CME Activity

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CME Objectives
After completing this CME activity, the reader will be able to:

- Describe the results of earlier studies of OCD in pregnancy and the puerperium
- Describe the effect of preexisting OCD as it relates to the risk for postpartum depression
- Describe the potential changes in OCD that may occur in the postpartum period
- Describe the relationship between the severity of OCD symptoms and the menstrual cycle

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Obsessive-Compulsive Disorder in Pregnancy, the Puerperium, and the Premenstruum

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Background: Recent reports suggest that pregnancy and the puerperium may precipitate or exacerbate obsessive-compulsive disorder (OCD). The influence of this illness on other reproductive events, such as the premenstruum, is unknown. We examined retrospectively the relationships of pregnancy, the puerperium, and premenstruum to the course of OCD in 57 women.

Method: Women outpatients with OCD meeting DSM-III-R criteria completed a standardized telephone interview administered by a psychiatric resident. They were asked retrospectively about the clinical course of their illness premenstrually and during and after pregnancy.

Results: Of 72 women eligible for the study, 79% (N = 57) completed the interview. Premenstrual worsening of OCD was described by 24 (42%) of the 57 women, and 12 (21%) described premenstrual dysphoria. Of the 57 women, 38 (67%) had been pregnant at least once; 31 (54%) had delivered at least one child. Pregnancy was associated with the onset of OCD in only 5 (13%) of the 38 women. Of the 29 women with preexisting OCD who became pregnant, 20 (69%) described no change in symptoms during pregnancy, 5 (17%) described worsening, and 4 (14%) described improvement. Postpartum exacerbation of OCD symptoms was reported by 7 (29%) of the 24 women with preexisting OCD who completed full-term pregnancies. Nine (37%) of the 24 women with both preexisting OCD and completed pregnancies also reported postpartum depression.

Conclusion: The premenstrual and postpartum exacerbation of OCD symptoms in some women suggests that the course of this disorder may, in some cases, be influenced by changes in gonadal hormones. Our finding that women with OCD may be at increased risk for postpartum depression underscores the importance of careful postpartum evaluation of women with OCD to prevent maternal and infant morbidity.

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The premenstruum and puerperium are times of increased risk for mood disorder in women with a history of mood disorder.[1–6] The relationship of reproductive cycle events to the course of anxiety disorders is less well understood. Recent reports suggest that women may have an increased risk for the onset of obsessive-compulsive disorder (OCD) during pregnancy and the puerperium. Neziroglu and colleagues,[7] for example, studied 106 women outpatients with OCD using a questionnaire developed to evaluate age at onset and precipitants. Of the 59 women with children, 23 (39%) described the onset of OCD during the gestational period. Buttolph and Holland,[8] using a questionnaire mailed to women attending an OCD outpatient clinic, but limited by a 33% response rate, reported that OCD began during pregnancy in 15% of 39 women and during the postpartum period in 21%. Sichel et al.[9] described 15 women referred to a postpartum psychiatric disorders service who had postpartum new-onset obsessions without compulsions. Finally, a Gallup poll of 219 women members of the Obsessive Compulsive Foundation, who described their own or a female relative's OCD, reported that 15% felt that pregnancy or birth of a child had triggered the OCD (Unpublished manuscript. 1990. Gallup Organization, Inc.).

The influence, if any, of pregnancy and the postpartum period on preexisting OCD is poorly understood. In the only published study, Buttolph and Holland[8] reported that OCD worsened during pregnancy in 3 (8%) of 39 women. In 4 women (10%), OCD symptoms increased in the postpartum period after the birth of a first child, and, in 2 (5%), after the birth of a subsequent child.

The current, descriptive pilot study sought to explore in greater detail the relationships between OCD and the

reproductive cycle, including menses, pregnancy, and the postpartum period. While several studies have reported mixed results regarding the effects of the menstrual cycle on anxiety disorders such as panic disorder,[10,11] to our knowledge, no studies have investigated the relationship between OCD symptoms and the menstrual cycle. We wished to quantitate our clinical impression that in some patients OCD regularly worsened in the premenstrual period. We also wished to reinvestigate the earlier report[7] that in women with children, OCD commonly begins during a pregnancy. Finally, we sought to examine whether the high comorbidity between OCD and major depression[12] translated into an increased risk of postpartum depression and premenstrual dysphoria in women with OCD, since this question lacks previous study.

METHOD

We reviewed the charts of all women outpatients evaluated between 1990 and 1995 at the Stanford University Medical Center Obsessive-Compulsive Disorders Clinic. We identified charts of 72 women who had a DSM-III-R diagnosis of OCD, a current telephone number, and no chart diagnosis of schizophrenia, schizoaffective disorder, mental retardation, or organic brain syndrome. Patients' diagnoses had been made in clinical interviews by a psychiatric resident and then corroborated early in the course of the patient's treatment by at least one board-certified psychiatrist. To explore the relationship of OCD to reproductive cycle events, we expanded a previously utilized questionnaire.[7] One of two psychiatric residents (K.E.W.) administered the 20-item questionnaire by telephone to each consenting patient. Although the interviewers followed the scripted questions, they did not assay repeat or interrater reliability. (The questionnaire is available from the authors upon request.) Before beginning the interview, the residents explained the nature and purposes of the study and obtained verbal, followed by written, informed consent.

The questionnaire inquired about demographic data, age at onset of OCD, precipitating events, and whether OCD symptoms began during pregnancy. The questionnaire also asked whether women had experienced major depression or anxiety disorders during pregnancy or the postpartum period (defined as ≤ 1 year postpartum), or experienced worsening of OCD symptoms or dysphoria during the premenstruum (defined as 7 days before menses). We did not attempt to establish whether premenstrual dysphoria, if present, met DSM-III-R criteria for premenstrual dysphoric disorder. The interviewers questioned patients who reported postpartum depressed mood to determine whether their symptoms met DSM-III-R criteria for major depression.

Patients who described an exacerbation of OCD during reproductive cycle events were asked to estimate the degree of worsening. We considered a worsening of more than 20% to be clinically meaningful.

RESULTS

Of the 72 women outpatients with DSM-III-R OCD, 57 could be located and gave informed consent to participate in the study. The mean ± SD age of the 57 women was 41.9 ± 11.2. The mean age at the time of the study for the women who had been pregnant was 44.9 ± 10.8 and for the women who had never been pregnant 35.9 ± 9.8; the difference in ages between the groups was significant ($p = .0032$). Age at onset of OCD ranged from 4 to 59 years, mean 17.9 ± 11.9. Mean age at onset of OCD in the never pregnant group (13.3 ± 10.8) was significantly lower than in the previously pregnant group (20.2 ± 11.9, $p = .035$). We obtained demographic information from 89% (N = 51) of the study population. Of these 51 women, 57% (N = 29) had been married; 37% (N = 19) were currently married; and 6% (N = 3) had never been married. Eighty percent were white, 8% African-American, 6% Hispanic, and 6% Asian-American or other.

Premenstrual worsening of OCD was reported by 24 (42%) of the 57 women. Seven (29%) of these 24 women reported premenstrual dysphoria, along with 5 women who had no premenstrual worsening of OCD symptoms, bringing the prevalence of premenstrual dysphoric symptoms to 12 (21%) of 57 women.

Thirty-eight (67%) of the 57 women had been pregnant at least once, and 31 (54%) had delivered at least one live child. Five women (13%) had had an abortion; 2 (5%) had had miscarriages, with no living children; and 19 (33%) had never been pregnant.

Four women reported experiencing the onset of OCD during their first pregnancy and 1 during her second pregnancy. Thus, pregnancy appeared to be associated with the onset of OCD in 13% of the women who had been pregnant. No women described the onset of OCD during the postpartum period.

Of the 29 women whose OCD began before they first became pregnant, 24 delivered live-born children; 5 had abortions or miscarriages. The majority of these 29 women (69%, N = 20) described no change in OCD symptoms during pregnancy; 5 (17%) described worsening. Four women (14%) reported improvement in OCD

symptoms during gestation; however, 2 of these women reported experiencing an OCD exacerbation in the postpartum period. Postpartum exacerbation of OCD was reported in 5 other women with preexisting OCD, bringing the total to 7 (29%) of 24. Eleven (35%) of the 31 patients who delivered a live-born child described a postpartum depression.

DISCUSSION

In our series, 13% of women who had been pregnant reported the onset of OCD during pregnancy, a substantially smaller proportion than reported by Neziroglu and colleagues (39%).[7] This difference may arise from more general differences in the two study groups. For example, our OCD patients who became pregnant had a younger mean age at OCD onset (20 years) than those in the earlier series (25 years). Whether OCD had its onset during pregnancy more often than chance expectation in either case series is unknown, although the earlier series' 39% figure seems remarkably high.

Accurate determination of the frequency with which OCD begins during pregnancy will require prospective studies of community samples rather than retrospective reports of patients drawn from outpatient practices. If pregnancy is a higher risk period for OCD onset, then comparing women with onset during and outside gravid periods with regard to such factors as a history of Sydenham's chorea,[13] infections and medications during pregnancy, and family history of OCD may shed light on risk factors or pathogenetic pathways for development of OCD.

As in the study by Buttolph and Holland,[8] where patients were also drawn from an outpatient OCD clinic, a small proportion of our patients who had been pregnant, about 1 in 6, described significant worsening of OCD during pregnancy. These exacerbations were not due to changes in anti-OCD medication, since 30 of the pregnancies occurred before 1990 when no effective anti-OCD medications were available. The 8 women with pregnancies after 1990 reported no use of OCD medication prior to their pregnancies. In women whose OCD preceded their first pregnancy, no clear pattern of change in OCD symptoms emerged: 17% recalled a worsening and 14% an improvement during pregnancy.

In contrast to Buttolph and Holland's patients,[8] 15% of whom had first onset of OCD in the postpartum period, none of our patients reported postpartum onset. However, 29% of our patients with preexisting OCD did report a postpartum exacerbation. These two data sets begin to suggest that the postpartum period may be a time of increased risk for OCD onset or exacerbation, as has been observed in patients with panic disorder.[14,15] The 15 patients of Sichel and colleagues,[9] drawn from a postpartum referral practice, had postpartum OCD characterized by obsessions alone. All of our patients, none of whom had postpartum OCD onset, had both obsessions and compulsions.

Premenstrual exacerbation of OCD was common among the women in our study: 42% described regular premenstrual worsening of OCD. In addition, 21% described premenstrual dysphoric symptoms. Thus, women with OCD should be evaluated over the course of the menstrual cycle for the continuous efficacy of their anti-OCD medication. For those with premenstrual exacerbation, the utility of an increase in medication doses immediately preceding or during the luteal phase should be studied.

The reported premenstrual and postpartum exacerbations of OCD reported by some of our patients and those of Bottolph and Holland[8] point to a possible role of gonadal hormone withdrawal in the pathophysiology of some cases of OCD. The plausibility of such a relationship is supported by the many studies demonstrating the efficacy of serotonergic agents in the treatment of OCD, suggesting a role for dysregulation of serotonergic neurotransmission in OCD,[16,17] and by evidence indicating that both estrogen and progesterone modulate central nervous system serotonin uptake and turnover.[18–22] However, gonadal hormone influences on CNS serotonin function vary with length of exposure, dose, and species. Only further research will clarify whether gonadal hormone levels play a role in premenstrual or postpartum onset or exacerbation of OCD.

Of course, postpartum psychological and social changes may also be the primary exacerbating factors. The responsibilities for the life and well-being of a helpless infant may be experienced as a chronic stress. Conceivably, this stress could result in exacerbation of OCD (or, less probably, in new onset of OCD), since fear of being responsible for harm coming to others is a theme common to many OCD symptoms.[8]

To our knowledge, no other study has reported the incidence of postpartum depression in patients with preexisting OCD. While a history of depression and a family history of depression are risk factors for postpartum depression,[23] OCD has not been so identified. In our study, 9 (37%) of 24 women with preexisting OCD who delivered a child reported experiencing postpartum depression; 5 women (21%) reported that this was their first depressive episode. In women without a history of mood

disorder, the annual prevalence of postpartum depression is estimated to be similar to the prevalence of depression in women in general, i.e., approximately 10%.[24] Thus, our group of women with preexisting OCD appears to have experienced postpartum depression at twice the expected rate. This reported increased prevalence of postpartum depression is consistent with the high comorbidity of OCD and depression.[12]

Postpartum exacerbation of OCD and high rates of postpartum depression in women with OCD have important clinical implications. Women with OCD should be evaluated carefully in the postpartum period for worsening of their symptoms as well as for the onset of depression. Early diagnosis of postpartum depression is critical, since if untreated, this disorder can affect the child's cognitive and behavioral development.[25]

Our study is limited by its reliance on retrospective recall. This limitation is especially important in assessing the validity of the data regarding premenstrual exacerbation of OCD and premenstrual dysphoria, since retrospective overreporting of premenstrual dysphoric symptoms has consistently been found in menstruating women.[26,27] However, the cohort's wide age range may also have led to some underreporting of premenstrual symptoms, since many study participants were postmenopausal and their memories of premenstrual problems may have been attenuated. Retrospective attribution of OCD onset to the time of pregnancy is also suspect. In addition, telephone interviews may not elicit the same information as interviews conducted in person. However, the social distance afforded by telephone interviews may have allowed some women to speak more freely about relationships between their OCD and their reproductive lives.

We recommend prospective studies of OCD symptoms over the course of the menstrual cycle, during pregnancy (controlling for changes in anti-OCD medications), and during the postpartum period using reliable instruments such as the Yale-Brown Obsessive Compulsive Scale, daily mood logs, and logs recording menses. Such studies would help elucidate whether pregnancy is a time of increased risk of OCD onset, and, if so, the risk factors. These studies would clarify the apparent increased risk of premenstrual and postpartum exacerbation of OCD and the role, if any, of decreasing gonadal hormone levels. Careful studies of temporarily increased medication doses in women with documented premenstrual worsening of OCD symptoms would help inform treatment planning for such women. If our finding that women with preexisting OCD may be at increased risk of postpartum depression is corroborated, careful postpartum attention to such women will be important to prevent adverse effects on both mother and child.

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Instructions

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Obsessive-Compulsive Disorder in Pregnancy, the Puerperium, and the Premenstruum

1. Studies suggest that during the postpartum period:
   a. Women with a history of OCD may be at an increased risk for relapse or exacerbation of their disorder
   b. Women with preexisting OCD appear to be at an increased risk for onset of postpartum depression
   c. Women may be at an increased risk for the onset of OCD postpartum
   d. Women have been reported to experience the onset of obsessions without compulsions
   e. All of the above

2. In this study, the following was reported:
   a. About 2 in 5 women with OCD reported a premenstrual decrease in OCD symptoms
   b. About 2 in 5 women with OCD reported a premenstrual increase in OCD symptoms
   c. About 1 in 20 women reported a premenstrual dysphoria
   d. About 1 in 20 women reported postpartum depression
   e. None of the above

3. During pregnancy and the postpartum period, OCD may:
   a. Worsen in association with stress of infant care
   b. Worsen in association with gonadal hormone effects on CNS serotonin systems
   c. Remain unchanged
   d. Answers a and b only
   e. Answers a, b, and c

CME

Circle the one correct answer for each question.

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   - A. Enabled the reader to describe the results of earlier studies of OCD in pregnancy and the puerperium. ____
   - B. Enabled the reader to describe the effect of preexisting OCD as it relates to the risk for postpartum depression. ____
   - C. Enabled the reader to describe the potential changes in OCD that may occur in the postpartum period. ____
   - D. Enabled the reader to describe the relationship between the severity of OCD symptoms and the menstrual cycle. ____
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