History, Evolution, and Diagnosis of Premenstrual Dysphoric Disorder

Jean Endicott, Ph.D.

Clinically significant premenstrual problems with mood and behavior have been recognized since ancient times. However, it was not until 1987 that formal criteria for a specific diagnosis were proposed. The history of the development of the DSM-IV criteria for premenstrual dysphoric disorder, as well as the epidemiology and ways in which the condition differs from other mood disorders, is reviewed.
(J Clin Psychiatry 2000;61[suppl 12]:5–8)

© Copyright 2001 Physicians Postgraduate Press, Inc.
One personal copy may be printed

Although the name *premenstrual dysphoric disorder* (PMDD) is relatively new,[1] the condition has been recognized since ancient times. As noted by Bennett Simon in *Mind and Madness in Ancient Greece: The Classical Roots of Modern Psychiatry,*[2] Hippocrates described a group of conditions that occurred prior to the onset of menstruation in which women might have suicidal thoughts and other severe symptoms. There were other references to severe premenstrual problems with mood and behavior over the years, but it was not until the 1930s that the syndrome was more officially recognized by R. T. Frank in an article in *Archives of Neurology and Psychiatry.*[3] Frank described the relatively severe premenstrual problems experienced by 15 women and coined the term *premenstrual tension syndrome*. By the 1950s, the simpler term *premenstrual syndrome* (PMS) was commonly used by the public as well as those involved in health care.[4] However, the concept of premenstrual syndrome has become very broad and covers conditions that vary from very mild, primarily physical, symptoms to the more severe syndromes involving mood and behavior that are associated with impairment in psychosocial functioning.

By the late 1970s and early 1980s, many investigators were focusing on mood and behavioral changes during the menstrual cycle, and considerable concern was being expressed about methodological issues. A number of issues made an evaluation of the growing literature difficult. There were concerns about the equivalence of studied phenomena, the definitions being used, and the excessive dependence upon retrospective accounts of symptoms when there was considerable evidence that retrospective reports were often not confirmed when daily ratings were obtained.[5] A workshop, sponsored by the National Institute of Mental Health, was held in 1983 to address many of the research issues.[6] Suggestions for criteria and research methods came out of that workshop, among them the requirement that there be documented at least a 30% difference in severity between the mid-follicular and late luteal phases of the menstrual cycle for changes in mood, behavior, or physical condition to be considered a premenstrual "change" or "syndrome." Furthermore, the need to establish a "symptom free" mid-follicular phase was stressed as the major means of differentiating premenstrual changes or syndromes from premenstrual exacerbation or magnification of some other, more chronic, condition. Investigators who were interested in treatment of severe premenstrual changes in mood and behavior and in the biological correlates of such changes tended to adopt the suggested criteria and methods. They also tended to select women for study whose daily ratings and reports clearly indicated clinically significant impairment.[7,8] A number of these investigators served as consultants to the DSM Task Force when the Third Edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III) was being revised.

In 1987, criteria for late luteal phase dysphoric disorder (LLPDD) were proposed and published in the Appendix of the *Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised* (DSM-III-R).[9] Although the name never gained widespread use by clinicians, many investigators used the criteria in their studies. The criteria were included in the Appendix of DSM-III-R in recognition that women often sought treatment for severe premenstrual problems characterized by dysphoric mood states, that a lack of diagnostic criteria often resulted in their being given an inappropriate diagnosis or no diagnosis at all, and that research focused on treatment and pathophysiology should be encouraged. By the early 1990s, when work began on the Fourth Edition of the *Diagnostic and Statisti-*

From the New York State Psychiatric Institute, New York.
Presented at the planning roundtable "New Trends in Treating Premenstrual Dysphoric Disorder," which was held September 13–14, 1999, in Naples, Fla., and supported by an unrestricted educational grant from Eli Lilly and Company.
Reprint requests to: Jean Endicott, Ph.D., New York State Psychiatric Institute, 1051 Riverside Dr., New York, NY 10032.

cal Manual of Mental Disorders, the DSM-IV Work Group on LLPDD had a relatively large number of studies to review. The chapter in the *DSM-IV Source Book*[10] reviews work published up to 1993. The results of that review and analyses of several large data sets,[11] as well as extensive consultation with clinicians and investigators, led the Work Group to recommend a change in name from *late luteal phase dysphoric disorder* to *premenstrual dysphoric disorder* and to propose criteria that were almost identical to those of LLPDD (only 1 item was added).

There was some lack of consensus among the members of the Work Group with regard to the recommendations on inclusion or exclusion in DSM-IV, with opinions ranging from support for full inclusion within the body of the DSM-IV manual to inclusion in the Appendix only to exclusion from the diagnostic system altogether. The DSM-IV Task Force on Nomenclature and Statistics decided to include PMDD as an example of a mood disorder not otherwise specified and to put the criteria in the Appendix.[1]

In October 1998, a panel of 16 experts form the United States and abroad came together to evaluate whether the evidence then available supported the concept of premenstrual dysphoric disorder as a distinct clinical disorder. Based upon the evidence, the consensus of the group was that PMDD is a distinct clinical entity.[12] In November 1999, this evidence was presented to the Food and Drug Administration Neuropharmacology Advisory Committee, and they, in turn, supported the conclusion of the panel.

Table 1. Premenstrual Dysphoric Disorder (PMDD) DSM-IV Criteria[a]

Symptoms occur in the late luteal phase of most menstrual cycles during the past year and remit within a few days of menses

At least 5 of these symptoms have been present most of the time during each symptomatic phase, at least 1 of those being item 1, 2, 3, or 4:

1. markedly depressed mood, feelings of hopelessness, or self-depreciating thoughts
2. marked anxiety, tension, feelings of being "keyed up" or "on edge"
3. marked affective lability
4. persistent and marked anger, irritability, or increased interpersonal conflicts
5. decreased interest in usual activities
6. subjective sense of difficulty in concentrating
7. lethargy, easy fatigability, or lack of energy
8. marked change in appetite
9. hypersomnia or insomnia
10. subjective sense of being overwhelmed or out of control[b]
11. other physical symptoms

Markedly interferes with work, school, or usual social activities and relationships

Not merely an exacerbation of the symptoms of another disorder, such as major depressive disorder

Criteria must be confirmed by prospective daily ratings during at least 2 consecutive symptomatic cycles

[a]From DSM-IV,[1] with permission.
[b]Symptom added to the DSM-III-R diagnosis of late luteal phase dysphoric disorder.

CRITERIA

The major components of the DSM-IV criteria for PMDD stress the timing, nature, and severity of the symptoms and the differential diagnosis from other conditions (Table 1). There must be at least 1 year's duration of symptoms that have onset during the luteal phase of the cycle and remit during the follicular phase. Most women who seek treatment report that they have had severe changes for many years.[13] At least 5 or more of 11 specified symptoms must be present. At least 1 of the 4 dysphoric mood changes must be present to a marked degree of severity. Most women who seek treatment have several of the dysphoric mood changes, with the one most commonly leading to treatment seeking being marked anger or irritability or increased interpersonal conflicts. There must be evidence of psychosocial impairment in that the condition must seriously interfere with their work, social activities, or interpersonal relationships. The premenstrual changes must not be an exacerbation of another disorder. Finally, the diagnosis is made provisionally until it is confirmed by at least 2 consecutive symptomatic cycles documented by daily ratings. The daily ratings help establish the timing of the onset and offset of the changes, their severity, their nature, and their association with impairment and if the woman is essentially asymptomatic during the mid-follicular phase of the cycle. This is the only diagnosis of a mental disorder that requires any kind of systematic daily documentation of symptoms. The requirement was included because of overdiagnosis if retrospective accounts alone are used and the common occurrence of premenstrual exacerbation of mood, anxiety, and personality disorders.

The DSM-IV criteria are in contrast to the ICD-10 criteria of PMS, which stress physical symptoms, do not require psychosocial impairment, and require only 1 symptom.[14]

Unfortunately the DSM-IV criteria lack rules for differentiating between premenstrual magnification or exacerbation of an ongoing disorder versus having PMDD superimposed on some other ongoing conditions. Most of the research has been conducted with women who currently have PMDD only. To the degree that new symptoms develop during the late luteal phase of the cycle and remit with the onset of menses, one might suspect that the woman has PMS or PMDD in addition to the condition that is present throughout the cycle, particularly if the symptoms are "classical" PMDD symptoms. However, until the ongoing disorder is in remission, such differentiation is difficult if not impossible. In any case, treatment will need to take into account the ongoing condition as well as the increase in symptoms premenstrually regardless of the differential diagnosis.

The relationship of PMDD to the broader concept of PMS is still unclear. Is it best thought of as the more severe end of a continuum of premenstrual problems or as a sepa-

© Copyright 2000 Physicians Postgraduate Press, Inc.
One personal copy may be printed

Table 2. Premenstrual Dysphoric Disorder (PMDD): Distinct From Other Depressive Disorders

Mood disturbances are cyclical, tightly linked to phases of menstrual cycle with predictable onset and offset.
Hormonal replacement therapy can provoke cyclical dysphoric mood changes in women with history of PMDD.
Symptom stability is seen across cycles.
Cyclical occurrence of symptoms ceases during pregnancy and postmenopause.
Prevention or suppression of cycling gonadal hormones relieves symptoms.
Most common chief complaint is irritability.
Physical symptoms of PMDD are unique (eg, breast tenderness and bloating are most common).
The genetic and environmental risk factors for premenstrual-related symptoms and lifetime major depression are not closely related.
PMDD is more likely to respond to serotonergic antidepressants than to other antidepressants.
Upon treatment, symptom improvement is rapid (within first treatment cycle) and intermittent dosing is effective.
Upon treatment cessation, symptoms return rapidly and reemergence is more predictable.

rate condition entirely? Given the lack of a clear demarcation between PMS and PMDD, and the fact that some women who experience PMDD during most cycles occasionally have cycles characterized by moderately severe PMS,[15] most clinicians and investigators tend to conceptualize PMDD as a form of severe or extreme PMS.

EPIDEMIOLOGY

Although few community studies have used daily ratings, the findings from those studies are relatively consistent.[12] While many women experience some premenstrual mood changes and physical discomfort, only about 3% to 8% have changes severe enough to meet the DSM-IV criteria for PMDD. Severe premenstrual problems may occur at any age after menarche to menopause. Women who seek treatment often report that their symptoms have become more severe and of longer duration.[13] Women with PMDD report impairment of family and social activities and work during the symptomatic phase at levels similar to those of women with major depressive disorder.[16,17]

Lifetime comorbidity with other mental disorders is rather high.[13,16,18] The most common are the recurrent major mood disorders, including those associated with the postpartum period. The known risk factors for PMDD include a prior personal history of a major mood disorder and a family history of mood disorders or premenstrual depression. Furthermore, women who have premenstrual dysphoric mood changes are at greater risk for subsequent episodes of major mood disorder.[19]

FACTORS DISTINGUISHING PMDD FROM OTHER MOOD DISORDERS

A number of factors distinguish PMDD from other mood disorders, and they are reviewed, discussed, and referenced in detail elsewhere.[12] Some of the major differences will be noted here (Table 2). In addition to the predictable onset and offset, which are tightly linked to specific phases of the menstrual cycle, other aspects of the long-term course of the disorder are also related to the menstrual cycle. Symptoms cease during pregnancy and postmenopause. Sequential hormone replacement therapy can provoke cyclical dysphoric mood changes in women with a history of PMDD. Prevention or suppression of cycling gonadal hormones relieves the symptoms, and women who are having regular menstrual cycles will experience symptom stability across cycles.

The clinical features of PMDD and other mood disorders also differ somewhat. The most common chief complaint of women with PMDD is irritability, and the common physical symptoms of breast pain and bloating differ from those of women with major depressive disorder. In addition, as noted by Kendler et al.,[20] the genetic and environmental risk factors for premenstrual-related symptoms and lifetime major depression are not closely related.

With regard to treatment, PMDD is more likely to respond to serotonergic antidepressants than to other antidepressants. Upon treatment, symptom improvement tends to be rapid, and intermittent dosing is possible with a number of compounds. After treatment cessation, symptoms return rapidly and their reemergence is more predictable than is the case with major depressive disorder or dysthymia.

CONCLUSIONS

Clinicians need to recognize that PMDD is a distinct clinical entity that occurs in 3% to 5% of menstruating women and that the condition has clinical, biological, and treatment characteristics that differ from the other mood disorders.

Women should seek help for PMDD because the problems tend to recur each cycle, may become more severe over time, can be quite disabling to women and their families, will not go away if ignored, can be readily diagnosed, and can be effectively treated.

Disclosure of off-label usage: The author has determined that, to the best of her knowledge, no investigational information about pharmaceutical agents has been presented in this article that is outside U.S. Food and Drug Administration–approved labeling.

© Copyright 2001 Physicians Postgraduate Press, Inc.
One personal copy may be printed

REFERENCES

1. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition. Washington, DC: American Psychiatric Association; 1994
2. Simon B. Mind and Madness in Ancient Greece: The Classical Roots of Modern Psychiatry. Ithaca, NY: Cornell University Press; 1978
3. Frank RT. The hormonal basis of premenstrual tension. Arch Neurol Psychiatry 1931;26:1053–1057
4. Greene R, Dalton K. The premenstrual syndrome. BMJ 1953;1:1007–1014
5. Endicott J, Halbreich U. Retrospective report of premenstrual depressive changes: factors affecting confirmation by daily ratings. Psychopharmacol Bull 1982;18:109–112

6. Blume E. Methodological difficulties plague PMS research. JAMA 1983; 249:2864–2866
7. Harrison WM, Rabkin JG, Endicott J. Psychiatric evaluation of premenstrual changes. Psychomatics 1985;26:789–799
8. Endicott J. Premenstrual changes, syndromes and disorders. Women's Mental Health Occasional Paper Series. Rockville, Md: NIMH Office of the Associate Director for Special Populations; 1986:1–16
9. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised. Washington, DC: American Psychiatric Association; 1987
10. Gold JH, Endicott J, Parry BL, et al. Late luteal phase dysphoric disorder. In: Widiger TA, Frances AJ, Pincus HA, et al, eds. DSM-IV Sourcebook, vol 2. Washington, DC: American Psychiatric Association; 1996:317–394
11. Hurt SW, Schnurr PP, Severino SK, et al. Late luteal phase dysphoric disorder in 670 women evaluated for premenstrual complaints. Am J Psychiatry 1992;149:525–530
12. Endicott J, Amsterdam J, Eriksson E, et al. Is premenstrual dysphoric disorder a distinct clinical entity? J Womens Health Gender-Based Med 1999;8: 663–679
13. Harrison WM, Endicott J, Nee J, et al. Characteristics of women seeking treatment for premenstrual syndrome. Psychosomatics 1989;30:405–411
14. World Health Organization. International Classification of Diseases, Tenth Revision. Geneva, Switzerland: World Health Organization; 1992
15. Schechter D. Estrogen, progesterone and mood. J Gender-Specific Med 1999;2:29–36
16. Yonkers KA, Halbreich U, Freeman E, et al. Symptomatic improvement of premenstrual dysphoric disorder with sertraline treatment: a randomized controlled trial. JAMA 1997;278;983–988
17. Pearlstein TB, Halbreich U, Batzar ED, et al. Psychosocial functioning in women with premenstrual dysphoric disorder before and after treatment with sertraline or placebo. J Clin Psychiatry 2000;61:101–109
18. Endicott J. The menstrual cycle and mood disorders. J Affect Disord 1993; 29:193–200
19. Graze KK, Nee J, Endicott J. Premenstrual depression predicts future major depressive disorder. Acta Psychiatr Scand 1990;81:201–205
20. Kendler KS, Karkowski LM, Corey LA, et al. Longitudinal population-based twin study of retrospective reported premenstrual symptoms and lifetime major depression. Am J Psychiatry 1998;155:1234–1240

© Copyright 2001 Physicians Postgraduate Press, Inc.
One personal copy may be printed