

# Postpartum Mood Disorders: Diagnosis and Treatment Guidelines

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Mood disturbance occurs commonly during the postpartum period. The symptoms may be transient and relatively mild (as in postpartum blues) or may be associated with significant impairment of functioning (as in postpartum depression and puerperal psychosis). Despite the prevalence of postpartum mood disorders, depressive symptoms that emerge during the puerperium are often overlooked. Puerperal affective illness places the mother at risk for the development of recurrent depression and has also been associated with significant long-term effects on child development and behavior. Therefore, the prompt recognition and efficacious treatment of puerperal mood disorders are essential in order to avoid adverse outcomes for both mother and infant. This article discusses the evaluation of postpartum mood disturbance and offers guidelines for the treatment of affective illness during the puerperium.

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The postpartum period has typically been considered a time of increased risk for the development of affective illness in women. In one of the most frequently cited studies of affective disorder during the puerperium, Kendell and colleagues<sup>1</sup> describe a sharp peak in the number of psychiatric admissions during the first 3 months after delivery. Subsequent studies have revealed that women hospitalized during the postpartum period suffer most commonly from an affective illness, either unipolar depression or bipolar disorder.<sup>2-4</sup>

Puerperal mood disturbance has been conceptualized as a spectrum of illnesses specifically related to childbirth and therefore a distinct diagnostic entity.<sup>5</sup> However, recent evidence suggests that mood disturbance emerging during the puerperium may not differ significantly from the affective illnesses that occur in women at other times. Large, population-based studies have revealed similar rates of minor and major depression in puerperal and nonpuerperal cohorts.<sup>6-9</sup> While the postpartum period may not be a period of distinct risk for all women, various subgroups of women may be particularly vulnerable to either the onset or the reemergence of affective illness during the postpartum period. It appears that at greatest risk are those women

with histories of mood disorder<sup>1,2,6,10-12</sup> and those who experience depression during pregnancy.<sup>11,13,14</sup>

Given the prevalence of mood disturbance during the puerperium, it is most striking that the diagnosis of postpartum affective illness is so commonly missed. The postpartum period, although typically depicted as a time of unqualified happiness and excitement, is more realistically experienced as a time of significant stress. Perhaps because of this divergence between expectation and reality, the emergence of affective illness during the puerperium is often overlooked or ignored by both patients and caregivers. It is common for women to report the persistence of depressive symptoms for many months before the initiation of treatment.<sup>7,15</sup> Although the symptoms of depression may remit spontaneously, many women are still depressed 1 year after childbirth.<sup>15</sup> The reasons for this delay in treatment are not well understood. What is clear, however, is the significant impact of untreated depression on both mother and infant. Untreated depression may contribute to the development of a chronic and refractory mood disorder in the mother.<sup>16-18</sup> Also, significant data demonstrate the deleterious effect of maternal depression on the cognitive, emotional, and social development of the child.<sup>19-22</sup> Given these significant risks, the prompt diagnosis and efficacious treatment of postpartum mood disorders are essential.

## CLASSIFICATION AND DIAGNOSIS

Postpartum depressive disorders are typically divided into three categories: (1) postpartum blues, (2) nonpsychotic postpartum depression, and (3) puerperal psychosis. It is helpful to conceptualize these disorders as existing along a continuum, as there may be overlap between

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these categories. Although there are obvious differences in the severity of these subtypes, it is not clear if they actually represent three distinct disorders.

Postpartum blues is by far the most commonly observed puerperal mood disturbance, with estimates of prevalence ranging from 30% to 75%.<sup>9,23</sup> Characteristic symptoms include mood lability, irritability, tearfulness, generalized anxiety, and sleep and appetite disturbance.<sup>24-26</sup> These symptoms begin within a few days of delivery and persist for up to several days. Postpartum blues are, by definition, time-limited and are relatively benign; symptoms typically peak on the fourth or fifth day after delivery and remit by the tenth postpartum day. The occurrence of postpartum blues does not necessarily reflect psychopathology in the mother; however, should these symptoms persist beyond 2 weeks postpartum, further evaluation is indicated to rule out the evolution of a more significant affective disorder.<sup>23</sup> Those women with postpartum blues who also have histories of recurrent mood disorder require close monitoring, as data suggest that blues may herald the development of a major depressive episode particularly in women with prior affective illness.<sup>15,23,27,28</sup>

Postpartum depression is relatively common. Recent data reveal rates of postpartum major depression of between 10% and 15%, estimates that are similar to the rates of depression observed in nonpuerperal cohorts.<sup>6-8,11</sup> Although most women present with depressive symptoms within the first month after delivery, depression sometimes develops late in the course of pregnancy.<sup>29</sup> The signs and symptoms of postpartum depression are generally indistinguishable from those associated with major depression occurring at other times and include depressed mood, anhedonia, low energy, and guilty ruminations. Suicidal ideation is frequently reported. Although few studies have evaluated the prevalence of comorbid psychiatric illness in patients with postpartum depression, anxiety and obsessionalism are prominent in women with puerperal illness.<sup>5,30,31</sup>

Postpartum psychosis is a rare condition, which occurs in approximately 1 to 2 per 1000 women (0.1%–0.2%) after childbirth.<sup>1,32</sup> The presentation is dramatic with onset as early as the first 48 to 72 hours postpartum. For the majority of women with puerperal psychosis, symptoms develop within the first 2 weeks after delivery. The earliest symptoms are typically restlessness, irritability, and sleep disturbance. In general, puerperal psychosis evolves rapidly and is characterized by depressed or elated mood, disorganized behavior, mood lability, and delusions and hallucinations.<sup>33</sup> There has been considerable debate as to whether postpartum psychosis is a discrete diagnostic entity or whether it represents a rapidly evolving affective psychosis.<sup>34,35</sup> Some have suggested that puerperal psychosis may be clinically distinct in that it is more commonly associated with delirium and confusion than nonpuerperal affective psychosis.<sup>32,33,36</sup>

While fulminant postpartum depression and psychosis are easily detected, less severe presentations of depressive illness are frequently missed. In fact, postpartum depressive symptoms are often dismissed by both patients and caregivers as normal or natural consequences of childbirth. In addition, screening for postpartum mood disturbance can be difficult given the number of somatic symptoms typically observed during the acute postpartum period that are also associated with major depression (e.g., sleep and appetite disturbance, diminished libido, and low energy). Various rating scales have been used to facilitate the diagnosis of depression in nonpuerperal populations (e.g., Beck Depression Inventory, Kellner Symptom Questionnaire<sup>37,38</sup>) but have not been validated in puerperal populations of women. In contrast, the Edinburgh Postnatal Depression Scale (EPDS)<sup>39,40</sup> is a 10-item, self-rated inventory that has been used extensively for the diagnosis of postpartum depression and has demonstrated satisfactory sensitivity and specificity in the puerperal population. Although not commonly employed, these scales could easily be integrated into the routine evaluation of women in both obstetrical and pediatric settings and would alert the physician to those women who need a more thorough psychiatric evaluation.

## RISK FACTORS

The puerperium is a period during which significant physiologic and psychosocial changes occur. The extent to which a rapidly changing hormonal environment influences the emergence of affective illness has been considered by many<sup>41-43</sup>; however, one cannot underestimate the importance of psychosocial factors<sup>28,44</sup> and biologic vulnerability<sup>6,11</sup> in the development of affective illness during the postpartum period. Given the multiplicity of these factors and the complexity of their interactions, it is extremely difficult to reliably predict who will experience postpartum mood disturbance.

Many groups have investigated the relationship between risk for postpartum blues and depression and various demographic variables including age, marital status, parity, education level, socioeconomic status, and obstetric factors.<sup>11,14,28,29,45</sup> However, there is little consistent evidence to suggest that any particular demographic factor places a woman at increased risk for puerperal affective illness. Several studies have demonstrated that negative life events during pregnancy or at the time of delivery appear to increase the likelihood of postpartum depressive illness.<sup>11,23,28,44,45</sup> Women with inadequate social supports and poor marital relationships appear to be particularly vulnerable to the development of postpartum depression.<sup>7,28,29,44</sup>

Given the relative rarity of puerperal psychosis, it has been difficult to study risk factors associated with this subtype of postpartum illness. Some data suggest that primip-

arous women are at greater risk than multiparous women for the development of postpartum psychosis.<sup>1,32</sup>

In contrast, there is a well-defined association between all types of postpartum affective illness and a personal history of affective disorder. The women at greatest risk appear to be those with a history of postpartum psychosis; authors have reported rates of postpartum relapse as high as 70%.<sup>2,32,35</sup> Women with histories of bipolar disorder are also at significant risk, with rates of relapse ranging from 20% to 50%.<sup>1,2,12,46,47</sup> The extent to which a history of major depression influences a woman's risk for postpartum illness is less clear.<sup>10,14,23,49</sup> As compared with women who have experienced only nonpuerperal depressive episodes, those women with histories of postpartum depression are clearly at greater risk, with rates of postpartum recurrence as high as 50%.<sup>48,49</sup> Those with histories of mild-to-moderate affective illness who remain euthymic during pregnancy are probably at lower risk for postpartum depression than women who experience worsening of mood during pregnancy.<sup>6,13,14</sup>

While the literature describes certain subgroups of women who appear to be at heightened risk for postpartum mood disturbance, it is more difficult to predict which women in the general population are likely to develop puerperal depressive illness. It is therefore advisable to screen all women for depression during the postpartum period. Perhaps the greatest obstacle to the diagnosis of postpartum depression is the extent to which clinicians fail to inquire about affective symptoms in women during the postpartum period. The standard postpartum obstetrical visit at 6 weeks and subsequent pediatric appointments are ideal times to screen for postpartum depressive illness. Screening at these visits by obstetricians and pediatricians should be routine. This screening is an opportunity to evaluate women previously identified as being "at risk" for postpartum mood disturbance and to ensure the early identification of mood disturbance in women without histories of psychiatric illness.

## TREATMENT

As in nonpuerperal depression, postpartum depressive disorders present along a continuum. Patients may experience mild or moderate depressive symptoms, as well as a more severe depression characterized by prominent neurovegetative symptoms and marked impairment of functioning. Approach to the patient should be guided by the severity of the symptoms and the degree of impairment.

As postpartum blues are self-limited and typically mild in severity, no specific treatment other than support and reassurance is indicated. The patient should be educated that these symptoms are normal and are typically of short duration; however, she should also be instructed to contact her obstetrician if the symptoms persist beyond the second postpartum week to ensure early detection of a more severe affective illness.

**Table 1. Postpartum Depression Treatment Studies**

Study	Design
Sertraline <sup>50</sup>	Open
Venlafaxine <sup>51</sup>	Open
Fluoxetine <sup>52</sup>	Double-blind
Estrogen <sup>53</sup>	Double-blind
Progesterone <sup>54</sup>	Open
Cognitive behavioral therapy <sup>52</sup>	Open
Interpersonal psychotherapy <sup>55,56</sup>	Open

Despite the high prevalence of postpartum depression, only a limited number of studies have assessed the efficacy of both pharmacologic and nonpharmacologic therapies for the treatment of this disorder (Table 1).<sup>50-56</sup> In the absence of systematically derived data, postpartum major depression demands the same course of treatment as nonpuerperal major depression. There is, however, an apparent tendency to treat women with postpartum depression with less intensity than nonpuerperal patients. This appears to be the case with respect to both dose and duration of treatment. As data do not suggest that an episode of postpartum major depression should be managed differently than a nonpuerperal episode, women with nonpsychotic postpartum depression should be treated for similar periods of time and with comparable doses as described for patients with nonpuerperal depressive illness. Inadequate treatment during the postpartum period places women at risk for the sequelae of untreated affective illness, including a pattern of chronic depression and recurrent, refractory disease.<sup>7,16-18</sup>

To date, only a small number of studies have assessed the efficacy of antidepressant medications in the treatment of postpartum mood disturbance.<sup>50-52</sup> The majority of these studies have been open trials, although more recent investigations have employed a double-blind design. Several studies demonstrate the efficacy of antidepressants (e.g., fluoxetine,<sup>52</sup> sertraline<sup>50</sup>) in the treatment of postpartum major depression and are reassuring. There are also preliminary data demonstrating the efficacy of venlafaxine in women with postpartum depression.<sup>51</sup> In all these studies, standard antidepressant doses were effective and well-tolerated.

Women who are breastfeeding must be informed that all psychotropic medications, including antidepressants, are secreted in the breast milk at varying concentrations.<sup>57</sup> Data do not suggest that one antidepressant is safer than another for women who breastfeed. Therefore, selection of an antidepressant should be based on prior response to antidepressants and side effect profile. The frequency of severe complications related to neonatal exposure to psychotropic medications in breast milk appears to be very low; however, the effects of even trace amounts of medication on the developing brain are unknown.

The postpartum period is associated with rapid shifts in the reproductive hormonal environment.<sup>41</sup> Plasma lev-

els of estrogen decline to prefollicular levels within the first 48 hours postpartum. Plasma levels of progesterone also fall dramatically during the acute puerperium. With growing evidence to suggest that estrogen exerts both direct and indirect effects on the neuromodulating systems involved in the pathogenesis of affective illness,<sup>58,59</sup> several investigators have explored the extent to which hormonal manipulation may be effective in the treatment of postpartum mood disturbance.<sup>52,53</sup>

Several authors have suggested that treatment with progesterone may be helpful in the management of postpartum major depression.<sup>53</sup> To date, no systematically derived data support the use of progesterone in the treatment of puerperal mood disturbance. Furthermore, some have demonstrated that progesterone may exacerbate symptoms of depression in women with mood disorders.<sup>60</sup> Further investigation is needed to determine the usefulness of progesterone in the treatment of postpartum mood disorders.

In a recent study investigating the potential efficacy of estrogen for women with postpartum major depression, Gregoire and colleagues<sup>53</sup> described the benefit of transdermal estrogen therapy in a double-blind, placebo-controlled study. Although this study was relatively small and was confounded by the inclusion of patients treated with antidepressant medication before receiving hormonal therapy (47% of the treatment group), this is the first study to demonstrate that estrogen either alone or possibly when used as an adjunct to an antidepressant has putative efficacy in the treatment of postpartum major depression. This research highlights the need for further investigation of the use of estrogen either to accelerate or to potentiate the response to antidepressant treatment in patients with postpartum affective disorder.

Nonpharmacologic therapies have also been employed in the treatment of postpartum depression, yet limited data support the efficacy of these interventions.<sup>61,62</sup> Interpersonal therapy (IPT) is a time-limited and interpersonally oriented psychotherapy that has been used successfully to treat acute episodes of depression.<sup>63-65</sup> A recent pilot study suggests the efficacy of this nonpharmacologic intervention for women with mild-to-moderate postpartum major depression.<sup>55,56</sup> Appleby and colleagues<sup>52</sup> have recently demonstrated that short-term cognitive-behavioral therapy (CBT) is as effective as fluoxetine in the treatment of postpartum depression. These nonpharmacologic interventions may be particularly useful for those patients who are reluctant to take antidepressant medications or for patients with milder forms of depressive illness. A larger study of IPT is currently being conducted by O'Hara and colleagues and may help to clarify the extent to which IPT and similar techniques are effective for patients who suffer from postpartum mood disturbance of varying severity.

In cases of severe postpartum depression, inpatient hospitalization may be required, particularly for those patients who are at risk for suicide. In Great Britain, innovative

treatment programs involving joint hospitalization of the mother and baby have been successful<sup>66</sup>; however, mother-infant units are much less common in the United States.<sup>67</sup> Electroconvulsive therapy (ECT), which is rapid and effective, should be considered early for those suffering from severe postpartum illness. Stowe and colleagues<sup>68</sup> have advocated a protocol using three ECT treatments over a period of 4 days and have reported an average hospitalization of 6 days. In all cases, it is important to consider the impact of prolonged hospitalization of the mother on infant development and attachment.

Puerperal psychosis is considered a psychiatric emergency and typically requires inpatient treatment. Given the well-established relationship between puerperal psychosis and bipolar disorder,<sup>1</sup> some have argued that postpartum psychosis is indistinguishable from a manic psychosis and should be treated similarly.<sup>69</sup> Acute treatment with mood stabilizers and antipsychotic medications is appropriate. ECT is very useful and time-efficient. Failure to treat aggressively (almost always in an inpatient setting) places mother and baby at increased risk of harm. In fact, rates of infanticide associated with untreated puerperal psychosis have been estimated to be as high as 4%.<sup>2,70</sup> Whether all patients should subsequently be treated with prophylactic mood stabilizers for an indefinite period of time is somewhat controversial, although several studies suggest that recurrent affective disorder is the rule following an episode of puerperal psychosis.<sup>2,34,36</sup>

#### **AT-RISK GROUPS: IMPLICATIONS FOR PROPHYLAXIS**

The extent to which women in the general population are at risk for the development of postpartum mood disturbance is debatable. However, the early identification of those women at greatest risk for the development of a puerperal mood disorder is the first step in the prevention of postpartum affective illness. As discussed earlier in this text, a growing body of literature suggests that certain subgroups of women are at particular risk for puerperal worsening of mood. The risk of relapse varies by subtype. Women with previous episodes of major depression have a 30% risk of relapse; women with a history of bipolar disorder or those who have experienced postpartum depression have a 50% chance of relapse; and women with a history of postpartum psychosis are at a 70% risk for relapse of mood disturbance after delivery.<sup>1,2,6,10-14</sup>

Given the heightened risk for postpartum relapse in various subgroups of women, the appropriateness of prophylactic intervention has been explored by several investigators.<sup>54,57,71-76</sup> Several studies have demonstrated that women with histories of bipolar disorder or puerperal psychosis benefit from prophylactic lithium instituted either prior to delivery (at 36 weeks gestation) or no later than the first 48 hours postpartum.<sup>71-75</sup> Lithium, however, is

**Figure 1. Postpartum Depression: Risk Factors and Treatment Options\***

Diagnosis	Risk	Treatment Options
Without history of psychiatric illness		
Postpartum blues	L	
History of subsyndromal depression	O	Observation Consider prophylaxis with IPT
Past history of MDD (currently euthymic without medication)	W	
History of postpartum depression without recurrent nonpuerperal depression	M O D	Close observation Consider prophylaxis with antidepressant
History of cyclothymia	E R A	Close observation Consider lithium prophylaxis
History of severe recurrent MDD (euthymic following medication discontinuation)	T E	Close observation Consider prophylaxis with antidepressant
History of postpartum depression with recurrent MDD	H I	Consider prophylaxis with antidepressant
History of severe recurrent MDD (euthymic on treatment during pregnancy)	G H	Continue antidepressant
Depression during pregnancy	H I G	Treatment with antidepressant
History of bipolar disorder (I or II)	H E S	Lithium prophylaxis
History of puerperal psychosis	S T	Lithium prophylaxis

\*Abbreviations: IPT = interpersonal therapy, MDD = major depressive disorder.

typically avoided in women who are breastfeeding, as lithium levels in breast milk are high and may cause significant neonatal toxicity.<sup>77</sup> Although other mood stabilizers (i.e., valproic acid and carbamazepine) may be safer to use while breastfeeding, the efficacy of these agents has not yet been assessed in the puerperal population.

Yet to be adequately investigated is the extent to which other populations of women may also benefit from prophylactic treatment with either mood stabilizers or antidepressants. In a pilot study performed by Wisner and colleagues,<sup>57</sup> these investigators describe benefit of prophylactic antidepressants in women with histories of postpartum depression (with and without recurrent nonpuerperal depression).

The potential role of hormonal manipulation in the prophylaxis of puerperal illness has also been investigated. Progesterone has been administered to women during the puerperium, although its prophylactic efficacy has not clearly been established.<sup>54</sup> Sichel and colleagues<sup>76</sup> have described the prophylactic use of high doses of an oral estrogen preparation in a subgroup of women with histories of severe postpartum depression but without intervening episodes of nonpuerperal affective illness. In this open study, estrogen appeared to reduce risk for recurrent illness in this specially selected subgroup of women. The extent to which estrogen may limit risk in other women, specifically those with histories of nonpuerperal depressive illness, is unknown and merits further investigation.

Psychosocial interventions, such as psychoeducational and supportive groups, are frequently included in the care of women during the postpartum period. The extent to which these interventions are effective in preventing postpartum mood disturbance has not been systematically

studied. Several investigators have explored the use of psychoeducational groups during pregnancy and the postpartum period and have demonstrated a significant reduction in the incidence of postpartum depression in women who received this intervention as compared with untreated controls.<sup>78,79</sup> IPT has been used successfully in nonpuerperal cohorts with major depression to prevent recurrence.<sup>63,80</sup> Though not yet studied in the puerperal population, IPT and similar techniques may be performed prophylactically during the postpartum period and may be of some value. Those providers who routinely participate in acute and short-term postpartum care (e.g., visiting nurses) may be ideally suited to both screen for and intervene in cases of postpartum distress or mood disturbance.

In summary, prophylaxis against postpartum depressive illness may be envisioned along a continuum where some women are at low risk while others appear to be at high risk for puerperal decompensation. This spectrum of patients at risk for puerperal mood disturbance and the potential role of pharmacologic and nonpharmacologic prophylaxis are outlined in Figure 1. While a less aggressive, "wait-and-see" attitude is appropriate for women with postpartum blues or women at low risk for postpartum illness, women at high risk deserve not only close monitoring but specific prophylactic measures. Further characterization of these subgroups of women and the prophylactic treatments suited to each is clearly warranted.

## CONCLUSION

Postpartum psychiatric illness consists of a highly prevalent group of disorders that affect women during the childbearing years. While the postpartum blues are typi-

cally benign and self-limited, postpartum depression and puerperal psychosis cause significant distress and dysfunction. Despite multiple contacts with the medical profession by women during the postpartum period, puerperal mood disorders are frequently missed, and many women go without treatment. Untreated mood disorders place the mother at risk for recurrent disease. Furthermore, maternal depression has been associated with long-term cognitive, emotional, and behavioral problems in the child.

Health professionals who care for women during pregnancy and the puerperium should try to identify postpartum mood disorders early and treat them appropriately. Effective treatments are available and include both pharmacologic and nonpharmacologic therapies. For certain subgroups at high risk for puerperal illness, there is also the possibility of effective pharmacologic prophylaxis. Failure to recognize postpartum illness places both the mother and child at risk.

*Drug names:* carbamazepine (Tegretol and others), fluoxetine (Prozac), sertraline (Zoloft), valproic acid (Depakene and others), venlafaxine (Effexor).

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