Pregnancy and the Perinatal Period

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Abstract

Once thought to be a time of health protection and emotional well-being, pregnancy and the perinatal period is being recognized as a time of increased risk for recurrence of affective and psychotic illness. The factors contributing to this risk are numerous, and the clinical presentation can be confusing for both patient and clinician. Mental illness in the perinatal period and its risks are identifiable and predictable. Additionally, the impact of both conventional and integrative treatments on both mother and developing fetus are becoming better understood. Professionals in the field of perinatal psychiatry aim to develop and hone effective treatments of mental illness, with a focus on minimizing maternal distress and fetal risk, and preventing major adverse outcomes. We have come to understand that, in mental illness and medication treatments in pregnancy, there is no such thing as non-exposure. Our commitment is to minimize the risks of mothers' and their offsprings' exposure to acute episodes of illness, with a balanced understanding of the risks of conventional treatments. This chapter will outline current research and clinical guidelines in the treatment of mental illness during pregnancy and the perinatal period.

Once thought to be a time of health protection and emotional well-being, pregnancy and the peurperium is being recognized as a time of increased risk for recurrence of affective and psychotic illnesses (Kendell et al. 1987). With celebrities and the media giving a face to mental illness in pregnancy, the past decade has shone a public light on perinatal mental illness and need for effective treatments (Osmond 2002; Shields 2005; Paltrow 2011). Epidemiologic studies pointing to effects of mental illness on pregnancies and children, emerging data about safety/efficacy of pharmacologic and other treatments, and the urgency to address much publicized

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tragic outcomes simultaneously motivate mental health providers to develop reliable clinical guidelines. National and international organizations have been established to promote investigation into women's mental health needs (e.g., Marcé Society, North American Society for Psychosocial Obstetrics and Gynecology, Postpartum Support International), and government and public health organizations have devoted more resources to women's perinatal mental health issues (Boyd et al. 2002). These developments provide women and their care providers a backdrop for an informed discussion about mental illness in pregnancy and the postpartum period.

This chapter will outline the current wisdom regarding the prevalence and risks of depressive and anxiety disorders, bipolar spectrum disorders and major psychotic illness, and some of the literature on widely available modes of treatment. The literature and recommendations regarding mental illness in pregnancy and the perinatal period is vast and quickly expanding. Rather than providing an exhaustive review of the literature on syndromes and their treatment, this chapter aims to introduce the reader to the major factors that contribute to mental illness in the perinatal period.

Psychiatric issues in the perinatal period have historically been stratified into three major groups, the "blues," antenatal/postpartum depression, and psychosis (O'Hara 1987). Women in their reproductive years are at greatest risk for major mood disturbances. The changes in sleep, mood, energy, and appetite that accompany normal pregnancy can be difficult to distinguish from symptom collections seen in mental illness exacerbations. Before symptoms begin to affect a woman's sense of self and/or ability to care for herself and her offspring in pregnancy and postpartum periods, it is wise to seek the guidance of a mental health provider with familiarity of how mental illness presents in the perinatal period and a balanced view of effective management strategies.

Significant maternal morbidity and mortality are associated with mood disorders linked to pregnancy. At one end of the mental illness spectrum, we see the generally self-limited, culturally accepted, picture of the overwhelmed new mom supported by a network of people through her "blues." At the other, we see mothers without treatment, overwhelmed and isolated as their symptoms worsen, and put them at risk of endangering theirs and their children's lives. A study of nearly 500,000 women showed that the "relative risk" of admission to a psychiatric hospital with a psychotic illness was extremely high in the first 30 days after childbirth (Kendell et al. 1987). A substantial rate of suicide occurs postpartum, as maternal suicide accounts for up to 20 % of postnatal deaths in depressed women (Lindahl et al. 2005). Despite such high stakes, clinicians are without clear guidelines on how to best help this vulnerable population.

Although there are no empirically based treatment guidelines for the management of major mental illness during pregnancy, substantial progress has been made with improved information on the course of illness in pregnancy, the risks of recurrence during pregnancy and in the postpartum period, and the reproductive safety and efficacy of treatments. Providing balanced and individualized information about treatment options and relative risks, including the limits of current

knowledge, can contribute importantly to informed family planning by women with mental illness (Viguera 2002).

The Baby Blues

The major hormonal, interpersonal, and diurnal shifts that accompany delivery can affect a new mother's mood precipitously and manifest as "baby blues," a syndrome of affective reactivity, irritability, fatigue, and general malaise generally beginning around day three after parturition. Baby blues are generally normal reactions to the hormonal changes and stress after delivery, and generally subside without medical intervention, within 2 weeks postpartum (Yalom et al. 1968). In "baby blues," suicidal ideation is not present and sad mood, worthlessness, and hopelessness are not pronounced. Although "baby blues" was previously considered benign, increasing evidence suggests that women with these symptoms are at risk of progression to postpartum major depression (Henshaw et al. 2004). All women require the support of the family and community network with a watchful eye for worsening or lack of resolution of such symptoms.

Major Depression

Though some emotionality is a frequent and normal part of pregnancy and parturition, major mood episodes affect a significant proportion of women during pregnancy and in the postpartum period. In fact, depression is the second greatest cause of morbidity for women of childbearing years, second only to HIV-AIDS in cause of disability (Mathers et al. 2006). The prevalence of depression in women's lifetimes is approximately 10–25 %, with greatest risk of depressive disorder occurring during childbearing years (Bennett et al. 2004). Studies estimate that 18 % of pregnant women will suffer from depressive symptoms and that approximately 14 % of women will meet criteria for major depression during pregnancy (Marcus et al. 2003) and postpartum (Gavin et al. 2005).

Signs and symptoms for perinatal depression are similar to those for depression in the general population: depressed mood, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy, and poor concentration (Lee and Chung 2007). Clinical wisdom points to depression marked by high levels of anxiety and worry about the health of the baby and the fitness of mother/patient. Prevalence of antenatal depression appears to peak in the first trimester, while postpartum depression peaks around 12 weeks after delivery (Gavin et al. 2005) with elevated risk lasting well into the first year postpartum.

Antepartum Depression

Mood and anxiety disorders profoundly affect the somatic and emotional experience of the expectant mother during pregnancy. A prospective study of nearly 1,500 patients showed significant associations between depression and/or anxiety and increased nausea and vomiting, prolonged sick leave during pregnancy, and increased number of visits to the obstetrician, specifically, visits related to fear of childbirth and those related to contractions (Andersson et al. 2004). Psychiatric diagnoses are also associated with an increased risk of inadequate prenatal care even when studies controlled for other known risk factors (Kelly et al. 1999).

Early data did not indicate that antepartum depression (depression during pregnancy) is higher at any particular trimester during pregnancy or month in the first postpartum year (Bennett et al. 2004; Gavin et al. 2005). More recent data however, shows that 43 % of women with histories of unipolar depression will relapse without treatment in pregnancy and the postpartum period, with half of such occurring by the third trimester (Vesga-López et al. 2008; Evans et al. 2001). As the patient becomes pregnant and throughout pregnancy, the clinician must closely monitor for changes in thought, diurnal, and affective patterns that can mark an abrupt worsening of mood and need for treatment adjustments.

Women who are pregnant or recently pregnant are less likely than their non-perinatal counterparts to seek mental health services (Vesga-López et al. 2008), much less comply with pharmacologic medications (Battle et al. 2006). Upon learning of their pregnancy, a significant proportion of women discontinue their psychiatric medication for fear of prenatal exposure of offspring to these agents, thereby increasing the risk of depressive relapse during pregnancy or the puerperium (Vesga-López et al. 2008). A 2006 study estimated that women who discontinue antidepressant use have a fivefold increased rate of relapse of their depression by their third trimester compared to women who maintained treatment throughout pregnancy (Cohen et al. 2006).

Anxiety and its effects on perinatal outcomes have also received increased attention. Rate of pregnant women suffering with significant anxiety symptoms is approximated at 13 % and is generally linked to comorbid depression (Heron et al. 2004). In addition, approximately one-third of all depressed women were diagnosed with comorbid Axis I disorders, most typically an anxiety disorder (panic disorder and PTSD) or, less frequently, a substance-related disorder (Battle et al. 2006). Additionally, significant prenatal anxiety has been shown to correlate to postnatal depression even after controlling for antenatal mood episodes (Austin et al. 2007; Milgrom et al. 2008).

Postpartum Depression

It appears that the postpartum period, with its disrupted sleep wake cycle, fatigue, role changes, dynamic triggers, and hormonal shifts, puts women at more of a pronounced risk for mood episodes than at any other time in their reproductive

lives. Other factors that confer heightened risk for depression during pregnancy/postpartum include a prior history of depression (O'Hara 1995), young age (Frank et al. 1990), limited social supports (Bolton et al. 1998), ambivalence about pregnancy, marital conflicts (Kumar and Robson 1984), unmarried marital status (Witt et al. 2010), and prior history of significant premenstrual symptoms (Sylvén et al. 2013). Though many medical and psychosocial factors can increase the risk of developing perinatal depression, both clinician and patient should be aware of the elevated risk for depression if risk factors such as those described above are present.

It is the task of mental health providers to help women weigh the risks of mental illness to themselves and their offspring versus the risks of pharmacologic and other treatments in the perinatal period. A woman experiencing mild symptoms of mood or anxiety disturbance, without sleep disturbance and without prior psychiatric history, may be at less risk of a severe episode than a woman with a history of past psychiatric illness, need for pharmacologic treatment, or history of suicidality or hospitalization. The risks of treatment should be considered along side of the risks of nontreatment—resulting in differing treatment plans.

Risks of Untreated Depression

Depression has been recognized as a disease that affects obstetrical and neonatal outcomes (Chung et al. 2001). Maternal depression has been shown to correlate with premature delivery (Grigoriadis et al. 2013) and preeclampsia (Kurki et al. 2000). Other studies show that significant depressive and anxiety-related symptoms in pregnancy are associated with increased risk of preterm delivery and small-for-gestational-age births (Orr 2002; Hoffman and Hatch 2000), low birth weight, intrauterine growth retardation/SGA (Steer et al. 1992; Hauck et al. 2008), and even spontaneous abortion (Boyles et al. 2000; Michel-Wolfromm 1968). Other studies have linked antenatal depression to an increased risk of operative deliveries, use of epidural anesthesia and other invasive obstetrical manipulations, increase risk of cesarean delivery, and subjective experience of length of labor (Chung et al. 2001; Andersson et al. 2004). Studies have shown that newborns of depressed mothers show a biochemical/physiological profile that mimics the physiologic changes seen in their depressed mothers, most markedly, elevated cortisol—which is linked to adverse outcomes (Field et al. 2006). It is clear that women with depression in pregnancy are at risk for complicated births and should be considered high risk. The psychiatrist and obstetrician can work with the patient to lessen these risks through early detection and effective treatment.

Perinatal depression has furthermore been associated with significant negative effects on child development. Significant depressive symptoms in pregnancy and the postpartum period have been shown to be linked to difficult infant and childhood temperament (Britton 2011), poor or insecure attachment styles (Forman et al. 2007), and increased risk of developmental delay and lower IQ scores (Deave et al. 2008). As compared to nondepressed women and their children, these studies demonstrate the negative effects of untreated depression on infant

development. It is thought that the chronic exposure to negative affective states in the mother and their effect on the dynamics between parent and child are responsible for later disruptions in interpersonal behavior (Tronick and Reck 2009). Studies on effectively treated maternal depression show that early treatment of maternal depression is directly linked to resolution of adverse behavioral and intellectual outcomes in the child (Cicchetti et al. 2000; Bigatti et al. 2001). The identification and management of depression in the perinatal period can decrease maternal suffering and optimize the health of the offspring.

Bipolar Disorder

Though most studies do not associate an increase in antenatal manic episodes relative to nonpregnant counterparts, childbirth has long been established as the precipitant in over one out of four manic episodes (Ambelas 1987; Hunt 1995). A recent observational study showed that in women having first episodes of mania/psychosis postdelivery, the rate of subsequent non-puerperal episodes was 69 % (Brockington et al. 1981; Blackmore et al. 2013). Such results suggest that postpartum may unmask bipolar diatheses in a large proportion of women. Clinical wisdom supports these findings, and women with postpartum psychosis must be armed with an understanding that ongoing management of bipolar illness may help mitigate future episodes.

Discontinuation of medication during pregnancy occurs often in women with bipolar disorder. Although it appears to carry a high risk for antenatal and postpartum relapse. A 2007 study demonstrated an overall risk of at least one mood episode in pregnancy as high as 71 % in women with bipolar disorder who had discontinued mood stabilizer treatment. Among women who discontinued mood stabilizer treatment, recurrence risk was twofold greater than their counterparts who remained on treatment. Further, the median time to first recurrence was more than fourfold shorter, and the proportion of weeks ill during pregnancy was five times greater than subjects who continued treatment (Viguera et al. 2007). In other words, women with bipolar disturbance who stopped treatment tended to get sicker, faster, and took longer to stabilize than women who continued with their treatment.

In women diagnosed with bipolar disorder, between 25 % and 40 % of post partum periods are affected by an episode of mania or depression with psychotic features (Jones and Craddock 2001). The risk of postpartum psychosis in the general population is 1 in 1,000. This risk rises to 1 in 7 in women diagnosed with bipolar disorder and an estimated 1 in 2 in women with bipolar disorder and a family history of postpartum psychosis (Jones and Craddock 2001). Even if asymptomatic, pregnant women with family histories of bipolar disorder or postpartum mood or psychotic disturbance should be considered at significant risk for postpartum psychosis and a prophylactic plan for immediate intervention should be explicit among the treatment team.

The most frightening outcomes associated to mental illness in pregnancy have been episodes of violence associated with postpartum psychosis including filicide.

It is estimated that approximately 5 % of women with postpartum psychosis will commit infanticide (Spinelli 2009). Another case series showed that upwards of 73 % of women with psychosis who committed filicide were found to have underlying diagnoses of bipolar disorder (Kim et al. 2008). Such occurrences are tragic and terrifying, albeit rare, and harken a call to close management of all patients presenting with psychiatric symptoms in the postpartum period.

Pregnancy Risks of Bipolar Disorder

Bipolar disorder in women during pregnancy, whether treated or not, was associated with increased risks of adverse pregnancy outcomes. Studies show that pregnant women with bipolar disorder were more likely to have low birth weight infants and preterm births than pregnant women with no history of mental illness. Women with bipolar disorder are approximately two times more likely to undergo preterm delivery, and low birth weight babies, regardless of treatment status (Lee and Lin 2010; Lundgren et al. 2012).

Postpartum Psychosis

Episodes of mental illness during pregnancy generally present as predominantly depressive/dysphoric, regardless of mood disorder type (i.e., Unipolar Major Depression, Bipolar Disorder, Anxiety Disorders). Still, in the mainstream media and in the literature, increasing attention is being paid to postpartum psychosis. Postpartum psychosis is most appropriately considered a phenomenologic descriptor of the most severe of mental health disturbances that occur in perinatal period, rather than an illness of singular etiology. The illnesses that can manifest with psychosis in the postpartum period include major depression with psychotic features, bipolar I, bipolar II, schizoaffective, unspecified functional psychosis, and brief psychotic disorder. Studies since the 1980s have linked the occurrence of postpartum psychosis to underlying bipolar disorder diagnosis in over 80 % of patients (Meltzer and Kumar 1985; Kendell et al. 1987; Brockington et al. 1981). Bipolar disorder is widely accepted as the illness underlying most cases of postpartum psychosis.

Postpartum psychosis presents most commonly in the first 2 weeks of the postpartum period, often within days of delivery. Common initial symptoms include severe anxiety, restlessness, depressive mood, sleep disturbances, behavior disturbances, catatonic excitement, delusions, and hallucinations (Rohde and Marneros 1993). An early descriptive study pointed to a picture of postpartum psychosis differing from nonaffective psychoses, namely more marked reports of "delirium like" confusion and behavioral disorganization (Brockington et al. 1981). As compared with nonpeurperal counterparts, postpartum psychotic episodes present more commonly with a waxing and waning picture of thought disorganization, pronounced hallucinations and perceptual symptoms, delusions of control or

influence, lack of insight, and social withdrawal (Wisner et al. 1994; Rohde and Marneros 1993). When detected, postpartum psychosis is considered a psychiatric emergency and often requires psychiatric hospitalization (Spinelli 2009).

Schizophrenia and Pregnancy

Though a significant proportion of postpartum psychosis has been linked to underlying diagnosis of bipolar spectrum illness, women with non-affective psychotic illness (i.e. schizophrenia) represent an important proportion of women who experience an exacerbation of symptoms in the perinatal period. There is a relative paucity of literature on the course of psychosis during pregnancy and the postpartum period, possibly due to a historic resistance to seeing women with chronic psychotic illness as mothers themselves. As mental health care evolves, so does our understanding of the reproductive lives of the women we treat, their potential as parents, and their unique needs as patients.

Early studies found low fertility in women with schizophrenia, when compared with rates in the general population (Slater 1971). More recent and methodologically rigorous studies show no difference in fertility between women with schizophrenia and controls (Burr et al. 1979; Miller 1997). It is posited that an increase in fertility rates in women with chronic psychosis came with the decrease in ovulatory suppression seen with atypical antipsychotics relative to first generation neuroleptics (Howard et al. 2002). Women with psychotic illnesses tend to have fewer children than nonpsychotic counterparts, yet it is estimated that up to 60 % of women in inpatient psychiatric settings are mothers (Howard 2001).

Schizophrenia is linked to behaviors that increase pregnancy-related risks. Smoking and other substance use disorders carry a 47 % lifetime prevalence in people with schizophrenia, and a 1996 retrospective study showed that up to 78 % of women admitted to substance use during their pregnancies (Miller and Finnerty 1996). In fact, in pregnant women with schizophrenia, poor self-care, poor nutrition, prenatal care, risks of substance use, poor judgment, and fetal abuse/injury have all been linked to adverse infant outcomes (Zuckerman et al. 1989; Nilsson et al. 2002).

A 2001 study showed that children of women with schizophrenia had increased risk of postneonatal death, generally attributed to an increased risk of sudden infant death syndrome (Bennedsen et al. 2001). A large 2002 study found significantly increased risks for stillbirth, infant death, preterm delivery and low birth weight, and small-for-gestational age among the offsprings of women with schizophrenia, even when controlling for adverse health behaviors (Nilsson et al. 2002; Jablensky et al. 2005). A recent study linked schizophrenia in mothers to complicated obstetrical outcomes such as preeclampsia and Eclampsia, gestational diabetes, venous thromboembolism, operative deliveries, and postpartum medical complications (Vigod et al. 2014). Children of women with schizophrenia had a marginally statistically significant increase in the risk of congenital malformations, though no control was made for smoking or other adverse pregnancy risks

(Bennedsen et al. 2001). Such findings underscore the value and need for multifaceted and intensive supports. Intensive community and treatment team supports thoroughout the reproductive years.

Psychotic symptoms can alter women's perceptions of bodily processes, leading to late detection of pregnancy and delayed postnatal care (McNeil et al. 1984). In rare cases, a psychotic denial of pregnancy can occur, particularly in women with diagnoses of chronic schizophrenia with previous custody loss and associated anticipated separation from the baby they were carrying (Miller 1997). Miller suggests that treatment for such patients should take place in a setting that integrates comprehensive psychiatric and obstetrical care and may include pharmacotherapy, supportive psychotherapy, and evaluation of the patient's parenting skills and support network to assess and optimize continued custody (Miller 1997).

More commonly, in the postnatal period, hallucinations, paranoia, and other perceputal symptoms can interfere with the mother's ability to detect and respond to nuanced cues from the baby and require supervision or help from others (Solari et al. 2009). Likewise, the negative symptoms of chronic psychosis may interfere with a mother's ability to read her baby's nonverbal cues and may reduce capacity to communicate with and appropriately stimulate the baby (Solari et al. 2009). The disturbances in object constancy observed in children of women hospitalized early in their infancy has lead researchers to follow the social and cognitive development of children of women with schizophrenia (Gamer et al. 1976). Though it is unclear that such disturbances affect later cognitive or social functioning. Early studies link impairments in object constancy to an elevated risk of development of psychosis later in life (Gamer et al. 1976). Caretakers and kin should receive guidance to be sure that the infant's needs are being met and that appropriate bonding with mother or another caretaker is provided.

Approaches to Treatment

Despite the risks outlined above, women with mental illness most often thrive as mothers. For many women, motherhood and bonding with a new baby can bring much meaning to their lives and identities. By being sensitive to the experiences of the pregnant woman with mental illness and warning signs, families and clinicians can intervene before illness exacerbations take full hold. Understanding the environment and assessing parenting capacity can guide interventions including referrals to community resources, positioning of added supports, and the introduction of psychoeducational tools to enhance parenting capacity. Lastly, the relationships between treatment team and expectant and new mother can serve as a corrective emotional experience and template for supportive healthy relationships in growing families.

There are significant challenges to the approach of treatment of the pregnant and postpartum woman with mental illness. Much fear and stigma surrounding psychiatric diagnosis continues to exist, oftentimes leading women to delay seeking care. Social, familial, and logistical barriers to care exist and are reinforced as women

shift into role of primary caretaker, including pressures in early motherhood to tend exclusively to the needs of the newborn and family. Any attempts for a woman to care for or take time for herself may be seen as "selfish" or ungrateful. This is compounded with the expectation, in both mother and family, that pregnancy and the postpartum period are periods in life to be relished and enjoyed without ambivalence. Logistics in seeking care are notoriously difficult to arrange; the fear of stigma and child protection involvement likewise inhibit women from seeking care. The barriers to care are simple, multi-tiered, blatant, and nuanced—all at once.

One onerous challenge is the lack of consensus about treatment or consolidated treatment guidelines. This is generally attributable to the fact that data evaluating the safety and efficacy of treatments in pregnant/postpartum women are notoriously difficult to generalize and apply usefully. The data that exists is generally based on results of case studies, registries, and other non-empirically gathered means. There is a lack of prospective, high quality, well-controlled trials since randomized design in studies evaluating pharmacologic treatment of depression during pregnancy is generally not considered ethical. Data continues to be largely dependent on animal studies, case studies, and retrospective reviews. Historically, research in reproductive psychiatry has been predominantly observational and retrospective with small study populations, making results vulnerable to selection and recall bias, and the effects of other clinical confounders. Though imperfect, studies can provide useful information which requires the clinician's critical evaluation of both methodology and conclusions.

In 1979, the FDA adopted the Pregnancy Category System in an attempt to provide physicians and patients with a readymade analysis of the data to serve as guidance in the planning of pregnancy, before fetal exposure had occurred. This system has proven difficult to apply clinically as it rests on the assumption that pregnant women generally do not need medication, without consideration of the risks of untreated illness, or the consideration of the reality that unintended pregnancies (and hence, exposures) do occur (Feibus 2008). Further, it does not account for changes in pharmacokinetics and metabolism during differing stages in pregnancy or a sophisticated consideration of the applicability of animal data. The category system is sometimes interpreted as a grading system where the risk increases as one progresses through grades A through X, without consideration of the potential benefits of treatment. Fortunately, the FDA is currently considering a new system of reporting pregnancy and lactation data to provide clinicians and patients with a more clinically useful classification system (Boothby and Doering 2001; Law et al. 2010). Until this time, clinicians and patients are left to interpret risk using an understanding of each patient's history, the sparse literature on risk and treatment, and the current category system to address the treatment needs of patients.

An approach to consideration of treatment of mental illness in pregnancy requires a collaborative analysis between clinician and client in weighing the risk of untreated illness with the risk of medication exposure. It is favorable for exposure be kept to a minimum and if possible, to one agent at its lowest effective

dose. Selection of medications must be based on an understanding of the patient's history of success with medication treatment, prior experience of the patient with exposure and illness in previous pregnancies, and available safety information. It is advisable to maximize non-pharmacologic options to help minimize exposure when possible, with an understanding of the evolving nature of mood and psychotic illness in the pregnancy and the postpartum period. Due to the enormity and complexity of the topic, the use of specific medications during pregnancy and the perinatal period will not be broached here, and readers should utilize the resources section at the end of this chapter for further information.

In approaching the evaluation and treatment of the perinatal patient, the diagnostician's task is to collect an exhaustive history and review of systems in order to separate the normal somatic symptoms of pregnancy from a major mood episode. The Edinburgh Postnatal Depression Rating Scale (Murray and Cox 1990) and the Beck Depression Inventory (Holcomb et al. 1996) can be useful tools for clinicians as they have been validated for use in the obstetric population. Special attention should be paid to family history of mood disorders as well as previous history of harm to self or others, history of psychosis, and history of symptoms linked to prior reproductive events. Further, personal or family histories should be fully explored as they may point to bipolar spectrum illness and guide treatment choices.

When discussing possible interventions, discussions should be approached from an approximation of a risk–risk ratio, the risk of exposure of the fetus or newborn to maternal illness versus the risk of exposure to the treatment that is being proposed (Yonkers et al. 2009). Discussion of medication treatment of mental illness in pregnancy and during lactation typically includes a consideration of data on risks of exposure at distinct phases in the peripartum period: teratogenic risk, neonatal risks, neurodevelopmental risk, and effects on lactation. A presentation of known data should underscore the paucity of randomized controlled trials and limitations of the available data while acknowledging that substantial data and clinical experience support the safety and efficacy of many treatments. With that in mind, non-medication interventions have shown promise in helping improve health and mitigate symptoms and should be considered as clinically appropriate.

Psychotherapy

Psychotherapy in pregnancy and the perinatal period is critical for the mother suffering from all levels of symptomatology. It is critical that clinicians aid patients in the processing of this major life event, as psychosocial stressors can often be improved with counseling and social interventions either in tandem to other treatments or as a primary approach. Ego strengths, rallying of family, promotions of healthy life choices, and validation of evolving life roles and self-concept are just some arenas where psychotherapy can help ameliorate symptoms. For instance, mild postnatal depression may be improved increasing family supports. Cognitive behavioral counseling and interpersonal therapy have been shown to be useful in

treating postnatal depression (Cox et al. 1993; O'Hara 2009). Interpersonal therapy has likewise been shown to be an effective alternate or adjunct to pharmacotherapy in depression (Spinelli 1997). Psychotherapy focusing on the child–parent dyad has also shown promise in promoting maternal confidence, bonding, and child development (Cicchetti et al. 2000). Parenting support and skills groups can be especially helpful for socially isolated mothers and those with less access to educational resources, but offer all parents a social connection, valuable validation of their experiences, and the benefits associated with both teaching and learning from their peers.

Integrative Practices

More attention is likewise being given to complementary and integrative medicine and its role in pregnancy. A 2001 study showed that up to 54 % of participants with depression reported past-year use of complementary and alternative medicine. Reasons for exploring complementary approaches include, the desire for treatments to be based on a "natural approach," feeling such treatments were congruent with their own values and beliefs, and poor prior experiences with conventional approaches (Wu et al. 2007). Likewise, many integrative approaches seek to optimize health, which should be the aim of all persons involved in the care of the pregnant woman. It is therefore important for clinicians to have knowledge of complementary and integrative treatments for symptoms of mental illness in the pregnant and postpartum patient.

Several non-pharmacologic integrative treatments have shown promise as safe, effective treatments for depression in pregnancy. A small randomly controlled trial showed promise for treatment of depression with perinatal massage (Field et al. 2004) and even decreased rates of prematurity and low birth weight (Field et al. 2009). Bright light therapy has received increasing attention after an open trial showed morning light therapy to have significant antidepressant effect during pregnancy (Oren et al. 2002). Likewise, acupuncture specific to depression has been shown to be helpful in controlling symptoms in pregnant women (Manber et al. 2010). Despite encouraging data, many clinicians in practice feel that more powered systematic studies are necessary to confirm the role of complementary and alternative medicine therapies in the treatment of perinatal depression.

Conclusions

Pregnancy and the postpartum period is a time of psychiatric vulnerability for women, and both treatment and lack of treatment of mental illness carry some risk to both mother and child. Still, mental illness during this vulnerable time is predictable, identifiable, treatable, and, therefore, preventable. For the clinician treating a patient with a history of mental illness, pregnancy and postpartum period is a unique opportunity to collaborate actively with his or her patient to enhance good outcomes and help women enjoy this major life stage.

When counseling patients with mental illness regarding treatment options, it is important to elucidate the risks and benefits of treatment options for each pregnancy phase—preconception, first trimester, second trimester, third trimester, neonatal, and later in life. The risks associated with treatment change with both phases of pregnancy and the postpartum period as well as with the needs and symptom burden of the patient. Critically important is a thorough discussion of the risks both of the treatments and of untreated depression, as it evolves in pregnancy and the postpartum period (Yonkers et al. 2009).

A careful and complete assessment of and follow-up with women suffering from mental illness in pregnancy/postpartum periods should include a thorough exploration of potential psychotic symptoms and a careful safety assessment to prevent harm to both mother and child. Inquiry into the presence of bizarre delusions of influence or passivity, tactile or olfactory hallucinations, or cognitive impairment may indicate an emerging psychosis, for which psychiatric hospitalization should be strongly considered.

Mental illness itself can put women at risk for poor pregnancy outcomes, but improved research methods can help us understand the factors contributing to increased risk. Once we identify and understand the risk factors that are modifiable in treating women with mental illness, we can begin to help address such factors, with the goal of witnessing improved outcomes for both mother and child.

The goal of the mental health practitioner and patient team is to maintain mental health in women with histories of mental illness. An understanding of high risk times in pregnancy and postpartum along with identification of signs of relapse are important first steps. Clinicians and patients should be aware of relapse triggers and early warning signs (e.g., changes in sleep, hygiene, cognitive changes, affective changes). Additionally, both the clinician and patient should understand the evolving needs of the pregnant and postpartum period and adjust treatments accordingly (including but not limited to dosing of medications, timing and frequency of visits, inter-visit communication, collaboration with family, other care providers, and outside agencies). The primary medical providers and family should be contacted for collateral information about the patient and to offer psychoeducation and guidance throughout the pregnancy and postpartum period. Engagement and rallying of loved ones and caregivers can help establish a scaffolding upon which supports of the expectant and new mother can be positioned. Most cases also merit referral to high risk obstetrics for comanagement.

Many clinicians who successfully manage mental illness in pregnancy and the postpartum period expand the frame of treatment during this time of evolving needs. The clinician has a duty to collaborate with the patient's other care providers for information exchange as well as the development of a unified plan of ongoing and contingency management. Collaboration with family and medical providers can have a significant impact in maternal and fetal outcomes (Acera Pozzi et al. 2014). Similarly the rallying of family supports in the form of collaborative sessions, psychoeducation, and contacts with family members

(with patient consent) is helpful. Clinicians may also serve as sounding boards for patients to better understand the normal range of reactions to the enormous life changes they face. The clinician can help navigate information, encourage patients to seek advice and help from others, provide resources and outlets, and suggest strategies to help in the care of both mother and her growing family.

General Resources for Psychiatric Disorders in Pregnancy and the Perinatal Period

- Massachusetts General Hospital Center for Women's Mental Health Web site: http://www.womensmentalhealth.org
- MedEdPPD: http://www.mededppd.org
- Postpartum support international: http://www.postpartum.net
- REPROTOX: http://www.reprotox.org
- TERIS (Teratogen Information System)
- TOXNET (TOxicology Data Network) Http://toxnet.nlm.nih.gov
- LACTMED
- Motherrisk http://www.motherrisk.org
- OTIS Organization of Teratology Information Specialists http://www.otispregnancy.org
- American Academy of neurology practice guidelines: http://www.aan.com/go/practice/guidelines
- American psychiatric Association practice guidelines: http://www.psych.org
- National guideline clearinghouse: http://www.guideline.gov
- US FDA of Women's Health pregnancy registry: http://www.fda.gov/womens/registries/defailt.htm
- National pregnancy Registry for Atypical Antipsychotics: http://www.womensmentalhealth.org/pregnancyregistry/
- North American antiepileptic drug pregnancy registry: http://www.aedpregnancyregistry.org

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