Enhancing our understanding of perinatal depression

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Depression is widely recognized as one of the most common complications of pregnancy, and it is also believed to be one of the most influential risk factors for triggering postpartum depression.[1] The profound ramifications of untreated depression have been demonstrated, not only among new mothers and their offspring, but within the entire family. Consequently, there have been concentrated efforts to increase the awareness of perinatal mood disorders and explore available treatment options.[2] For example, in The Patient Protection and Affordable Care Act of 2010, Section 2952 explicitly supports and promotes the expansion of research into the magnitude, etiology, and treatment of this condition, as well as espousing educational programs for health professionals and the public.[3] While the quality of empiric research exploring this field has improved incrementally during this time frame, the prevention, recognition, and management of perinatal depression continue to provide a formidable challenge to clinicians and researchers, and questions will persist for years to come.[4]

In this issue of *CNS Spectrums*, investigators from across the country have shared recent findings in an effort to shed additional light on this medical condition and perhaps illuminate future areas of research. As the effective etiology of perinatal depression continues to be elusive, Schiller *et al* provide an incisive review of recent research exploring the role of reproductive hormones in postpartum depression, and attempt to construct a biological model explaining this diathesis.[5] While plummeting levels of estradiol and progesterone have been associated with the development of PPD historically, Schiller *et al* conclude that there are many other potential biological factors to account for, including declining concentrations of oxytocin and allopregnanolone, dysregulation of the HPA axis, postpartum stimulation of inflammatory cytokine synthesis, and genetic polymorphisms, most notably for specific estrogen receptors. Collectively, these lines of evidence suggest that hormone supplementation may be worthy of future exploration as an antidote for PPD, and other therapeutic alternatives warrant inquiry as well.

In the study presented by Flynn *et al*, investigators attempted to analyze the statistical association of depression on adverse birth outcomes, as well as the independent and interactive effects of anxiety disorders.[6] Using a validated depression screening tool, the authors reported that approximately one-third of the sample experienced perinatal depression and nearly 10% suffered from anxiety. These psychiatric illnesses were significantly associated with a reduction in gestational age and birth weight. Certain chronic medical conditions such as high blood pressure and kidney disorders were also demonstrated to influence these outcomes, serving to further elucidate patient populations at unique risk for perinatal mood disorders.

Avalos *et al* conducted a retrospective investigation examining the relative safety of antidepressants in pregnant women.[7] Specifically, the authors analyzed the potential association of antidepressants with the development of preeclampsia, a severe form of perinatal hypertension demonstrated to have serious consequences on the health of mothers and their infants. After comparing outcomes between several control cohorts, including depressed mothers either receiving psychotherapy or no documented treatment(s), the investigators reported a significant association between antidepressant exposure and preeclampsia, particularly among women who were prescribed antidepressants during the second trimester. This association appeared to be stronger with longer exposure to the antidepressants overall. As depression itself may also predispose pregnant women to the risk of preeclampsia, the authors acknowledged that confounding by indication or severity could not be ruled out. It deserves mention that this is a common methodological limitation for nonrandomized studies exploring the safety of antidepressants in pregnancy, and that this particular research bias is often overlooked or misinterpreted by the lay press and health professionals alike.

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Finally, Geier *et al* conducted an epidemiological investigation of detection and treatment rates for depression among new mothers who were enrolled in the country's largest state Medicaid program.[8] They analyzed administrative data for 3 consecutive 9-month timeframes (corresponding to preconception, pregnancy, and postpartum, respectively) and compared outcomes from a cohort of women who delivered live births to a group of age-matched female controls who were not pregnant. They reported that women in the pregnancy cohort were 2–3 times less likely to receive a diagnosis of depression, both during term and in the postpartum timeframe, in spite of the fact that pregnancy is widely believed to impose enhanced risk for the development of mood disorders. Furthermore, even among the pregnant women who received an ICD-9 code for depression, less than half of these beneficiaries were prescribed antidepressant medications or experienced psychotherapy (versus a 72% treatment rate in controls).

It is hoped that the findings presented in this issue of *CNS Spectrums* will augment the burgeoning body of research on perinatal depression and summon additional investigations, particularly into the safety and effectiveness of therapeutic interventions. These articles also serve as a reminder, however, that the majority of women afflicted with this illness continue to suffer in silence, and that effective educational outreach and thoughtful redesign of healthcare delivery systems will be imperative if we are to improve the outcomes for new mothers and their families.

Disclosures

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