

# Awareness and management of obstetrical complications of depression

## Cooperative care between psych and OB teams is essential

**W**hen a patient who has a preexisting medical illness seeks prenatal care, the obstetrician asks herself (himself) 2 questions:

- What impact will the illness have on the pregnancy?
- What impact will the pregnancy have on the illness?

Depression is both a pregnancy-associated and pregnancy-independent illness, which, in the setting of a pregnant woman who has a depressive disorder, makes these questions particularly difficult to answer. In such a case, coordination of care with a mental health provider is essential.

Awareness of the obstetrical complications associated with depression during pregnancy, as well as their implications for the future health of the mother–infant dyad, is important for the entire care team. This article reviews the associations and interconnectedness of depression with complications of pregnancy, childbirth, and the neonatal period.

### Diagnosis of depression during prenatal care

The American College of Obstetricians and Gynecologists (ACOG) states that evidence is insufficient to support a recommendation for universal screening for depression among prenatal patients, although such screening should be *considered*.<sup>1</sup> There is considerable variability among obstetrical providers regarding the practice of depression screening; tools to be used if such screening is done; and screening frequency through the pregnancy.

continued

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## Depression and OB complications

### Clinical Point

The best practice might be to screen for depression in any woman with a positive drug screen



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### Discernment of depression is difficult.

Many somatic symptoms of depression overlap with common prenatal complaints and, consequentially, can be overlooked. Among a sample of 700 pregnant women, for example, 56% complained of lack of energy; 19%, of insomnia; and 19%, of appetite changes.<sup>2</sup> Weight change, of course, is universal.

The 10-question self-rating Edinburgh Postnatal Depression Scale has been validated for use during pregnancy and postnatally. This screening instrument can be helpful for differentiating purely physical complaints from mental distress due to depressive symptoms.<sup>2,3</sup>

**When an obstetrical provider suspects a depressive disorder**, or one has been diagnosed, she (he) faces the problem of what to do with that information. Women of low socioeconomic status and victims of domestic violence are at increased risk of depression during pregnancy, but barriers to appropriate referral can seem nearly insurmountable because they lack insurance and social support.<sup>4-9</sup>

In addition, within the setting of numerous tasks that need attending during the relatively short prenatal period, it is common for women newly given a diagnosis of depression to fail to follow up on a referral to a mental health provider.

Although most providers will “check in” with a depressed or at-risk patient at each prenatal visit about her mood, any effort at follow-up can be overshadowed by tangible physical concerns, such as preterm contractions, fetal growth restriction, and coordination of routine testing that has been delayed because of scant prenatal care. All these physical concerns and circumstances of care are associated with maternal depression, as we will discuss.

### Preterm labor and birth

Preterm labor is defined as uterine contractions that lead to cervical change before 37 weeks gestational age. Preterm labor increases the risk of preterm birth; preterm labor precedes 50% of preterm births. Preterm birth is the leading cause of neonatal

mortality in the United States, and rates of morbidity and mortality increase as gestational age decreases.<sup>10</sup> Common neonatal complications related to prematurity are shown in the *Figure*.<sup>11</sup>

Women who suffer from depression have an increased risk of preterm labor and preterm birth, as many studies of treated and untreated depressed pregnant women have shown.<sup>12-20</sup> The causative mechanism is unknown; it has been proposed that the increase in maternal cortisol production associated with depression and distress triggers overproduction of placental cortisol releasing hormone, which is thought to be involved in initiation of parturition.<sup>21,22</sup> Depression also is associated with other risk factors for preterm birth, such as low socioeconomic status, substance use, and smoking.

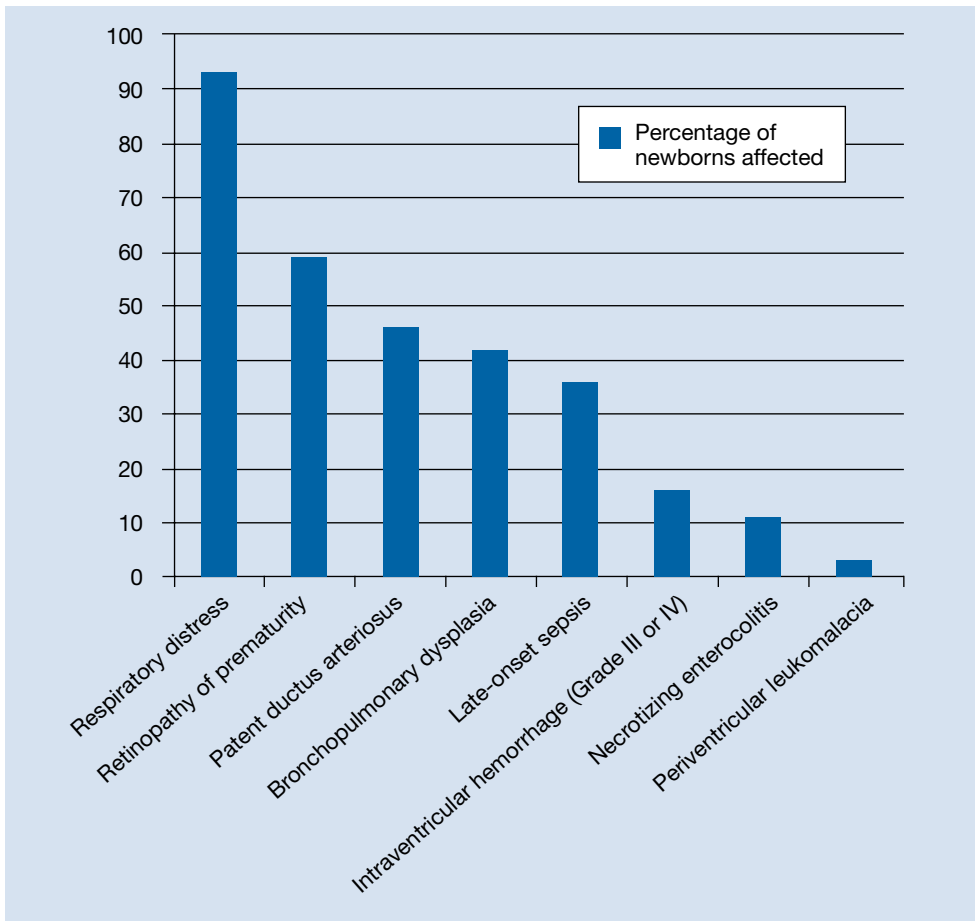
### Intrauterine growth restriction

Women who have depression during pregnancy have an increased risk of intrauterine growth restriction (IUGR), which leads to delivery of an infant who is small for gestational age (SGA) or of low birth weight (LBW) (weighing <2,500 g at birth), or both.<sup>23</sup> Again, the basis of the association between depression and IUGR and SGA is unknown; it is theorized that increased levels of cortisol and catecholamines associated with maternal distress might, by increasing blood pressure and inducing vasoconstriction, cause placental hypoperfusion.<sup>24,25</sup>

It also is possible that the association of depression with other risk factors for IUGR, such as smoking, substance use, obesity, and poor prenatal care, puts the infants of depressed women at risk of growth restriction.<sup>26</sup> Several large-scale studies showed that the association between LBW and depression is lost when smoking and substance use are accounted for; other studies, however, found a persistent association in untreated depressed women when smokers, substance users, and drinkers were excluded.<sup>17,26,27</sup>

IUGR infants are at increased risk of iatrogenic prematurity and stillbirth. Fetuses that weigh <10th percentile for their gestational age are delivered no later than 40 weeks; delivery can be indicated as early as 32 weeks, depending on the results of

## Complications in very low birth weight (&lt;1,500 g) infants



## Clinical Point

It might be reasonable to screen antenatal patients at risk of preterm birth for depression on a regular basis

other antenatal tests. Women who have a growth-restricted infant have a higher risk of cesarean delivery because growth-restricted infants often have less reserve and poorer tolerance of labor.

### Preeclampsia and eclampsia

**Preeclampsia** is defined as blood pressure >140/90 mm HG on at least 2 occasions, with proteinuria, that occurs later than the twentieth week of pregnancy in women who did not have hypertension or renal dysfunction at baseline. Preeclampsia is a progressive disease that can cause severe maternal morbidity, including renal failure, stroke, hepatic rupture, pulmonary edema, and heart failure.

**Eclampsia** refers to onset of seizures in the setting of preeclampsia. These 2 hyperten-

sive disorders are the third leading world wide cause of maternal mortality.<sup>28</sup>

Depressed women have an elevated risk of preeclampsia. The association between preeclampsia and depression might be caused by the presence of increased levels of inflammatory mediators<sup>29,30</sup>; other comorbidities, such as increased body mass index, also might be involved, but the risk for preeclampsia in depressed women still is increased after controlling for obesity.<sup>31</sup>

The presence of preeclampsia is responsible for a high percentage of iatrogenic preterm births, because the cure for the disorder is delivery—even at early or previsible gestational age. Complication rates for mother and infant are high.

The presence of preeclampsia is a significant risk factor for intrauterine fetal demise. Treating the mother after delivery involves administration of IV magnesium



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The association between preeclampsia and depression might be caused by increased levels of inflammatory mediators

for 24 hours; often, the mother is separated from her infant for a day after birth.

### Impact on prenatal care

Depression increases odds that women will have fewer prenatal visits.<sup>32</sup> During pregnancy, women typically initiate prenatal care during the first trimester, when pregnancy-dating ultrasonography and early screening tests for chromosomal abnormalities are performed. Prenatal visits occur monthly until the third trimester, then every 2 weeks between 32 and 36 weeks' gestation, increasing to weekly after 36 weeks' gestation.

The increased number of visits in late pregnancy allows for early detection and treatment of hypertensive disorders; assesses fetal well-being; and decreases the risks of morbidity and mortality for mother and fetus.<sup>33</sup> Because women who suffer from depression are at increased risk of an array of adverse pregnancy outcomes, the importance of regular and timely prenatal care cannot be understated.

In addition, the prenatal visit gives the obstetrician the opportunity to connect women with other specialists for management of any unmet medical needs. One study showed that, when women have adequate prenatal care (measured by the number of visits), the association between preterm birth and self-reported maternal depression was eliminated.<sup>34</sup>

### Substance use

Substance use and depression often co-exist.<sup>35,36</sup> Unlike screening for depression, screening for substance use is universal during prenatal care. Studies have shown that women who screen positive for depression are at higher risk of a number of comorbidities, including substance use.<sup>37,38</sup> Conversely, women who use substances are more likely to screen positive for depression.

Evidence suggests that best practice might be to screen for depression in any woman who has a positive drug screen, if a provider is not routinely screening their general patient population.<sup>39</sup> Substance use in pregnancy is associated with a number of

poor outcomes, including placental abruption (cocaine use); dysmorphic facies and congenital anomalies (alcohol); and neonatal abstinence syndrome (heroin).

### Antidepressants in pregnancy

A full discussion of the risks and benefits associated with pharmacotherapy for depression in pregnancy is beyond the scope of this article. Generally, antidepressant use is fraught with concerns over teratogenicity and adverse fetal outcomes. Although ACOG states that (1) pharmacotherapy for depression should be individualized and (2) most selective serotonin reuptake inhibitors (SSRIs) are not considered major teratogenic agents, many obstetricians and patients feel uncomfortable using these medications in pregnancy.<sup>40</sup> Often, pre-pregnancy antidepressants are discontinued in the first trimester; one large population-based study found that only 0.9% of women who had depression filled their antidepressant prescription consistently throughout their pregnancy.<sup>41</sup>

It is unclear whether antidepressant use in pregnancy contributes to the risk of preterm birth seen in women who have depression. In a large population-based study, use of antidepressants in the second trimester was associated with preterm delivery but severe depression was not.<sup>18</sup> A recent meta-analysis revealed an increased risk of preterm birth in women who used an antidepressant, compared with healthy women and untreated depressed women.<sup>42</sup>

### Research limits, unanswered questions.

Regrettably, it is difficult to untangle risk factors for preterm birth among depressed women without randomized controlled studies that are not ethically feasible. It cannot be said with certainty whether antidepressant pharmacotherapy is associated with a higher risk of preterm birth than depression alone.

Likewise, it is difficult to clarify the extent to which antidepressants contribute to infant growth restriction, if at all. Two recent meta-analyses concluded that exposure to antidepressants is associated with a statistically significant risk of LBW.<sup>42,43</sup> However, increased severity of depressive symptoms

generally is associated with exposure to antidepressants during pregnancy, and a randomized controlled trial is, again, impossible to conduct for ethical reasons.

Whereas a plausible biological mechanism associating IUGR, SGA, and LBW with depression exists, the same cannot be said for antidepressants. In one study, exposure to maternal depression altered the expression of certain placental genes but exposure to SSRIs did not cause further changes. This suggests that, on a cellular level, placental function might differ in depressed women.<sup>44</sup> Although antidepressants do cross the placenta, it remains to be seen whether fetal growth is impacted as a result. One study found decreased fetal head circumference in infants who had been exposed to antidepressants during pregnancy, but no increased risk for having a SGA or LWB infant.<sup>45</sup>

### Obstetrical management and mental health implications

Treated or not, women who suffer depression are a high-risk group when it comes to preterm birth and a host of other pregnancy comorbidities. Women with serious complications of pregnancy often are hospitalized for observation, and can undergo a prolonged stay when close proximity to medical services or a surgical suite is required.

For example, hospitalization until delivery is the standard of care for women who have preterm premature rupture of membranes or preeclampsia before 34 weeks' gestation. Prolonged inpatient admissions and associated restriction of activity is profoundly deleterious on mood, with depression and anxiety significantly correlated with length of stay.<sup>46,47</sup> Given the associations between depression and preterm birth, it might be reasonable to consider screening antenatal inpatients at risk of preterm birth for depression on a regular basis, so that treatment can be initiated if needed.

Depression during pregnancy is relatively common; an estimated 12.7% of pregnant women are affected at some time between conception and birth.<sup>48</sup> Not only does depression appear to have deleterious effects on pregnancy outcomes, it also plays

a pivotal role in the qualitative experience of pregnancy for the mother.

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### Clinical Point

Women who suffer from depression have an increased risk of preterm labor and preterm birth



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Two recent meta-analyses concluded that exposure to antidepressants is associated with a risk of low birth weight

### Related Resources

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### Bottom Line

Awareness of obstetrical complications associated with depression in pregnancy is important for the entire care team, including the psychiatrist and obstetrician. Depression not only appears to have deleterious effects on pregnancy outcomes, it also plays a pivotal role in the qualitative experience of pregnancy for the mother. Antidepressant use generally is fraught with concerns over teratogenicity and adverse fetal outcomes.