Depression during Pregnancy: Rates, Risks and Consequences

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ABSTRACT

Affective illness is common in women, and the puerperium is a time of particular vulnerability. Gender differences in the expression of affective disorders have been attributed to the impact of hormonal influence, socialization, and genetics. Dramatic fluctuations in gonadal hormones that occur following childbirth, influences the increased incidence of mood disorders during this time. Numerous tools including the Edinburgh Postpartum Depression Scale can be used to screen for depression during pregnancy and postpartum. While screening tools may assist with appropriately identifying women who should be further assessed, their use alone does not significantly increase treatment seeking in women, even when their providers are notified about risk.

Many studies demonstrate that only a small number (18%) of women who meet criteria for major depressive disorder seek treatment during pregnancy and postpartum. Additionally, common symptoms of depression (sleep, energy and appetite change) may be misinterpreted as normative experiences of pregnancy. Treatment engagement is important as untreated depression during pregnancy may have unfavorable outcomes for both women and children. Complications of pregnancy associated with depression include: inadequate weight gain, under utilization of prenatal care, increased substance use, and premature birth. Human studies demonstrate that perceived life-event stress, as well as depression and anxiety predicted lower birth weight, decreased Apgar scores, and smaller head circumference, and small for gestational age babies.

Postpartum depression (PPD) is a common clinical disorder occurring in 15% of deliveries, making it one of the most frequent conditions to complicate pregnancy. Risk factors include past personal or family history of depression, sing marital status, poor health functioning, lower SES, and alcohol use. Women who have a prior history of postpartum depression, particularly with features of bipolarity or psychosis may be at particularly high risk.

Introduction

The perinatal period is a time of substantial vulnerability to affective illness. Gender differences for many psychiatric disorders have been attributed to genetics, gender role socialization, and to hormonal influences.[1] During the perinatal period dramatic fluctuations in gonadal hormones influence the presentation of affective illness.[1] Rapid fluctuation in hormone levels during pregnancy, and more dramatically, the rapid fall during postpartum increases the prevalence of mood disorders during this time.

The substantial increase in hospitalization postpartum has been attributed to mood disorders[3] and most psychosis which occurs during the postpartum is affective in nature.

Screening Tools

Recent studies suggest that 10% of gravid women meet criteria for major depression[4,5] and up to 18% show elevated depressive symptomatology during gestation.[6] Variable prevalence rates noted within the scientific literature reflect the variety of screening instruments used and whether they reflect data collected by self-report or trained researchers. Additionally, the timing of the collection of the data relative to the duration of pregnancy or time since birth lends variable prevalence rates. Common self-report instruments include the Center for Epidemiologic Studies Depression Scale (CES-D)[7,8] and the Edinburgh Postnatal Depression Scale (EPDS).[9,10] Of these, the EPDS is more specific to the perinatal period and less reliant on somatic symptoms (such as sleep and appetite dysregulation) which are normative in pregnancy. The Beck Depression Inventory (BDI) is also commonly used as a longitudinal metric for depression.[11] The Structured Clinical Interview for Depression (SCID) is an instrument administered by researchers trained in its use; and while it is considered the "gold standard" for the research diagnosis of depression, its utility is quite limited in primary care settings.[12,13]

Clinical Features and Detection Rates

The clinical features of major depressive disorder (MDD) during pregnancy are identical to those of this illness during any other time of a woman's life. These symptoms include 8 of 14 symptoms of depression that are present for a period of no less than 2 weeks.[14] Women who may attribute insomnia or appetite dysregulation to normative symptoms of pregnancy commonly overlook symptoms of depressed mood and anhedonia. The stigma associated with depression and the asynchrony between the woman's expectation of bliss during a wanted pregnancy, and her symptoms of sadness and irritability cause many women to under-report these symptoms. Additionally, providers caring for women who are preoccupied with the myriad of clinical information that must be collected during the very brief prenatal visit (fundal

height, fetal pulse, nutrition, weight gain), may not ask about these symptoms or, like the women themselves, attribute the symptoms to the pregnancy. These circumstances conspire to make depression during pregnancy among the most under-recognized and treated conditions. One investigation found that a diagnosis of depression was made in only 0.8% of childbearing women based on a review of diagnostic codes across a large hospital system.[15]

Treatment Engagement

Recent data suggest that depression during pregnancy is feasible and can successfully identify depressive symptoms during pregnancy. At the University of Michigan, 90% of women comply with depression screening using both the CESD and the EPDS as screening instruments. It is noteworthy; however, that screening alone does not substantially increase treatment engagement in depressed women. An investigation of women screened, suggested that only 20% of screened women with depressive symptomatology were engaged in any treatment for their depression; including any pharmacotherapy or any psychotherapy. There are not substantial differences among treatment seeking and engagement in women who have subsyndromal depressive symptoms vs. those women who meet SCID criteria for major depressive disorder.[15] When women are screened, provider notification with regard to women's depression status does modestly increase rates of treatment engagement. Patients report that when providers speak to them about their depression, they are more likely to seek treatment. In addition to provider notification, motivational interviewing techniques may increase likelihood of treatment engagement. An additional University of Michigan study found that a single session provided by a caregiver trained in motivational interviewing increased rates of treatment engagement by identifying women's practical and psychological barriers to treatment seeking.[15] While substantial additional information about medication treatments will be provided in other chapters, our data also suggest that very few women access medication treatments with only 11% of women with depressive symptoms, and/or SCID identified MDD choosing to use medication. Many women who use medication are using inadequate dosages, in part, fueled by both provider and patient reluctance to expose the infant to

pharmacotherapy, thus using "only a small dose". Unfortunately, this strategy may expose the infant to the simultaneous risk of medication and under treated depression; as a recent study suggested that women using small doses of medication are as likely as women using no medication to experience ongoing symptoms.[16]

Treatment engagement is important as untreated and under treated depression is an important risk factor for unfavorable pregnancy outcomes. These include inadequate weight gain, under utilization of prenatal care, and increased substance use.[17] Additionally, earlier studies suggest that women who have untreated psychiatric illness are more likely to have inadequate nutrition[18] more likely to consume alcohol and other substances[19] and less likely to utilize appropriate prenatal services.[20,21] Some human studies demonstrate that perceived life-event stress, as well as depression and anxiety in pregnancy predicted lower infant birth weight, decreased Apgar scores, prematurity and smaller head circumference.[21,22,23] Other studies suggest that prematurity and small for gestational age (SGA) infants are associated with depressive symptoms only in lower income women[8] who are more likely to also experience numerous additional psychological stressors. Decreased infant weight is likely mediated by peptides deriving from activated hypothalamic-pituitary-adrenal (HPA) axis and their impact on uterine blood flow and irritability.[25] Animal studies also suggest that increased maternal stress during pregnancy may be associated with abnormal development of the fetal brain as well as dysfunction of the HPA in infants.[26]

Postpartum Depression, Risks and Prevalence

Postpartum depression (PPD) is a common clinical disorder with symptoms identical to that of non-puerperal major depressive disorder with the caveat that women are typically much more anxious, with frequent preoccupation about their ability to parent their new child and the health of the infant. Symptom onset is typically within six weeks of delivery[27], but the chronicity and duration may vary[29] with some presenting up to six months postpartum. Rates are reported between 10%-15% in adult women again depending upon the diagnostic criteria, timing of screening and screening instruments used.[29,2] Rates of relapse are particularly high in women with a prior history of depression with estimates ranging from

25%-50%.[2] Depression with psychotic features places women at unique vulnerability for recurrent episodes, and 50-70% of women with a prior episode of postpartum affective psychosis may be at risk for recurrence postpartum.[30] As during other times, risk of depression during postpartum is influenced by genetic vulnerability. Factors including previous depression, single marital status, poor health functioning, alcohol use during pregnancy and lower SES emerge as risk factors for PPD.[31]

Neuroendocrine, Neonatal and Childhood Consequences of Postpartum Depression

As with antepartum depression, depression following delivery may place infants at particular risk. Mothers who suffer from prolonged and under treated depressive illnesses experience significant morbidity. A recent study conducted at University of Michigan examined the relationship between maternal depressive symptoms, neuroendocrine changes, and neonatal neuroendocrine systems, and neonatal adaptation including sleep, feeding, temperament and attachment. In this study, women with past-histories of depression and/or anxiety experiencing depressive symptoms as evidenced by elevation in BDI (high-risk women) had higher levels of ACTH during latter pregnancy. Likewise, their infants were born with elevations in ACTH, as measured in cord blood. These women were less likely to breastfeed, and had higher rates of pregnancy complications.[32] During the neonatal period, there also appears to be correlations between the entrainment of infant sleep patterns and maternal depressive symptoms. Women with depressive symptoms have infants who experience longer sleep latency (time to sleep), less sleep efficiency and total sleep time compared to infants whose mothers who are not experiencing depressive symptoms.[33] These patterns, which are true at 2 weeks postpartum, hold true through 30 weeks following delivery.

Later in childhood, mothers with depressive symptoms have been found to have more complex behavioral interactions with their children, were less responsive and sensitive, and more intrusive in their interactions and their children were more likely to develop an insecure attachment to their mother at 36 months.[34,35] Children of depressed mothers show more negative affect, poor affect regulation, less cooperation, and poorer cognitive and language skills when their mothers are clinically depressed.[36-39]

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