Postpartum depression (PPD)—emergence of a major depressive episode after childbirth—has broad negative consequences for the mother, baby, and other family members. The time of onset after delivery for a depressive episode to be considered postpartum is debatable, but the DSM-IV-TR specifier states that onset within 4 weeks of childbirth is considered postpartum. PPD can impact many aspects of child development, including mother-infant attachment, cognitive development, and behavior. 1-3

An estimated 10% of women who have given birth experience PPD. 4,5 The risk of PPD is particularly high among women who have had previous episodes of PPD or major depressive disorder (MDD). Other risk factors include stressful life events, depression and/or anxiety during pregnancy, family history of PPD, and obstetrical complications. 6-8 Anxiety disorders are common in postpartum women, and anxiety symptoms often are prominent in PPD. 9

Despite the prevalence of PPD and its serious consequences, few studies have addressed antidepressant treatment. In this article we discuss screening and treating PPD and considerations for breast-feeding mothers. Visit this article at CurrentPsychiatry.com for results of an open-label trial of escitalopram for PPD we conducted in which patient recruitment was challenging.

Screening for PPD: A good start
Initiatives by state governments and health care providers have led to programs in which universal screening for PPD has been implemented. Screening provides a mechanism for early detection and intervention. The Edinburgh
Postnatal Depression Scale is a self-rated, 10-item scale developed for the postpartum setting, and its use increases identification of PPD at postpartum obstetrics visits. Other screening tools such as the Patient Health Questionnaire-9 are also commonly used. Despite the success of screening programs in attempting the feasibility of screening, it is unclear if the identification of women who may be experiencing PPD increases their engagement in treatment. Studies have demonstrated that even when depressive symptoms suggesting a PPD episode are identified in the postpartum period, many women still do not receive treatment. Studies of PPD screening programs have not demonstrated that screening itself improves treatment engagement or improves outcomes.

Multiple factors—including accessibility of treatment options and patient preference for specific types of treatment—determine whether mothers with PPD obtain treatment. Patients diagnosed with depression by a primary care clinician may prefer psychotherapy to antidepressants, and a postpartum mother’s willingness to accept antidepressant treatment may be influenced by concerns about possible risks during breast-feeding.

**Psychotherapy: An effective option**

Psychotherapy is an important first-line option for PPD, particularly because of considerations of medication exposure during breast-feeding and many women are reluctant to take antidepressants while breast-feeding. Interpersonal psychotherapy and cognitive-behavioral therapy (CBT) have been most studied for PPD, and both appear effective for prevention and acute treatment of PPD. Although psychotherapy alone may be sufficient for some women, for others, medication may be an important first-line treatment, depending on symptom severity, access to psychotherapy, and personal preference.

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**Table 1**

<table>
<thead>
<tr>
<th>Study</th>
<th>Design and size</th>
<th>Medication</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appleby et al, 1997²⁰</td>
<td>12-week, placebo-controlled, N = 87</td>
<td>Fluoxetine</td>
<td>Patients taking fluoxetine showed greater improvement than those taking placebo</td>
</tr>
<tr>
<td>Yonkers et al, 2008²¹</td>
<td>8-week, placebo-controlled, N = 70</td>
<td>Paroxetine</td>
<td>Both groups improved over time, but patients taking paroxetine had greater improvement in overall clinical severity</td>
</tr>
<tr>
<td>Wisner et al, 2006²²</td>
<td>8-week, RCT, N = 109</td>
<td>Sertraline vs nortriptyline</td>
<td>Proportion of women who responded or remitted did not differ between those taking sertraline or nortriptyline</td>
</tr>
<tr>
<td>Misri et al, 2004²³</td>
<td>12-week, RCT, N = 35</td>
<td>Paroxetine monotherapy vs paroxetine + CBT</td>
<td>Both groups showed significant improvement in mood and anxiety symptoms</td>
</tr>
<tr>
<td>Stowe et al, 1995²⁴</td>
<td>8-week, open-label, N = 21</td>
<td>Sertraline</td>
<td>20 patients experienced &gt;50% reduction in SIGH-D score</td>
</tr>
<tr>
<td>Cohen et al, 1997²⁵</td>
<td>Open-label, N = 15</td>
<td>Venlafaxine</td>
<td>12 patients achieved remission</td>
</tr>
<tr>
<td>Suri et al, 2001²⁶</td>
<td>8-week, open-label, N = 6</td>
<td>Fluoxamine</td>
<td>4 patients became euthymic, with HDRS scores ranging from 2 to 5</td>
</tr>
<tr>
<td>Nonacs et al, 2005²⁷</td>
<td>8-week, open-label, N = 8</td>
<td>Bupropion</td>
<td>6 patients had ≥50% decrease in HDRS score from baseline; 3 achieved remission</td>
</tr>
</tbody>
</table>

CBT: cognitive-behavioral therapy; HDRS: Hamilton Depression Rating Scale; PPD: postpartum depression; RCT: randomized controlled trial; SIGH-D: Structured Interview Guide for the Hamilton Depression Rating Scale
Evidence for antidepressants

Table 1 describes clinical trials that assessed the efficacy of antidepressants for PPD. Two relatively small, double-blind, placebo-controlled trials have evaluated selective serotonin reuptake inhibitors for PPD. In a randomized, double-blind study of CBT plus fluoxetine or CBT plus placebo (N = 87), fluoxetine was significantly more effective than placebo. In another randomized, controlled trial of paroxetine vs placebo for PPD (N = 70), both groups improved as measured by the 17-item Hamilton Rating Scale for Depression or Inventory of Depressive Symptomatology-Self-Report; those who received paroxetine did not improve significantly more than those who received placebo. It is difficult to interpret a negative, underpowered study because placebo response rates in antidepressant trials of MDD tend to be high. Data from placebo-controlled trials in PPD are limited by the number and power of those trials.

Randomization to placebo is rare in PPD trials. Most trials have used open-label designs because placebo arms pose ethical dilemmas considering the impact of PPD on a mother and her baby. In a randomized study of sertraline or nortriptyline for PPD, both drugs were similarly efficacious. In another study comparing paroxetine mono-therapy and paroxetine plus CBT for PPD, both groups experienced significant improvement in depression and anxiety symptoms, with no difference between groups at endpoint. Open-label trials have suggested antidepressants’ efficacy, although some studies have included small sample sizes (Table 1).

Breast-feeding considerations

From a nutritional standpoint, breast-feeding is optimal for a newborn. However, for some women, breast-feeding is difficult and stressful, and new mothers may experience this difficulty as failure. Some women prefer not to breast-feed, and others may prefer...
Quillivant XR™ (methylphenidate HCl) Brief Summary continued...

development were observed. The no effect level for pre- and postnatal development in rats was 15 mg/kg/day (equal to the MRHD on a mg/m² basis). Nursing Mothers: Methylphenidate is present in human milk. Long-term neurodevelopmental effects on infants from stimulant exposure are unknown. Because of the potential for serious adverse reactions in nursing infants, a decision should be made whether to discontinue the drug, take into account the importance of the drug to the mother. Pediatric Use: The safety and effectiveness of Quillivant XR have been established in pediatric patients ages 6 to 17 years. Use of Quillivant XR in pediatric patients 6 to 12 years of age is supported by adequate and well-controlled studies. Use in 12 to 17 year olds is supported by the adequate and well-controlled studies of Quillivant XR in younger pediatric patients and additional pharmacodynamic data in adolescents, along with safety information from other methylphenidate-containing products. The long-term efficacy of methylphenidate in pediatric patients has not been established. Safety and efficacy in pediatric patients below the age of 6 years have not been established. Long-Term Suppression of Growth: Growth should be monitored during treatment with stimulants, including Quillivant XR. Children who are not growing or gaining weight as expected may need to have their treatment interrupted [see Warnings and Precautions]. Juvenile Animal Data: Rats treated with methylphenidate early in the postnatal period through sexual maturity demonstrated a decrease in spontaneous locomotor activity in adulthood. A deficit in acquisition of a specific learning task was observed in females only. The doses at which these findings were observed are at least 6 times the maximum recommended human dose (MRHD) on a mg/m² basis. In the study conducted in young rats, methylphenidate was administered orally at doses of up to 100 mg/kg/day for 9 weeks, starting early in the postnatal period (postnatal day 7) and continuing through sexual maturity (postnatal week 10). When these animals were tested as adults (postnatal weeks 13-14), decreased spontaneous locomotor activity was observed in males and females previously treated with 50 mg/kg/day (approximately 6 times the maximum recommended human dose [MRHD] on a mg/m² basis) or greater, and a deficit in the acquisition of a specific learning task was observed in females exposed to the highest dose (12 times the MRHD on a mg/m² basis). No effect for juvenile neurobehavioral development in rats was 5 mg/kg/day (half the MRHD on a mg/m² basis). The clinical significance of the long-term behavioral effects observed in rats is unknown. Geriatric Use: Quillivant XR has not been studied in patients over the age of 65 years.

**DRUG ABUSE AND DEPENDENCE**

Controlled Substance: Quillivant XR contains methylphenidate, a Schedule II controlled substance. Abuse: Signs and symptoms of CNS stimulant abuse include increased heart rate, respiratory rate, blood pressure, and/or sweating, dilated pupils, hyperactivity, restlessness, insomnia, decreased appetite, loss of coordination, tremors, flushed skin, vomiting, and/or abdominal pain. Anxiety, psychosis, hostility, aggression, suicidal or homicidal ideation have also been observed. Abusers of CNS stimulants may chew, snort, inject, or use other unapproved routes of administration which can result in overdose and death [see Overdose]. To reduce the abuse of CNS stimulants including Quillivant XR, assess the risk of abuse prior to prescribing. After prescribing, keep careful prescription records, educate patients and their families about abuse and on proper storage and disposal of CNS stimulants, monitor for signs of abuse while on therapy, and re-evaluate the need for Quillivant XR use.

Dependence: Tolerance: Tolerance (a state of adaptation in which exposure to a drug results in a reduction of the drug’s desired and/or undesired effects over time) can occur during chronic therapy with CNS stimulants including Quillivant XR. Dependence: Physical dependence (a state of adaptation manifested by a withdrawal syndrome produced by abrupt cessation, rapid dose reduction, or administration of an antagonist) can occur in patients treated with CNS stimulants including Quillivant XR. Withdrawal symptoms after abrupt cessation following prolonged high-dosage administration of CNS stimulants include extreme fatigue and depression.

**OVERDOSAGE**

Signs and Symptoms: Signs and symptoms of acute methylphenidate overdosage, resulting principally from overstimulation of the CNS and from excessive sympathomimetic effects, may include the following: nausea, vomiting, diarrhea, restlessness, anxiety, agitation, tremors, hyperreflexia, muscle twitching, convulsions (may be followed by coma), euphoria, confusion, hallucinations, delirium, sweating, flushing, headache, hypertension, tachycardia, palpitations, cardiac arrhythmias, hypertension, hypotension, tachypnea, mydriasis, and dryness of mucous membranes. Management of Overdose: Consult with a Certified Poison Control Center for up-to-date guidance and advice on the management of overdosage with methylphenidate (1-800-222-1222). Provide supportive care, including close medical supervision and monitoring. Treatment should consist of those general measures employed in the management of overdosage with any drug. Consider the possibility of multiple drug overdosage. Ensure an adequate airway, oxygenation, and ventilation. Monitor cardiac rhythm and vital signs. Use supportive and symptomatic measures.

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**Breast-feeding and antidepressants.** Any medication used during lactation should be assumed to pass into breast milk, although rigorous studies quantifying amounts of antidepressants in breast milk and infant serum generally have demonstrated low levels of exposure among the better studied antidepressants. Studies that inform extent of drug exposure during lactation have included mothers who have provided serial samples of breast milk and allowed their infant’s blood levels to be checked for the drug. See Table 2 (page 16) for details regarding specific antidepressants and breast-feeding.

Lactation exposure to paroxetine and sertraline has been most studied, and both have been nondetectable or found in low amounts in infant drug assays. Because fluoxetine has a longer half-life than other antidepressants, it may be more likely to be detected in infant blood sampling, with higher doses more likely to be detected than lower doses. Decisions to breast-feed while taking medication must take into account unknown long-term effects of antidepressant exposure. There are a few case reports of suspected adverse events associated with antidepressant use during lactation.

**The psychiatrist’s role**

PPD has great public health significance because it affects a large number of women...
Drug Brand Names

- Bupropion • Wellbutrin
- Zyban
- Citalopram • Cedia
- Desvenlafaxine • Prixtiq
- Duloxetine • Cymbalta
- Escitalopram • Lexapro
- Fluoxetine • Prozac
- Fluvoxamine • Luvox

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Related Resources


References


Bottom Line

Screening for postpartum depression (PPD) may improve identification of the illness but has not been shown to improve long-term outcomes. Treatment options include antidepressants and psychotherapy. A surprisingly small evidence base exists regarding antidepressant treatment of PPD, although there is no evidence that postpartum women respond differently to antidepressants than depressed individuals who are not postpartum.