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# The Importance of Early Diagnosis and Treatment of Postpartum Depression

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## Abstract

Postpartum depression (PPD) is a major depressive episode following childbirth that can have serious consequences affecting the family. Consequences range from marital problems and issues with child development to maternal suicide and infanticide. Depression in mothers can lead to cognitive and social impairment in the child as well as paternal postpartum depression in the father. Due to the severity of these problems, it is important to diagnose and treat mothers as soon as possible. There are several symptoms that are evident in mothers suffering from PPD that lead to a diagnosis. Symptoms are similar to those of major depressive episodes, but they occur 24 hours to several months postpartum. Treatment options for PPD include psychotherapy as well as tricyclic antidepressants and selective serotonin reuptake inhibitors. While these medications have been shown to be the most effective pharmacological options, more research needs to be conducted to establish their effects on the infants. The possibility of preventative therapy also needs to be addressed to minimize the long-term effects of the disorder.

## Introduction

Postpartum depression (PPD) is a major depressive episode in which onset usually occurs within four weeks of delivery and affects approximately 13 percent of postpartum women.<sup>1,2</sup> This disorder can be damaging to the mother and the rest of the family. It may result in marital problems as well as emotional, behavioral and interpersonal problems in the child subject to this situation.<sup>3</sup> While severe postnatal depression is easily detected, less severe presentations can be easily dismissed as normal or natural consequences of childbirth. Failure to recognize postpartum mood disturbances can possibly lead to tragic consequences for the mother and/or child, most notably maternal suicide and infanticide.<sup>3</sup> Due to these serious consequences, early diagnosis and appropriate intervention(s) are imperative for the health and well-being of the family.

## Symptoms and Risk Factors

Symptoms of postpartum depression, also known as puerperal depression, are listed in Table 1.

Table 1. Symptoms of postpartum depression<sup>1</sup>

Depressed mood	Fatigue or loss of energy
Marked loss of interest in most activities	Feelings of worthlessness
Significant weight loss or gain	Excessive or inappropriate guilt
Insomnia or hypersomnia	Diminished ability to think or concentrate
Psychomotor agitation or retardation	Recurrent thoughts of death

Diagnosis requires that five of these symptoms be present during a two-week period and that at least one of them is either depressed mood or marked loss of interest in virtually all activities. A woman is at a greater risk of developing PPD if she was depressed during pregnancy, experienced anxiety or a stressful life event during pregnancy, had low levels of social support (including marital support), or had a history of depression.<sup>3</sup> Other risk factors for PPD include annual income of less than \$20,000, less than a college education, low occupational prestige, single marital status and multiple offspring.<sup>5</sup> These issues may be stressors that lead to increased anxiety and risk of depression. Maternity blues are another possible predictor of PPD.<sup>6</sup> The blues are described by mild depressive symptoms, tearfulness, sorrow, unstable moods, anxiety and confusion. These symptoms usually peak within three to five days after birth and can last a couple of hours to a couple of weeks. Prevalence of maternity blues is estimated between 40-60 percent of postpartum women.

Fathers also may experience postpartum depression. The number one risk factor for paternal postpartum depression is maternal depression.<sup>4</sup> Fathers are 2.5 times more likely to become depressed if they have a depressed partner. If both parents are depressed, this may negatively impact the development of their child. For men, the most important risk factor to note is a partner with PPD. Fathers also are at an increased risk if they have a history of depression or comorbidities, including obsessive-compulsive disorder (OCD) or anxiety. Some possible biologic risk factors include low testosterone, cortisol, vasopressin, or prolactin levels or dysregulation of estrogen levels. PPD in fathers is also an important area of study because it can adversely affect the development of the child, similar to a mother suffering from the illness.

## Impact of PPD

In an effort to determine the effects of PPD on an infant, researchers contacted mothers nine months postpartum who had reported low to high levels of depression two days after giving birth.<sup>7</sup> There were 100 women included in the study, 45 percent of whom were first-time mothers. To eliminate any other contributing factors, the study included only mothers in stable relationships who were healthy and educated and delivered a healthy full-term infant. The mothers were divided into three groups: those who were diagnosed with major depressive disorder at nine months postpartum (22 mothers), those diagnosed with an anxiety disorder at nine months postpartum (19 mothers), and those who were not anxious or depressed nine months postpartum (59 mothers). The study included two home visits. At the first visit, the mothers were assessed using DSM IV and self-report measures, while the second visit involved taping the mothers playing with their infants. The infants were shown increasingly scary masks to assess fear responses. Saliva samples also were taken from both the mothers and the infants to assess cortisol levels, a stress hormone. The infants were evaluated on essential behaviors necessary for social-emotional growth, including levels of sensitivity, intrusiveness, social engagement, withdrawal, fear regulation and cortisol reactivity. The infants with depressed mothers scored the lowest in all of these

areas. Mothers who are depressed show a decreased sensitivity toward their infants, which can inhibit social skills that must be learned through modeling. Sensitivity from the mother, shown by actions such as giving the child attention and time to rest, helps an infant adapt to a changing environment. Since the infants of depressed mothers lack this attention, they are more likely to have an increased fear response and cry more often. Infants who have not learned to regulate their fear will be more prone to anxiety disorders in later stages of life.

A child is more likely to develop improperly if both parents are depressed.<sup>4</sup> Research shows that a child raised with unresponsive or chaotic parenting may have increased cortisol levels, which can hinder brain development, physiological growth and immune system maturity. The cognitive and emotional regulation in an infant can be decreased as a result of lack of maturation of the orbitofrontal cortex due to a poor interaction between a depressed parent and the infant. Paternal interaction with an infant is important for a child's cognitive, emotional and social development. Some explanations for the effects of paternal depression on a child's behavior include poor father-child interactions, increased marital conflict (indirect effects), and genetic predisposition.<sup>5</sup> Children with depressed fathers show greater evidence for behavioral and conduct problems, including hyperactivity disorders.<sup>4</sup> This relationship seems to be greater in boys than in girls. Paternal depression also has been associated with low psychosocial functioning, leading to an elevated suicidal ideation and attempt rates in sons and depression in daughters. Tests show that paternal depression is strongly associated with increased risk of high total problem scores on the Rutter preschool scales and with high scores on the three problem subscales (emotional, conduct and hyperactivity). These problems become evident in children ages 3 to 5.

### Treatment

Treatment and recovery time for postpartum depression (PPD) varies based on the severity of the depression symptoms experienced by the mother.<sup>9</sup> There are a number of management options available for women who experience PPD, and, as with many other psychological disorders, it is better to treat the conditions immediately following diagnosis. Postpartum depression can begin anywhere from 24 hours to several months after delivery and in some severe cases can last up to two years. Clinical evidence has shown that sex steroids, like estrogen, have effects on the areas responsible for mood and cognition in the central nervous system.<sup>10</sup> When childbirth occurs, there is a rapid drop in estrogen in a woman's body that is thought to trigger depressive symptoms. Currently, estrogen replacement therapies are being investigated for possible prophylactic use in some women; however, until more information is available on hormone-based treatments, management for PPD is still based on non-puerperal depression.

The first line of therapy for a woman experiencing the signs of PPD is often psychotherapy.<sup>10</sup> This is heavily due to the fact that mothers who breastfeed want a nonpharmacologic option to avoid exposing their newborn to antidepressant medications. Counseling from a trained clinical psychologist or psychiatrist is often beneficial for both new mothers and fathers to find ways to cope with their feelings, solve problems and set realistic goals for parenting. The partner or the significant other also should be well-informed of the nature of PPD. While it is beneficial to support the mother, the significant other may be experiencing depres-

sion as well due to the anxiety and changing roles that parenting brings. Knowing that they have someone to talk to can take stress off of both parents and, in turn, help depression symptoms. For some, marital or family therapy may be beneficial as well.

For more severe cases of PPD that are not manageable through psychotherapy alone, there are many antidepressant treatment options available through prescription. If a mother is finding it difficult to take care of her baby or herself, or is having thoughts of harming herself or the child, she should talk to her doctor to weigh the benefits along with the potential risks of antidepressant therapy. In most cases, the benefits will outweigh the risks in women with moderate to severe PPD. The most frequently prescribed antidepressants for both puerperal and non-puerperal depression have been tricyclic antidepressants, including imipramine, desimipramine, amitriptyline and nortriptyline.<sup>11</sup> These medications are thought to interfere with the reuptake of norepinephrine and serotonin. These four agents are all rated by the American Academy of Pediatrics (AAP) as drugs "of concern" and are not recommended for use by lactating mothers, although they are not currently contraindicated by the Food and Drug Administration.<sup>12</sup> However, the selective serotonin reuptake inhibitors (SSRIs), such as fluoxetine, sertraline, paroxetine and fluvoxamine, which have a higher specificity for blocking serotonin reuptake, may be better tolerated and have an advantage of once-daily dosing.<sup>9</sup> The SSRI chosen is an important issue for lactating mothers. In the case of some SSRIs, such as paroxetine and sertraline, although the agents are excreted in the breast milk, infants are exposed to a relatively low dose of the drug, with serum concentrations not even detectable in the children. No adverse effects have been reported, and, although the medication is considered to be "of concern" due to the excretion of the drugs, it may be used if it is deemed that the benefits of treatment outweigh risks to the child. Other SSRIs (escitalopram, citalopram) are excreted in the breast milk in higher quantities than sertraline or paroxetine, causing the infant to be potentially exposed to a greater amount of drug. Side effects such as excessive somnolence, decreased feeding and irritability have been reported in infants exposed to these medications through breast milk. However, the manufacturers state that the decision for a breast-feeding mother to use these agents should be based on risk to the infant versus therapeutic benefit to the mother. The FDA recommends that fluoxetine not be taken when breastfeeding due to excretion in the breast milk along with measurable serum concentrations, which can be seen in the child. Colic, slow weight gain and sleep disorders have been associated with infants exposed to this medication. As a result, the drug is not recommended by the manufacturer for use in lactating mothers.<sup>13</sup>

As with most antidepressant medications, patients typically show improvement of symptoms within two to four weeks of starting the medication.<sup>9</sup> If no improvement has been seen during the first two weeks of therapy, the dose of the medication can be increased. Further increasing of the antidepressant should occur no sooner than seven days after the last dosage increase. If there is no clinical improvement in six to eight weeks, the mothers should be referred to a psychiatrist for a psychological evaluation. Although the duration of treatment has not been specifically established, a rough estimate of nine to 12 months has been suggested in women experiencing their first episode of PPD.

### Conclusion

Childbirth is a stressful situation that causes many changes in the lives of the new parents. This new adjustment can cause significant changes in the mood and behavior of the parents, which may lead to cognitive and social impairment in the child. Managing the disorder is important for the mental health of the parents and the development of their children both emotionally and behaviorally. Tricyclics and SSRIs are currently the most effective pharmacologic treatments for mothers suffering from PPD. However, more research needs to be conducted to determine the effect of these medications on the infant and if prevention therapy can be utilized before the child is born. More studies regarding the effects of childbirth on men, their potential to develop PPD and possible treatment options should also be completed.

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