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When Depression Complicates Childbearing: Guidelines for Screening and Treatment during Antenatal and Postpartum Obstetric Care

Maria Muzik, MD, MS^a, Sheila M. Marcus, MD^b, Julie E. Heringhausen, BSN^c, and Heather Flynn, PhD^d

^a Assistant Professor, Department of Psychiatry, University of Michigan, Ann Arbor, MI

^b Clinical professor, Child and Adolescent Psychiatry, University of Michigan, Ann Arbor, MI

^c Medical Student, University of Michigan Medical School, Ann Arbor, MI

^d Assistant Professor, Department of Psychiatry, University of Michigan, Ann Arbor, MI

Synopsis

Prevalence studies show that one in five women experience an episode of major depressive disorder during their lifetime. The peripartum period constitutes a prime time for symptom exacerbation and relapse of depressive episodes. It is important for health care providers, specifically those in obstetric care, to be aware of (1) the frequency of depression in pregnant and postpartum women; (2) signs, symptoms, and appropriate screening methods; and (3) the health risks for the mother and growing fetus if depression is undetected or untreated. Because management of depressed peripartum women also includes care of a growing fetus or breastfeeding infant, treatment may be complex and requires input from a multidisciplinary team, including an obstetrician, psychiatrist, and pediatrician, to provide optimal care.

Keywords

Depression; Peripartum; Obstetric Care; Infant outcomes; Medication; Psychotherapy

Background and prevalence

Across the United States, prevalence studies show that one in five women experience an episode of major depressive disorder (MDD) during their lifetime.⁷⁴ The onset of depressive symptoms is seen most often between ages 20 and 40, the prime age range for childbearing.¹¹⁴ Studies have shown that 10% to 16% of pregnant or postpartum women

Corresponding author for proof and reprints: Maria Muzik, MD, MS Department of Psychiatry University of Michigan Rachel Upjohn Building 4250 Plymouth Road, Ann Arbor, MI 48109, USA (734) 232-0206 muzik@med.umich.edu.

Coauthor(s) address(es):

Sheila M. Marcus, MD Child and Adolescent Psychiatry, University of Michigan, Rachel Upjohn Building, 4250 Plymouth Road, Ann Arbor, MI 48109, USA (734)764-0245 smmarcus@med.umich.edu

Julie E. Heringhausen, BSN University of Michigan Medical School, 1301 Catherine Street, 5124 MS I, Ann Arbor, MI 48109, USA jheringh@med.umich.edu

Heather Flynn, PhD Department of Psychiatry University of Michigan, Rachel Upjohn Building, 4250 Plymouth Road, Ann Arbor, MI 48109, USA (734) 936-8702 hflynn@med.umich.edu

fulfill the diagnostic criteria for MDD, and even more women experience subsyndromal depressive symptoms, which frequently are overlooked.^{17,58} Because of this correlation with life events, it is important for health care providers to be aware of (1) the frequency of depression in this population; (2) signs, symptoms, and appropriate screening methods; and (3) the health risks for the mother and growing fetus if depression is undetected or untreated. A study by Marcus and colleagues in 2003 found that of pregnant women screened in an obstetrics setting who reported significant depressive symptoms, 86% were not receiving any form of treatment. Although most women seek some prenatal care over the course of their pregnancy,⁸⁵ many women do not seek mental health services because of stigma; thus, antenatal visits to an obstetrician or primary care provider may provide an opportunity for screening and intervention for depression in this high-risk group. Unfortunately, screening procedures alone have not been found to impact depression outcomes⁴⁹. Because management of a depressed, pregnant or postpartum woman also includes care of her growing fetus or her breastfeeding infant, treatment may be complicated and requires an informed, multidisciplinary approach, including input from an obstetrician, psychiatrist, and pediatrician, to provide optimal care.¹

Antenatal Depression

Clinical Features and Risk Factors

The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) defines the diagnosis of depression using the same criteria for men and women, although research shows some variation in female presentation. MDD diagnosis must include existence of depressed or irritable mood or inability to experience pleasure. In addition, four of the following symptoms must be present: feelings of guilt, hopelessness, and worthlessness; sleep disturbance (insomnia or hypersomnia); appetite or weight changes; attention or concentration difficulties; decreased energy or unexplainable fatigue; psychomotor agitation or retardation; and, in severe cases, thoughts of suicide.³ Women may present in a clinic with more seasonal depression or symptoms of atypical depression (eg, hypersomnia, hyperphagia, carbohydrate craving, weight gain, heavy feeling in arms and legs, worse mood in the evenings, and initial insomnia).³ Anxiety and obsessive worries centering on pregnancy outcomes and fetal safety are very common in pregnancy⁹⁹. Many of these symptoms overlap with the physical and mental changes experienced during pregnancy, making them difficult to distinguish, and, therefore, they often are disregarded.⁷⁹

Practitioners caring for pregnant women should be aware of personal and epidemiologic factors that place women most at risk for depression. An important primary risk factor is a previous personal history (particularly during pregnancy or post partum) or a family history of depression.⁵ Another common risk factor is a woman's perception of limited social support and presence of social conflict. Recent literature shows that even when women report adequate social support, if they also report interpersonal conflict, then they are at a high risk for depression.¹¹⁶ Obstetricians and care providers in antenatal clinics routinely address social support for pregnant women and encourage strengthening their support networks. Interpersonal conflict also may be important to address in the clinical

interview.¹¹⁶ Asking questions about feeling let down and unloved, feeling tense from arguing, and the frequency of unpleasant and distressing social interactions may be adequate to screen for social conflict and identify women who would benefit from clinical interventions addressing these interpersonal conflicts.¹¹⁶ Other risk factors for depression include (1) history of physical, emotional, or sexual abuse; (2) history of (or current) cigarette smoking, alcohol consumption, or substance use; (3) stressors, such as financial or occupational obligations; (4) stressful health concerns or relationships;⁹⁹ (5) living alone; and (6) ambivalence about the pregnancy.⁷

Screening

In 2002, the U.S. Preventive Services Task Force published findings noting that a positive answer to either or both of two universal depression screening questions was a quick and effective way to screen for depression: (1) “Over the past two weeks, have you ever felt down, depressed, or hopeless?” or (2) “Have you felt little interest or pleasure in doing things?” Affirmative answers initiate a more in-depth screening tool to gather more information toward the diagnosis.¹⁰⁹ The two measures used most commonly to screen for depression for adults in ambulatory care are the Beck Depression Inventory (2 to 3 minutes to complete)⁴¹ and the revised Center for Epidemiologic Studies Depression Scale (5 to 10 minutes to complete).⁹⁶

The Edinburgh Postnatal Depression Scale (EPDS) is a screening tool used internationally to assess depression during pregnancy and post partum.³¹ The EPDS can screen for postpartum depression as early as early as 3 to 5 days after giving birth with a score greater than 9.5.⁶⁹ If a woman scores higher than 15 during pregnancy or 13 post partum, then a further assessment is necessary for a diagnosis of depression.⁸⁶ Several screening instruments can be used to assess symptom severity and general functioning. One of these is the BASIS-24, a 24-item scale that measures symptoms and general functioning in six major areas: depression/functioning, relationships, self-harm, emotional lability, psychosis, and substance abuse.⁹⁸ Screening tools do not address the duration of symptoms, degree of impairment, or comorbid psychiatric disorders including anxiety disorders⁹¹; thus, if a patient scores beyond the cutoff range for any of these tools, DSM-IV diagnostic criteria should be assessed through further interview.

Regardless of the screening method used, it is important to further question patients who manifest depressive symptoms upon screening. An experienced practitioner may discern whether a patient requires more definitive treatment or if an elevation in score is due to a transient psychosocial stressor. Katon et al have found that using screening tools in conjunction with “depression caremanagers” may improve the quality of care. Such nurse caremanagers provide education, track adherence with medication and psychotherapy, and support the patients in taking an active role in their illness.⁷² In those areas where psychiatrists are available, practices may also benefit from using a collaborative care model with a psychiatric consultant who comanages difficult cases with the primary and antenatal care clinicians during the acute phase of their illness. A recent meta-analysis found that there was a twofold increase in medication compliance over six months with the collaborative care approach compared to patients following only with primary care, and enhanced

functional outcomes were noted in these patients two to five years later.⁵⁴ An obstetric clinic-based study found that antenatal depression screening combined with nurse-delivered feedback and referral did not substantially impact rates of depression treatment use, suggesting the need for additional treatment linkage efforts⁴⁹

It is important to note that most women do not follow through with a mental health referral⁴⁹ and that each woman appears to face unique logistical and psychological barriers to engaging in treatment⁴⁸. Therefore, in order to provide optimal and effective personalized care, clinicians in obstetrics need to ask women about treatment preferences and individual-specific barriers for follow through.

Consequences of depression in pregnancy

Unidentified and untreated depression can lead to detrimental effects on mother and child. Suicide is the most catastrophic possible outcome of undertreated depression. In addition, depressed women are more likely to participate in unhealthy practices during pregnancy, such as smoking and illicit substance abuse. These women have higher rates of poor nutrition, in part because of lack of appetite, leading to poor weight gain during pregnancy and risking intrauterine growth retardation. Depressed women may be less compliant with prenatal care and feel less invested in the care toward their pregnancy. Finally, women who have depression have increased pain and discomfort during their pregnancies, reporting worse nausea, stomach pain, shortness of breath, gastrointestinal symptoms, heart pounding, and dizziness compared with nondepressed women.¹²⁴ Untreated maternal depression in pregnancy has been associated with poor pregnancy and birth outcomes, such as maternal preeclampsia, low birth weight, smaller head circumferences, increased risk for premature delivery, increased surgical delivery interventions, lower Apgar scores, and more admissions to neonatal ICUs.^{22,112125}

Research suggests that maternal depression leads to alteration in a mother's neuroendocrine axis and uterine blood flow, which may contribute to premature delivery, low birth weight, and preeclampsia.^{108,111} Negative birth outcomes are associated most highly with depression symptoms in the second and third trimesters.⁶⁶ Babies of mothers who suffered from depression during their pregnancy have elevated cortisol and catecholamine levels at birth.² These infants cry more often and are more difficult to console than babies born to nondepressed mothers.¹²⁵ Babies of women at high risk for depression are shown to have more irregular sleep patterns and longer amounts of time in bed before falling asleep.⁶⁴ If depression continues into the postpartum period, the risk for long-term effects on a child, such as poor mother-infant attachment, delayed cognitive and linguistic skills, impaired emotional development, and behavioral issues, exist.^{25,504,13} Studies show these babies are fussier, vocalize their needs less, and make fewer positive facial expressions than infants of nondepressed mothers.⁴³ If a baby is exposed to a depressed maternal environment during early infancy, and the mother has recurrent depressive episodes, the child shows changes in neuroendocrine functioning and more behavior problems at school entry.⁴⁰ As these children grow, perhaps because of early exposure or the continued stressful home environment, they are more likely to have emotional instability and conduct disorders, attempt suicide, and require mental health services themselves.^{84,115}

Treatment of depression during pregnancy

There are few current medical standards for treatment of women who have depression during pregnancy, in part because ethical constraints preclude randomized controlled trials using pharmacotherapy during gestation. Most women do not seek treatment, but for those who do, many physicians are unsure of how to balance maternal medication needs with risk for exposure to the growing fetus.³⁵ Because many pregnancies are unplanned and undetected for some time, all women of childbearing age should have their depression managed as if they are or will become pregnant. Primary care providers should engage in preconception planning with all women of childbearing age who have or are at risk for depressive illness. Treatment planning with regard to the use of pharmacotherapy during conception and the first trimester is among the most important decision points for women and their physicians. Obstetricians and other prenatal care providers (e.g., midwives and nurses) play a crucial role during this sensitive time period as they are the primary point persons for pregnant women; these professionals can facilitate the detection of depressive symptoms, support the woman's treatment engagement and provide referral to psychiatry; and they can also support in the decision-making about medication intake or engagement in counseling. Intense communication among providers from a multidisciplinary perspective in the context of a collaborative care model is crucial for optimal pregnancy outcomes. Women diagnosed with depression who have been asymptomatic for over a year may wish to attempt to reduce or discontinue their antidepressants a few months before conception and throughout the pregnancy.⁵⁷ However, one study found that 60% of women taking antidepressants at the time of their baby's conception had depressive symptoms over the course of the pregnancy.⁶⁸ Women should be monitored closely for relapse of depressive symptoms. Of women who discontinued their antidepressants during pregnancy, 68% experienced relapse symptoms compared with 26% of women who continued their medication regimen.²⁷ If a woman's depression history contains multiple relapses or severe symptoms, including suicide attempts and multiple inpatient psychiatric admissions, it is recommended that she remain on antidepressants for her own safety, regardless of pregnancy status.⁵⁷

Although research studies indicate that no major malformations are associated with antidepressant use during pregnancy, it also is not proved that any specific antidepressant is completely safe. All psychotropic medications cross the placenta and enter the amniotic fluid.⁶⁷ General guidelines include some straightforward principles: (1) keep the medication regimen simple, (2) use monotherapy, and (3) avoid medication changes during the pregnancy. Use of multiple medications in sequence and medication augmentation strategies all increase the exposure of the fetus.² A woman's prior history to pharmacotherapy should be considered when choosing a medication.² Although many factors influence pharmacotherapy during pregnancy, drugs with fewer metabolites, drug-drug interactions, more protein binding (preventing placental passage), and lesser teratogenic risk if known should be prioritized when possible.²

Spontaneous abortion

Research results are mixed when examining rates of antidepressant use and its relationship to spontaneous abortion, and may be confounded by methodological problems (small study samples) or the effects of the illness itself.⁶³ While prior work linked bupropion exposure in pregnancy with significant risk for spontaneous abortion²¹, a more recent study utilizing a large sample of 940 women taking various antidepressants (including SSRIs, bupropion and mirtazepine) during early pregnancy confirmed a statistically significant higher rate of spontaneous abortions (13% versus 8% in unexposed women) among the exposed women regardless of type of antidepressant used³⁴ in this study prior spontaneous abortion was also an independent risk factor for current spontaneous abortion.

Teratogenicity

The literature on antidepressant use is growing, particularly regarding the use of selective serotonin reuptake inhibitors (SSRIs) during pregnancy and possible risk for teratogenicity. Although the popular press raises a great deal of controversy regarding the safety of the SSRIs, research to date does not confirm major congenital malformations³³ In 2005, GlaxoSmithKline⁵⁶ published a report based on a claims database study of 815 infants that showed babies born to mothers who were taking paroxetine during their first trimester had a 1.5- to 2-fold increased risk for congenital heart defects, in particular atrial and ventricular septal defects. Einarson and colleagues³⁶ more recently demonstrated that the rate of cardiac defects for babies exposed to paroxetine in the first trimester and nonexposed infants was the same (0.7%, not statistically significant) and within the expected cardiac malformation risk range for all pregnancies. At the time of this writing, the use of paroxetine remains controversial. Most practitioners avoid its use during pregnancy except for those women who have demonstrated a preferential past positive response to this agent. When paroxetine is used, it is recommended to monitor the fetus with fetal echocardiography.²

The National Birth Defects Prevention Study in 2007 found no significant relationship between SSRIs and congenital cardiovascular malformations; however, it did find an association between SSRIs (especially paroxetine during the first trimester) and infants who had anencephaly, craniosynostosis, and omphalocele.⁸ Conversely, the Slone Epidemiology Center Birth Defects Study published at approximately the same time noted no increased risk for craniosynostosis, omphalocele, or heart defects with overall SSRI use by pregnant women.⁸³ This study did find some significant relationships between sertraline and omphalocele and between paroxetine and right ventricular outflow tract obstruction defects.⁸³ Although these findings indicated some increased risk for specific rare birth defects with specific drug exposure, the overall absolute risk for birth defects with the use of SSRIs is small; therefore, these medications are considered relatively safe for use during pregnancy.⁸⁸³

Neonatal adaptation

Studies show that up to 30% of infants exposed to SSRIs in utero during the third trimester are likely to have symptoms of poor neonatal adaptation.⁷⁶ These symptoms include short term self-limited jitteriness, tachycardia, hyperthermia, vomiting, hypoglycemia, irritability,

inconsolable crying, abnormal muscle tone, eating difficulties, sleep disturbances, seizures, and respiratory distress,⁷⁶ which leads to an overall increased rate of neonatal ICU admissions for these newborns. A recent paper suggested that the neonatal adaptation symptoms clustered in 3 symptom categories based on three proposed underlying pathophysiological mechanisms: serotonergic toxicity (e.g., tremor, tachypnea, diaphoresis and irritability/agitation), antidepressant discontinuation syndrome (e.g., hyperthermia, vomiting, increased muscle tone, and convulsions), and symptoms due to the immaturity of the newborns' central nervous system (e.g., decreased suckling reflex, eating difficulties).¹⁵ Studies assessing neonatal outcomes and complications do not correct for commonly co-occurring risk factors, including maternal smoking or use of alcohol or other substances.⁹⁸ Ferreira and colleagues,⁴² correcting for these confounding variables, found no increased incidence of preterm labor or neonatal ICU admission for babies exposed to SSRIs or venlafaxine in utero; however, some infants did exhibit neonatal adaptation syndrome symptoms.

Neonatal respiratory problems are commonly associated with prenatal antidepressant exposure.^(42, 90, 19, 71) Recent studies have reported an increased risk of persistent pulmonary hypertension of the newborn with maternal use of SSRI near term.^(1918, 71) Consequently, many neonatal respiratory complications, ranging from mild tachypnea to a need for respiratory support, could be either explained by the neonate's in utero exposure to antidepressants (i.e., consistent with underlying persistent pulmonary hypertension), or due to postnatal antidepressant discontinuation syndrome, mainly reported in infants whose mothers' had near term exposure to venlafaxine.¹⁶ More recently, Oberlander et al reported that length of gestational SSRI exposure, rather than timing, increased the risk for neonatal respiratory distress, lower birth weight and reduced gestational age, even when controlling for maternal illness and medication dose⁹⁵, thus, complicating the decision-making process for clinicians when contemplating fetal SSRI exposure. Although some international literature suggests tapering antidepressants in 3rd trimester to avoid late gestation exposure, most practitioners in the United States avoid this, as it predisposes women to a substantially heightened risk for late pregnancy and postpartum morbidity secondary to depression.³⁷ As with any decision regarding pharmacotherapy during pregnancy, a consideration toward tapering should be considered on an individual basis, considering the risks for maternal illness versus the risk for neonatal withdrawal symptoms.⁹⁸

The bulk of the literature to date does not reveal increased risk for congenital malformations associated with pregnant women taking tricyclic antidepressants (TCAs),⁶ which historically were the medications of choice for treatment of depression but currently are not used extensively. Doses of TCAs may need to be increased as much as 1.6 times the prepregnancy dose in the second half of pregnancy to establish therapeutic levels as a result of increased plasma volumes and metabolism.¹⁰³ Case reports have presented babies with TCA exposure experiencing temporary withdrawal symptoms within the first 12 hours of life, including jitteriness, irritability, urinary retention, bowel obstruction, and occasionally seizures.^{6, 100} Nulman and colleagues⁹² found no associations between maternal use of TCAs or fluoxetine during pregnancy and long-term effects on global IQ, language, or behavioral development in preschool children. Further research is needed to examine long-term outcomes for these children.

Limited information is available regarding exposure to atypical antidepressants, such as bupropion, mirtazapine, trazodone, and venlafaxine in utero.^{6,38} Like SSRIs and TCAs, venlafaxine has been implicated in cases of neonatal withdrawal.¹¹³

Nonpharmacologic treatments

Psychotherapy also has been studied in the treatment of depression and is considered to be an evidence-based treatment of mood disorders.⁹³ Interpersonal psychotherapy (IPT) or cognitive behavioral therapy (CBT) in particular are commonly recommended psychotherapeutic treatments for unipolar depression.¹² IPT is useful in addressing interpersonal conflicts, role transitions and unresolved grief. In addition to improving symptoms, IPT has been shown also to improve social functioning outcomes.⁹³ CBT specifically targets negative thinking and behaviors that maintain depression.¹² significant marital strain.

Couples counseling also may be indicated in women who have Women seeking treatment for depression also may benefit from nutrition counseling and regular low-impact exercise.^{98,32} Recently, there has been much interest in treating depressed pregnant women with omega -3 fatty acids (EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid), and there is emerging affirmative data on its safety and benefit⁵². Many providers advise pregnant women who take herbal supplements for their depression to cease during pregnancy, because limited safety data in pregnancy exist. mind-body modalities as treatment options for depression in pregnancy, some of which have been practiced over thousands of years, such as progressive muscle relaxation, yoga or awareness limitations (e.g., lack of randomized controlled trials), there seems to be converging evidence for the efficacy of mind-body modalities during pregnancy used in conjunction with prenatal care. Finally, studies have shown that it is safe and effective for pregnant women who have severe depression to participate in electroconvulsive therapy if they and their provider see this as the best therapy option.^{9,89}.

Postpartum depression

Background, Prevalence, and Clinical Features

Postpartum depression develops in approximately 10% to 20% of women who give birth,¹⁰⁵ with higher percentages in adolescents, mothers of premature infants, and women living in urban areas.^{65,82} Women who have low income and limited partner support also are at higher risk.^{101,102} Women with two or more risk factors are more likely to have stable depressive symptoms across the first 2 years postpartum.⁷⁵ Postpartum depression often is undetected and commonly underdiagnosed.³⁹ Many women expect an adjustment period after having a baby and, therefore, may not recognize that the symptoms of depression are out of the ordinary.³⁹ They may not want to admit they have a problem, they believe they need to prove they are a good mother, or they believe that seeking treatment will result in immediate removal of their child by child protective services. Many women do not seek treatment because of the combination of demanding newborn care and the lack of energy and motivation that comes with the disease process.⁹³ Furthermore, after the 6-week postpartum visit, a new mother who received her prenatal care from an obstetrician may not have

routine health care scheduled, and she may believe she has nowhere to seek help.³⁹ If postpartum depression is left untreated, the symptoms last an average of 7 months but can extend into the second year after delivery.^{39,93} Depression has a wide impact, influencing all members of families, and can lead to marital distress, family conflict, or loss of income and, in extreme cases, it can result in placement of children in care outside the home¹¹⁷.

The DSM-IV³ defines postpartum depression with the same symptom criteria as used for depression before or during pregnancy but specifies that it begin within the first 4 weeks after the baby is born. Onset can occur anywhere between 24 hours after giving birth and several months later.³⁹ Many epidemiologic studies define postpartum depression as depressive symptom onset within 3 months post partum and others as within the first year after delivery.⁷³ Depression symptoms often are accompanied by comorbid anxiety and commonly women have many concerns about their efficacy as a mother or are preoccupied with the health, feeding, and sleeping behaviors of their infants. As in pregnancy, MDD with postpartum onset must have the requisite clinical symptoms present for at least 2 weeks.³

Continuum of Affective Symptoms During Post Partum

Postpartum depression must be differentiated from the “baby blues” and postpartum psychosis. The baby blues are reported to occur in up to 70% of women after delivery.⁹⁴ These women feel sad, weepy, irritable, anxious, and confused, with increased sensitivity, fatigue, sleep disturbances, and appetite changes.³ The symptoms usually peak approximately 4 days post partum and abate by day 10.^{39,117} Although these symptoms may last only a few hours to days, women who experience the baby blues are at a higher risk for developing postpartum depression. In women who were diagnosed with postpartum depression 6 weeks after delivery, two thirds had experienced baby blues symptoms.⁶¹ The baby blues, however, almost always resolve within 2 weeks.

Postpartum psychosis occurs less commonly, having an impact on 0.2% of women of childbearing age.⁶² Women may experience hallucinations, delusions, unusual behavior, agitation, disorganized thought, and inability to sleep for several nights.^{3, 117} Often the hallucinations and delusions center on the baby and immediate intervention is vital to protect the lives of mother and child.³ Typically this disorder presents within 2 weeks post partum or sooner.³ Most often, postpartum psychosis is the result of affective psychosis, most commonly bipolar affective disorder³. Any woman who has had an episode of postpartum psychosis in a prior pregnancy should be screened carefully for bipolar disorder. Women who have had a prior episode of postpartum psychosis are at a high risk for a subsequent episode, and specific treatment guidelines have been suggested²⁶. Some clinicians suggest reintroduction of lithium or other mood stabilizers in late pregnancy or immediately postpartum (within the first 24 to 48 hours of labor) to attenuate the risk for postpartum psychotic relapse. In females, who decide against peripartum prophylactic treatment, treating obstetricians and midwives should be highly vigilant for early signs of postpartum psychotic decompensation, and have low threshold to consult with psychiatry. Postpartum psychosis is considered a psychiatric emergency because of the potential for catastrophic suicide or infanticide¹¹⁷.

Risk factors and epidemiology

Risk factors for postpartum depression should be identified before or during pregnancy and discussed at length between patient and provider. Many women who develop postpartum depression have had antenatal symptoms of depression⁸⁷. Once a woman experiences postpartum depression, she is at risk for depression relapses with or without additional pregnancies³⁰. Research shows that women who have had previous episodes of postpartum depression have a 25% risk for recurrence¹²⁰. Experts debate whether or not the rapid decline in reproductive hormone levels after delivery contributes to depression development. Bloch and coworkers found that when a decline of estradiol and progesterone was simulated in nonpregnant women, 63% of the women who had a history of postpartum depression experienced some changes in mood, whereas the women who did not have a history of postpartum depression did not experience any emotional changes. Thus, women who have a history of postpartum depression may be more sensitive to the systemic decrease in gonadal steroids post delivery¹⁴. Other risk factors for postpartum depression include past depressive symptoms not related to pregnancy, a family history of depression, and factors that influence depression at any time point, including poor social support, social conflict, and life stressors¹²¹.

Identification and screening of postpartum depression

Health care providers can have difficulty differentiating postpartum depression symptoms from the normative adjustment of a woman to a new infant. Physicians should take into account the circumstances (eg, extreme fatigue, even though a baby may be sleeping through the night) and intensity of the symptoms³⁹. Routine postpartum visits, and well infant pediatric visits present an ideal time for depression screening⁵⁵. Although referral to a mental health clinician can be an important part of accurate diagnosis and appropriate treatment intensity, many obstetric clinician support and encouragement for referral follow through has been found to be important⁴⁶.

Otherwise, physicians can use a screening question, such as, "Have you had depressed mood or decreased interest or pleasure in activities most of the day nearly every day for the past 2 weeks?"³. Affirmative responses should cue a provider to screen for other neurovegetative symptoms, including appetite and sleep changes, hopelessness, and difficulty paying attention. Significant impairment in social or occupational functioning should prompt a psychiatric referral. Suicidality or the risk for harm to an infant requires an assessment for inpatient hospitalization. Concomitant illicit substance abuse likewise merits a prompt evaluation. If EPDS scores are lower than 10 on clinical assessment but a patient still has some depressive symptoms, a reevaluation a few weeks later is recommended¹¹⁷. Other disease processes can mimic depression or can occur concomitantly. Patients presenting with symptoms of postpartum depression should routinely be tested for anemia and thyroid function, especially because hypothyroidism and hyperthyroidism occur more frequently post partum and can lead to alterations in mood¹¹⁷.

Treatment of postpartum depression

Antidepressant medication and psychotherapy are the foundation of treatment for postpartum depression. SSRIs are medications prescribed most commonly but other agents should be considered with a patient's prior positive treatment response. Because of the high risk for recurrence in women who have a previous history of postpartum depression, one study suggests providing prophylactic sertraline to prevent onset of symptoms¹²⁰. Some literature suggests that women who have postpartum depression may be likely to have a more positive response to serotonergic agents, such as SSRIs and venlafaxine, than to TCAs^{28, 118}. The antidepressant dose may be started at one half the recommended amount and increased slowly; postpartum women seem more sensitive to the side effects of these medications. Increased anxious symptoms at initiation of medications is a common concern¹¹⁹. Once a steady, effective dose is reached, then pharmacotherapy should continue for at least 6 months to prevent a relapse of symptoms³. If there is no improvement with antidepressants after 6 weeks of therapy, a psychiatric consultation is appropriate¹¹⁷.

Many women are hesitant to take antidepressants while breastfeeding a child. All antidepressants are secreted to some degree into the breast milk; however, ethical concerns prevent large randomized controlled trials in lactating mothers to determine efficacy and safety⁵⁷. Both paroxetine and sertraline have been studied in lactating women, and, as with all medications, are secreted into breast milk. Infant serum levels are very low to undetectable with these agents, however^{106,104}. Fluoxetine has higher rates of secretion into breast milk. Because fluoxetine and its metabolite, norfluoxetine, have extremely long half-lives, they can accumulate in an infant's blood, reaching detectable levels⁷⁷. Case reports link maternal fluoxetine use to colic, prolonged crying, and vomiting, so it is not considered the first-line SSRI for breastfeeding women⁸¹. If a mother has a positive history responding to fluoxetine, the benefit outweighs the risk and it should be continued while monitoring the child for side effects.

A substantial majority of lactating infants have no sequelae despite exposure to SSRIs during lactation. Mothers taking any antidepressant should be mindful of their infant's temperament and behavior, especially premature and sick newborns who may be predisposed to dehydration¹¹⁷ and should notify their physician if they notice irritability, difficulty feeding, or disturbed sleep patterns⁵⁷. In general, no adverse effects are noted in infants when breastfeeding mothers take TCAs¹²³. Breastfeeding while taking doxepin has been reported to cause severe muscle hypotonia, vomiting, drowsiness, and jaundice in babies, and, therefore, is not recommended⁶⁰. Small case reports of atypical antidepressants have found no negative effects on infants with maternal use of mirtazapine or trazodone^{78,110} increased risk for drowsiness and lethargy with nefazodone (only one case)¹²² and increased seizure risk with exposure to bupropion if a baby has a history of seizures^{60,20}. Larger studies are needed to explore these effects further. Research on long-term effects of SSRI and TCA exposure through breast milk on children shows no alteration in IQ, language development, or behavior⁶⁰.

For postpartum women who have sleep difficulties, diphenhydramine may be helpful⁹⁷. Lorazepam can be used in for women who have profound sleep disruption; it has fewer

active metabolites, reduces nighttime anxiety, and enhances sleep. Lorazepam, however, is excreted into breast milk in low concentrations¹⁰⁷⁷⁰. Several studies have observed that in lactating mothers taking lorazepam, there are no adverse effects on infants and no change in the amount of milk consumed. Caution should be taken when prescribing lorazepam during an infant's first few weeks of life because of the relative immaturity of the hepatic metabolism¹⁰⁷⁷⁰.

Interpersonal therapy (IPT) is ideally suited to postpartum mothers, as almost all women have some concerns regarding role transitions and social support that occur during this important life milestone. IPT specifically targets effective elicitation of social support, adjustment to role changes, as well as unresolved grief that may contribute to distress around motherhood.. Likewise, CBT has shown to reduce depressive symptoms⁸⁸ by targeting unrealistic expectations that some women may have, such as the need to be a “perfect” mother or a sense of shame by not being overjoyed with their infant during the immediate postpartum period. In addition, CBT encourages engagement in activities that are pleasurable and rewarding for the woman. Both psychotherapies may be provided have been shown to reduce or eliminate depression during an acute phase of treatment (up to approximately 16 weeks)⁹³. Pilot studies currently are exploring the efficacy of the treatment provided over the telephone, to allow women to receive treatment without leaving their home⁴⁷. Many women, especially those who have lactation concerns with pharmacotherapy, may be more comfortable beginning with IPT or CBT⁹³. A recent qualitative study found that concerns and knowledge about anti-depressant medications preclude treatment use among perinatal women⁴⁸. Additionally, behavioral strategies, such as adjusting the sleep schedule (having each member of the marital dyad share some of the nighttime responsibilities) and using the support of other family members to assist with nighttime feedings, may enhance a woman's ability sleep at night⁵³..

More recent work suggests that treating postpartum depression alone may not be sufficient in protecting children against long-term poor outcomes, and that dyadically based postpartum therapy interventions may be more beneficial for improving outcomes for infants of depressed mothers⁵⁰. These relationship-based treatments may be short- or long-term, rooted in psychodynamic and attachment theories^{29,51} and are sometimes combined with skill based techniques targeting relaxation and coping^{44,45}. These dyadic relationship-based psychotherapies appear to positively impact parenting and child outcomes despite mixed improvement of depression in the mothers^{23,24}.

Debate exists over the prospect of hormone therapy for postpartum depression. One study evaluated the effects of transdermal 17 β -estradiol versus placebo and found a significant decrease in depression scores in the estradiol group⁵⁹. One half of the women receiving estradiol, however, also were taking antidepressants, so the effect of hormone therapy alone is unclear. Additionally, the hypercoagulable state of postpartum women may limit the clinical usefulness of estrogen treatments. Prophylactic progesterone (norethisterone enanthate) postpartum compared with placebo demonstrated an increased risk for depressive symptoms in the treatment group⁸⁰. More research is needed to explore hormonal treatment possibilities further.

Summary

Obstetric care providers need to be aware that depression in women during their childbearing years is common. Routine depression screening, particularly at prenatal care visits, coupled with the use of physician collaborators to assist in connecting women with care is paramount. During prenatal interviews, providers should be aware of risk factors for depression, including previous history of depression and interpersonal conflict. Links have been made between depression during pregnancy and poor pregnancy outcomes, such as preeclampsia, insufficient weight gain, decreased compliance with prenatal care, and premature labor. The literature suggests that overall the risks of SSRIs are small during pregnancy relative to the risk for undertreatment of depression. If depression continues post partum, there is an increased risk for poor mother-infant attachment, delayed cognitive and linguistic skills, impaired emotional development, and behavioral issues. Longer term, these children are more likely to have emotional instability, conduct disorders, and require mental health services. To prevent these outcomes, postpartum depression screening with the EPDS or simple screening questions should be a priority for postpartum follow-up visits. Antidepressant treatments, IPT, adjunctive behavioral treatment, and involving family in the supportive care of postpartum women often are helpful strategies. More research is needed to determine the long-term and developmental effects of antidepressant exposure in children occurring during pregnancy and lactation.

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