cycle on schoolgirls' work and observed that in times of stress, not only are premenstrual symptoms increased, but the handicap imposed by the paramenstruum affects examination performance.[17] "While zealots campaign assiduously for equality of the sexes, Nature refuses to grant equality even in one sex". This study was prompted by observing the mental dullness of many women when they are interviewed during the premenstruum.

A second study by Dalton[18] in 1960, focused on the paramenstruum and accidents. She found that of 84 regularly menstruating women who had accidents, 52% of them had them during the paramenstruum. She concluded that increased lethargy is responsible for both lowered judgment and a slow reaction time. She cautioned about administering tranquillizers at this time because they may well increase accident-proneness. In 1954[19] Bloom also reported cyclical patterns in accident rates for female drivers.

In 1972, Sommer studied the effect of menstrual cycle changes on intellectual performance[20] and concluded that there is no systematic relationship between performance and phases of the menstrual cycle. In 1982 Jensen[21] studied the effects of the menstrual cycle on task performance. She reported that while simple reaction time was not significantly affected during the PMS, pursuit tracking was affected during this phase, with mean performance being the worst premenstrually. Attention span also deteriorated premenstrually. There have been reports of premenstrual decrease in arm-hand steadiness and eye-hand coordination,[21] both of which affect tracking tasks. This may affect the ability to react quickly, which is important in the safe operation of vehicles. Performance varies in any given woman from cycle to cycle. This is the typical pattern of a stressor variable.

Dalton carried out a study in a women's prison and reported a correlation between the time these women committed their crimes and the paramenstruum.[23] In patients with personality disorders, antisocial behavior and alcoholism, misdemeanors were higher around the paramenstruum. Sixty-three percent of the women reported that they were symptomatic when they committed their crimes, and that about half their crimes were committed during the premenstruum and menstruum. Dalton states that irritability and loss of temper may lead to violence and assault, lethargy, child neglect, depression or suicide.

Effect of PMS On Psychiatric Illness

In France, premenstrual syndrome is recognized as a cause of temporary insanity.[24] Oleck,[25] a law professor, described premenstrual behaviour as being akin to temporary insanity or incompetence, in some women. There is little quantitative evidence to support this, for there are no laboratory tests or measures that can prove a woman is incompetent or temporarily insane. Therefore, one must rely on objective evidence, such as the documentation of recurrent abnormal behavior in the paramenstruum, and on the intelligence of physicians and patients in diagnosing the syndrome and its effects on performance and judgment. Dalton[24] reports on three women whose recurrent criminal acts are related to menstruation. The diagnosis was made because each woman committed all her crimes at about the same point in her menstrual cycle.

There appear to be some women whose psychiatric illnesses are exacerbated by the menstrual cycle, especially during the premenstruum.[6, 25, 27, 28] In 1981, Endicott et al.[26] suggested that depressive symptoms in a group of premenstrual women may meet the diagnostic criteria of a major affective disorder. The results are inconsistent and relationships are unclear, but they imply efforts should be made to correlate premenstrual symptomatology with psychiatric illness. If the associations become clearer, models for further studies will be developed. Reports of exacerbated psychotic symptoms during the premenstruum[6, 27] suggest a relationship between severe psychiatric illness and PMS as well, and the need for further studies on the subject.

Glass[29] reported psychiatric emergencies related to the menstrual cycle in women with personality disorders. When stressed during the premenstruum, these women were suicidal and made repeated suicide attempts. An increased frequency of relapse in manic and schizophrenic patients has also been reported during these periods.[30]

Lithium has been shown to be effective in treating patients with psychiatric disorders characterized by periodicity, such as well-defined bipolar major affective disorders and schizophrenic patients with premenstrual exacerbation of psychotic symptoms.[6, 31] Singer[31] did a controlled evaluation of lithium during the PMS in a group of oriental women with no documented history of major affective disorder, and noted that lithium was not significantly better than placebo in these patients. Steiner[32] studied 15 women with severe PMS. Three of them responded to lithium. However, they met the diagnostic criteria for cyclothymic disorder. Thus, lithium is beneficial to a specific subset of women with severe PMS whose underlying psychiatric problem is exacerbated by the premenstruum. It is difficult to establish if we are dealing with a spectrum of illness of which only the most severe develops into or precedes severe PMS. One must be alert to the patient who comes to the emergency department with severe symptomatology that fits into a cyclical pattern, and must decide whether this is a manifestation of psychiatric illness and/or severe PMS. If the two exist intermittently in the same patient, treatment may be indicated. It may significantly improve an ongoing illness that manifests itself most frequently as severe PMS alone.

Treatment

Neuroendocrinological studies have been made of women in the premenstruum but to date there is no proven evidence that any specific hormonal change causes this syndrome and the relationship between hormonal and psychological factors is uncertain. Treatments are many.[2] Drugs used to treat PMS include oral contraceptives, progestogens, pyridoxine, diuretics, bromocriptine, danazol and prostaglandin synthetase inhibitors. It has been shown that placebo is just as effective as these and that psychotherapy is as effective as placebo. The most promising treatments for psychological symptoms may turn out to be pyridoxine (although there are conflicting reports), antidepressants, benzodiazepines (taking into account their sedating effects) if anxiety and tension dominate, and ongoing psychotherapy for severe cases. Patient education appears to be an important aspect of successful treatment with or without the use of ongoing insight-oriented psychotherapy and/or medication. O'Brien[2] stresses that the timing of symptoms is most important in taking an accurate history, because symptoms of the menstruum are treated differently and much more successfully than those of the premenstruum. This paper is an excellent review of current treatments and should be read along with references for a more detailed description of these therapies.

Conclusion

Since a woman may be symptomatic for a total of six to eight days a month, it is important to recognize that this constitutes between 60 and 90 days a year or two to three months when she may be symptomatic and not functioning at or feeling her best. One must be informed about PMS and be alert to the cyclical nature of many psychiatric illnesses which may be exacerbated at

this time. Because there is no exact definition of PMS or complete knowledge about its causes, its treatment is at a stage of trial and error, except when a clear-cut psychiatric entity is diagnosed. Although we have progressed significantly from the days of Galen and Pliny there are many unanswered questions about PMS, and much more investigation is needed. It is noteworthy that PMS centres have been opened in North America, the first of which was in Boston. Let us hope that enough progress will be made to dispel the myths and uncover the mysteries that still surround the premenstrual syndrome. ◉

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