

# Chapter 24: Perinatal Psychiatry

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## Introduction

The birth of a child is a significant milestone and life transition for any woman and her family. It is usually a joyous event, as is the pleasure in observing the extraordinary development from the highly dependent newborn into an exploring and chattering toddler. While this is generally a positive life transition, it is also a time of risk for women for developing, or having a recurrence, of a mental disorder, either during pregnancy or over the first year postpartum (what is referred to as the perinatal period). The age of first-time mothers, in the mid to late 20s, coincides with the peak incidence of the common mental disorders as well as for the psychotic disorders. It is, therefore, not surprising to find high rates of the common mental disorders over the perinatal period. The more severe mental illnesses, schizophrenia and bipolar disorder can also present during the perinatal period, presenting unique problems for the clinician.

Maternal well-being is critical for the optimal development and maturation of the human infant. Mental illness during pregnancy, and its treatments, can have adverse effects on the developing foetus and, by the same token, maternal mental illness can cause disruption to the mother-infant relationship, and attachment, that may have long-term repercussions, with the offspring at risk of developing mental disorders later in life.

From a perinatal psychiatry point of view, there is a risk of exposing the foetus and the infant to possibly harmful medications. But interestingly, it is also the

time when there is high contact with health professionals, and it is a time when we can identify women who are at risk of the common mental health problems or other disorders and provide intervention for them. It's an ideal opportunity for prevention and/or early intervention in this period.

## Importance of the Perinatal Period

The foundations of healthy development are laid down during the perinatal period; the origins of some disorders, such as schizophrenia, can be found in disruptions to healthy foetal development. Disruptions to the mother-infant relationship can also increase the risk of psychiatric disorders in later life (Box 1). This has contributed to an increased focus on the wellbeing of women during pregnancy and over the first year postnatally to prevent the intergenerational transmission of mental disorders.

### **Factors before birth that can influence childhood outcomes**

#### **Genes**

- Schizophrenia
- Bipolar Disorder
- Common mental health disorders

#### **Influences on the intrauterine environment**

- Vitamin D deficiency
- Famine
- Influenza
  - Schizophrenia
  - Bipolar

#### **Maternal illness**

#### **Medications**

#### **Lifestyle**

- Substance misuse
- Smoking
- Diet

Schizophrenia and, to an extent, bipolar disorder, are, in part, neurodevelopmental in origin and we now know that disturbances to foetal

development can increase the risk of the offspring developing these psychiatric disorders in later life (see (Boyce et al., 2018). Epidemiological studies have demonstrated that there is an increased risk of developing schizophrenia in the offspring of women who:

- Experienced famine (severe nutritional deficiency, with lack of micronutrients) during pregnancy.
- Delivered their infants in winter or spring. It is suggested that the women may have experienced vitamin D deficiency during pregnancy.
- Had influenza during the second trimester of pregnancy; this also increases the risk of the offspring developing bipolar disorder.

We now recognise that maternal mental illness during pregnancy can also have an effect on foetal development (Stein et al., 2014) that puts their offspring at risk of:

- Internalising and externalising disorders in childhood
- ADHD
- Anxiety and/or depression in adulthood

Medications used to treat maternal psychiatric disorders that pass through the placenta, can also have adverse effects on the foetus:

- There is a *small* increased risk of congenital abnormalities with the antidepressants (they are considered to be safe to use after a detailed risk benefit assessment) (Grigoriadis et al., 2013)
- Sodium Valproate carries a high risk of congenital abnormalities (it also affects neurodevelopment and can lead to children having significant cognitive impairment) (Meador et al., 2012).

Lifestyle choices such as substance misuse and poor diet, of the pregnant woman can also affect the outcome. There is increasing evidence now about maternal diet and the risk of the child developing depression and anxiety in later life (Jacka et al., 2013).

## The Stress of Becoming a Mother

Becoming a mother is generally a positive experience but it is also stressful (see Table 24.1) with a mix of biological, psychological and social stresses. Biological stresses include the physical changes, and symptoms, related with pregnancy (nausea, vomiting, constipation, dizziness, breast and other body changes, etc.)

along with hormonal changes (primarily B-HCG, progesterone and estrogen) that significantly affect a pregnant woman’s daily routine. The growing uterus, later in pregnancy, brings about pressure effects in the abdomen and impairs venous return to the heart in the supine position disrupting the sleep.

**Table 24.1.** The stresses of becoming a mother.

Biological stress	Physical changes Hormonal changes
Psychosocial stress	Role change to ‘mother’ Loss of working role Relationship changes 2 to 3 person relationship
Socioenvironmental stress	Financial pressure Change in social networks
Intrapsychic stress	Coping with dependence Own parenting experiences

Psychological changes include the role change from being a ‘woman’ to becoming a ‘mother’; a challenging and demanding role, both physically and emotionally. She might be taking the full-time mother’s role from being a working and probably, a financially independent, woman. The relationship with her partner changes from them being a dyad (or couple) to a triad (family) with the infant coming into it; changing the entire focus of her relationships. This can impact on her relationship with partner and other family members.

In addition, there are socio-environmental stresses, especially the financial pressure following maternity leave (if it is available) or job loss. There is obvious additional financial pressure associated with raising a child. Motherhood brings about changes in social networks, for example the one associated generally around work, and close friendships to new social networks comprising of other mothers and childcare.

Intra-psychic stresses for the new mother relate to her having to cope with her newborn’s dependence on her and the associated loss of freedom (this can be a particular issue among adolescent new mothers). This is strongly influenced by their childhood experiences with their own parents. How their mother related to them in childhood can significantly affect their parenting skills and ability to cope with the newborn’s emotional needs.

## Perinatal Mood Disorders

There are four different mood disorders (see Chapter 16 and 17) specifically related with perinatal period as shown in Table 24.2. Each disorder is expanded upon below.

### The 'Blues'

The Blues affect at least 70% of women and it is most likely a stress response related to the demands of labour and the sudden changes in the hormonal profile. The blues generally emerge on the 3<sup>rd</sup> to 5<sup>th</sup> day postpartum. The common symptoms are lability of mood, with a mix of anxiety and depressive symptoms, tearfulness, irritability and emotionality. It is a benign and transient condition and does not require any treatment as it spontaneously resolves after a day or two. It is important to be aware of this condition to avoid over-diagnosing postnatal depression which is a much more serious condition. In some women, the blues may precede a postpartum psychosis or postnatal depression.

### Postnatal Depression

Postnatal depression is defined as an episode of major depression that develops within the first six months after childbirth with a similar clinical picture of depression at other times in the life cycle. It is not an official diagnosis in the DSM or ICD; however, DSM-5-TR allows for a 'peripartum' specifier for disorders that have their onset during pregnancy or in the first 4 weeks postpartum (American Psychiatric Association, 2022).

Many women suffering from an episode of major depression in the first year after childbirth have their onset outside of this 4 week window, hence the term postnatal depression is used for such episodes of depression. Up to 10-15% of women will experience postnatal depression.

Postnatal depression was originally thought to be a unique form of depression because of its close association with childbirth when it was considered to be caused by the changes in hormonal levels following parturition; however, we now recognise that there is nothing unique about this form of depression as the symptom pattern is no different from major depressive disorder and any link to hormonal changes only applies to a few women with postnatal depression (O'Hara and McCabe, 2013). The best way to conceptualise postnatal depression is to use a stress-diathesis model, in which the stress of becoming a new mother triggers depression among women with an underlying vulnerability (risk factors).

**Table 24.2.** Perinatal mood disorders.

	<b>The blues</b>	<b>Puerperal psychosis</b>	<b>Antenatal depression</b>	<b>Postnatal depression</b>
Prevalence	~70%	0.1%	~10%	10-15%
Time of onset Following childbirth	3-5 days	Within 3 weeks	Any time during pregnancy	Gradual onset over first 3-6 months
Symptom profile	Anxiety Depression Tearfulness Lability of mood Irritability emotionality	Psychotic symptoms Manic presentation Melancholic presentation Indecisiveness confusion	Symptoms of major depressive disorder Low mood Fatigue worry	Symptoms of major depressive disorder + anxiety
Course	Benign/ transient	<b>Severe</b> May require hospital admission  Good remission with treatment	Variable	Gradual onset Possible chronicity
Causal factors	Hormonal Stress response	<b>Biological/genetic</b> oestrogen sensitivity	Relapse of pre-existing depression Stress Sleep disturbance Interpersonal difficulties	<b>Psychosocial</b> Poor relationship  Poor support  Dysfunctional personality style

### Risk Factors for Postnatal Depression

The risk factors for postnatal depression are predominantly psychosocial (Howard et al., 2014; Boyce and Hickey, 2005; O'Hara and McCabe, 2013) (see Table 24.3), however genetic factors play a part and, for some women, biological factors, in particular oestrogen sensitivity, may be the major contributing factor to the onset of depression. While there is a genetic component to postnatal depression, no specific gene or SNP has been identified for the disorder as yet, but there is a familial component to postnatal depression and postnatal depression runs in families.

Increased rates of adverse early life experiences have been found to increase the risk of women developing postnatal depression. Such experiences include trauma, neglect, or physical, sexual or emotional abuse. Women who have experienced poor parenting, characterised by overcontrolling or critical and uncaring parents, also have an increased risk of developing postnatal depression.

Girls under the age of 16 have a heightened risk of developing postnatal depression, although this risk may be associated with the factors that lead to them becoming pregnant at a young age. Increased risk of postnatal depression is found among women who have previously experienced episodes of depression and/or anxiety and among women with a vulnerable personality style characterised by being overly sensitive, anxious, perfectionistic or a worrier. While postnatal depression can affect women of all strata of society, higher rates are found among socially disadvantaged women and women in developing nations.

**Table 24.3** Risk factors for postnatal depression.

<b>Genetic endowment</b>	
<b>Early life experiences</b>	Trauma Neglect and abuse Poor parenting
<b>Sociodemographic</b>	Young age Social disadvantage
<b>Social environment</b>	Dysfunctional intimate relationship Poor instrumental or emotional support Poor social support network Life event stress
<b>‘Internal environment’</b>	Oestrogen sensitivity Personality style Anxious, timid, unstable Previous history of depression and/or anxiety

There is a well-known saying “it takes a village to raise a child”; a woman’s social network, and the amount of support she receives, is critically important in the perinatal period and women who have poor social network or lack social support are at a heightened risk of developing postnatal depression. While the broader social network is important, a dysfunctional intimate relationship is one of the strongest risk factors for postnatal depression (Boyce and Hickey, 2005; Boyce et al., 1991). Women with partners who provide poor instrumental (helping in practical ways around the house and with attending to the baby), or emotional support (listening

to and being empathic) in the first year after the baby is born, are at high risk of developing postnatal depression. Additional life events stress, such as bereavement during pregnancy, financial stress, or the stress of moving home (a relatively common experience among new mothers) can also contribute to postnatal depression.

## Impact of Postnatal Depression

The critical importance of postnatal depression is the impact it has on the developing infant (Stein et al., 2014). Women with postnatal depression:

- May have a poor interaction with their infants, unresponsive or intrusive
- May be insensitive and unresponsive to infant cues
- May not provide a rich environment for the infant to explore to enhance cognitive development

As a consequence, these infants may have attachment problems (attachment insecurity) which poses a risk for subsequent mental health problems later in life.

The impoverished environment with an unresponsive mother may lead to the infant having cognitive difficulties (identifiable by 1 year of age) and behavioural difficulties identifiable by the time they are four years old. These attachment, cognitive and behavioural problems seen in the children of mothers with postnatal depression are known to be the precursors of mental health problems and disorders in later life. This highlights the importance of treating women with postnatal depression to prevent such difficulties arising in the next generation. A critical issue here is to identify women with postnatal depression because they often are unaware that they are depressed and hence, do not seek treatment. To overcome this, screening tools have been developed to identify possible perinatal depression (see below).

## Depression in Pregnancy

Postnatal depression is the most well recognised mood disorder associated with childbirth and little attention was paid to women during pregnancy until the last 20 or so years. Depression during pregnancy is as common as postnatal depression (whether it is a *de novo* episode of depression or a pre-existing major depressive episode) (Bennett et al., 2004). The symptoms of depression in pregnancy are the same as major depressive disorder, but in assessing depression in pregnancy, care needs to be taken in eliciting symptoms. Some depressive symptoms may in fact be due to the women being pregnant rather than due to depression (such

as fatigue, loss of energy, poor sleep, appetite change and loss of libido). Women who are depressed in pregnancy are at higher risk of having a:

- preterm delivery,
- low birth weight baby,
- small for gestational age baby and
- increased risk of gestational hypertension.

The importance in recognising and treating depression during pregnancy is that it can have an adverse impact on the developing foetus. The offspring of mothers with depression during pregnancy have a higher risk of:

- Emotional and behavioural problems as children
- Developing depression in later life

The mechanism for this is not fully understood. However, there are speculations that depression in pregnancy can lead to over-arousal of the foetus's HPA axis (Chaudron, 2013), either directly by increasing the amount of glucocorticoids produced in the placenta, or indirectly by activation of the HPA axis leading to placental hypersecretion of corticotrophin releasing factor.

## Screening for Perinatal Depression

Many women with perinatal depression (depression during pregnancy or postnatal depression) do not seek treatment, or even consider themselves to be unwell. As a consequence, many women are not identified as being depressed (or having anxiety) and so are not treated. This is a matter of significant concern because of the potential adverse consequences of perinatal depression on the developing foetus and infant. Screening programs have now been implemented to identify women at risk of having depression (Buist et al., 2002; Austin and Marce Society Position Statement Advisory, 2014). The major screening tool is the Edinburgh Postnatal Depression Scale (EPDS) (Cox et al., 1987). This is a 10 item self-report scale scored from 0-3 for each item. A score above 12 on this scale indicates a high probability of the woman meeting DSM-5-TR criteria for major depressive disorder (American Psychiatric Association, 2022). A detailed clinical assessment must follow to confirm the diagnosis.

There is a lot of debate about using screening tools, particularly regarding their psychometric properties (validity, sensitivity and specificity). There are two important issues related to perinatal screening. First, does the screening process lead to better outcomes for women identified as being depressed? Screening, without

having the appropriate referral pathways (for full assessment and treatment) in place, achieves nothing. A second concern relates to the instrument's sensitivity and specificity, especially identifying 'false' positives. In other words, women who score high may not meet criteria for major depression (leading to costly interventions) and women with major depression who score low (false negatives) will miss out on necessary treatment.

## Treatment of Perinatal Depression

The treatment of perinatal depression is essentially no different from the treatment of depression at any other time in the life cycle, except that the developing foetus and the nursing infant always need to be kept in mind. Management strategies include lifestyle interventions (sleep hygiene, healthy diet, alcohol and tobacco cessation and abstaining from illicit drugs), psychoeducation, supportive therapy, evidence-based psychotherapies and antidepressant medications.

The first step in the management is to identify that the disorder is present. At least half of the women with perinatal depression do not have it recognised by health professionals and won't recognise that they are depressed (the reason these screening questionnaires were introduced).

Once the depression is recognized, a comprehensive biopsychosocial and lifestyle assessment should take place. The specific risk factors to the woman's depression should be identified and formulated so that treatment can be planned to target specific risk factors.

Psychoeducation about postnatal depression should be provided, explaining what perinatal depression is and how it can affect women. The key messages, in addition to explaining about depression, are that many women experience perinatal depression ("you are not alone") and many will feel ashamed about this, but there is nothing shameful about depression, it is an illness that can be treated. She will need to be told that becoming a mother is stressful and 'mothering' is a demanding role and not something that women naturally do (it has to be learned). The risk factors that have led to her depression should be explained to her along with the strategies that can be put in place to deal with them. Linking women with support groups such as the Perinatal Anxiety and Depression Association (PANDA) or Beyond Blue, either on-line or in person, will help them find new social support networks.

She should be given permission to talk about her stressors. For example, she should be allowed to talk about how motherhood is not what she expected, or that her baby won't settle at night, and she is exhausted, or that her partner is too preoccupied with his work and is not helping her with the baby. Careful, non-

judgemental active listening to the woman and allowing her to develop strategies may be a sufficient intervention for many women.

**Treatment of Postnatal Depression**

1. Recognition
2. Clarification of risk factors
3. Permission to talk
4. Psychoeducation
  - Prioritizing activities
5. Non-directive counselling
6. Specific treatments
  - CBT
  - IPT
  - Antidepressant medications
    - *Safety with breastfeeding*

Prioritizing her daily activities so that she can focus on what she needs to do (look after her infant) rather than spending time on things that may not be a priority (making sure the home is spotless) and encouraging her to take time for self-care will reduce her sense of being overwhelmed (Parker et al., 2014).

**Table 24.4.** Risks and Benefits on taking medication over the perinatal period.

	<b>Not taking medication</b>		<b>Taking medication</b>	
	<b>Benefits</b>	<b>Risks</b>	<b>Benefits</b>	<b>Risks</b>
<b>Mother</b>	No adverse effects of medication	Persistent symptoms or relapse	Maternal wellbeing	Adverse effects of medication
<b>Foetus</b>	No risk of harm from medication exposure	Impact of maternal illness on foetal development	Reduced risk of impact of maternal relapse	Risk of foetal exposure to medication

Some women may require more specific psychological treatments such as Cognitive Behaviour Therapy (CBT; see Chapter 33) or Interpersonal Psychotherapy (IPT) (Dennis and Hodnett, 2009). Some women who do not respond to non-pharmacological interventions or have a moderate to severe perinatal depression, will require antidepressant medications (in conjunction with psychological therapy) (Chisolm and Payne, 2016). There is an absence of evidence concerning the efficacy of antidepressants among women over the perinatal period (pregnant women and women not on contraception are typically excluded from participating in clinical trials), but there is no reason why they should not be efficacious for perinatal women. Electroconvulsive therapy (ECT; see Chapter 36) is a safe option for pregnant women with severe postpartum depression and psychotic depression, but careful monitoring of the foetus is required.

**Table 24.5.** Psychotropic medications in pregnancy and breastfeeding.

	<b>Pregnancy</b>	<b>Breastfeeding</b>
<b>SSRI</b>	Probably safe Moderate to severe depression Poor Neonatal Adaptation Syndrome (PNAS)	Low passage through breastmilk
<b>SNRI</b>	Probably safe Moderate to severe depression PNAS	Low passage through breastmilk
<b>SGAs</b>	Weight gain and metabolic syndrome Avoid starting clozapine	Sedation
<b>Lithium</b>	Caution in pregnancy Careful monitoring	Not to breastfeed
<b>Anticonvulsants</b>	AVOID Valproate Lamotrigine – possibly safe	Valproate (safe) Contraception

A decision about using antidepressants in the perinatal period requires a risk benefit assessment as medications will cross the placenta exposing the foetus to the drug. There is a potential, but small teratogenic risks of the medications

(approximately 4% risk of congenital cardiac defect), recognising that the rate of congenital abnormalities in the population is around 3%. The newborn may go through a withdrawal syndrome called postnatal adaptation syndrome (PNAS) if the mother has been on an antidepressant during pregnancy (especially an SSRI or SNRI). The symptoms in the newborn are distress, fussiness, being jittery, abnormal crying, hypoactivity and difficulty feeding in the first few days of life. Antidepressants will pass through breastmilk exposing the breast feeding baby to the medication. The risks and benefits of women taking medication during pregnancy and while breastfeeding is shown in Table 24.4. These risks and benefits apply for the treatment of all psychiatric disorders over the perinatal period.

## Perinatal Anxiety Disorders

While considerable attention has focused on perinatal depression, anxiety disorders are equally as prevalent over the perinatal period (Dennis et al., 2017). The origins of the anxiety disorders (panic disorder, social anxiety disorder and generalised anxiety disorder) are, like those for perinatal depression, predominately psychosocial. Anxiety over the course of pregnancy, like depression, can have an adverse impact on the developing foetus, with increased risks of behavioural and emotional disorders in the offspring (Stein et al., 2014). While there are concerns about the effect of anxiety on the developing foetus, little attention has been paid to screening for anxiety during pregnancy, but the Edinburgh Postnatal Depression Scale does identify anxiety symptoms, and so if a high score is returned, asking about anxiety symptoms as well as depressive symptoms is essential. The same applies postpartum; anxiety symptoms are common but women often do not disclose them and they have to be specifically asked. This is particularly important where women have panic attacks, and these can often be related to caring for her newborn baby. In addition to the common anxiety disorders, many women will have pregnancy-specific anxiety, related to the wellbeing of her foetus, foetal development and how she will be able to manage when she becomes a mother.

The management of perinatal anxiety disorders follows the same approach as for the management of anxiety disorders at other times in the life-cycle (Wilkins et al., 2019). Focused psychological treatments, in particular CBT, should be considered as the first line of treatment as they are safe and effective. However, some women may not respond to, or have the time to engage in, psychological treatments. In such cases, treatment with an SSRI will be required, as it will for women with severe and disabling anxiety symptoms. It is important to note the same caveats about prescribing medication over the perinatal period apply for women with anxiety disorders as it does for perinatal depression.

## Postpartum Psychosis

There is a close association between childbirth and the onset of a new psychotic illness among women that have shown no sign of mental illness beforehand. One to two women out of 1000 deliveries will suffer from this (Kendell et al., 1976). Postpartum psychosis (previously called puerperal psychosis) is one of the most interesting disorders in psychiatry. Its incidence has been consistent over time, with papers published in the early 1800s reporting the same rate as we see now with the same unique clinical picture (Boyce and Barriball, 2010; Bergink et al., 2015a). Bipolar disorder has a high risk of relapse following childbirth as do women that have had a prior episode of postpartum psychosis (Wesseloo et al., 2016).

Postpartum psychosis is not officially recognised as a unique disorder (it had been until the 1960s). However, it does seem to be related to bipolar disorder as many women who had a postpartum psychosis, are subsequently being diagnosed with bipolar disorder (Platz and Kendell, 1988; Munk-Olsen et al., 2012). Using the current DSM-5-TR criteria, women with a postpartum psychosis will be diagnosed with bipolar disorder with a peripartum onset (American Psychiatric Association, 2022). It generally has its onset within three weeks following childbirth and will present with a mix of mood and psychotic symptoms along with perplexity, confusion and catatonic symptoms.

### **Mood symptoms:**

- Depression: often with a melancholic presentation with agitation, retardation or psychosis
- Manic symptoms: with grandiosity, increased energy, reduced need for sleep, pressured speech, impulsivity and disorganisation.
- Mixed features: Women can present with a mix of depressive and manic symptoms.

### **Psychotic symptoms:**

- Delusions: These delusions are often mood congruent and related to the baby. For example, the baby is the reincarnation of God/Satan. However, paranoid delusions, and bizarre delusions can also be present.
- Hallucinations: These can also be mood congruent. For example, God is speaking to her or hearing derogatory voices telling her she is a bad mother.
- Disorder of thought form

### Other symptoms:

- Perplexity and/or confusion: Here, she may appear perplexed or confused as if she had a delirium, but the perplexity is a feature of her psychosis (she is internally preoccupied) and she is oriented to time, place and person.
- Catatonic symptoms: She may present with catatonic symptoms, such as posturing or staring off into space.

Postpartum psychosis is a psychiatric emergency because these women are at high risk of harming their infant and/or themselves. Women that kill their newborn baby (neonaticide) will often be suffering from postpartum psychosis. Women are also at risk of suicide, especially if they have a psychotic depression when they believe the baby would “be better off without me”.

#### Management of postpartum psychosis

1. Psychiatric emergency
  - Risk of harm to infant
  - Infanticide / Neonaticide
2. Admission to a mother-baby unit
  - Support for partner
  - Support for mother-infant relationship
3. Treat underlying pathology
  - Antipsychotics – first generation
  - Antidepressants
  - Mood stabilizers
    - Breastfeeding contraindicated for lithium
  - Benzodiazepines for catatonic features
4. ECT

They require an admission, ideally into a mother-and-baby unit (if one is available), so that she won't be separated from her baby. If she is admitted to a general psychiatric bed, the baby has to be nursed elsewhere. This condition needs an aggressive management with the primary goal of reducing the symptoms and achieving remission. We also want to ensure that there will be minimal separation between the mother and the baby while taking care for the infant's safety. A long separation between the mother and her infant, may lead to a poor mother-infant relationship and less secure attachment.

Generally, women with postpartum psychosis will need an involuntary admission under the Mental Health Act, as they lack insight into their illness and are likely to be non-compliant with treatment. The primary goal of treatment is to bring the acute symptoms under control, with antipsychotic medication for psychotic symptoms (delusions and hallucinations) and manic excitement (Bergink et al., 2015b). Depressive symptoms require antidepressant medication, and if there are psychotic symptoms or marked agitation, antipsychotic medication as well. As this disorder is closely aligned with the bipolar disorder, lithium is an important treatment as a mood stabilizer. However, if lithium is used, the woman is not able to breastfeed because lithium passes freely through the breast milk. Benzodiazepines can be used as first-line treatment especially in the presence of catatonic features (Bergink et al., 2015b).

ECT is a highly effective treatment for postpartum psychosis, especially for those women with a delusional/agitated depression. ECT can bring about resolution of symptoms promptly reducing the duration of separation of the mother and her infant. The partners should be supported as well, as they may be struggling with their own difficulties related to new parenthood and their partner's sudden and acute mental illness.

The aetiology of postpartum psychosis is not yet clear (Jones et al., 2014). Underpinning the disorder is a genetic predisposition, although no specific gene(s) have yet been identified (Jones and Craddock, 2001). There are three possible triggers for the disorder, over and above the genetic predisposition:

- A neuroendocrine hypothesis that suggests that some women have oestrogen sensitivity and when oestrogen levels change rapidly following childbirth, this has an effect on dopamine receptors triggering the psychosis.
- A circadian rhythm hypothesis. Disruption to circadian rhythms can trigger relapse in individuals with bipolar disorder. Childbirth often leads to loss of sleep and this is a common trigger for the onset of a postpartum psychosis.
- Another possible trigger for the onset of psychosis is an inflammatory process. There is a build-up of pro-inflammatory cytokines during pregnancy and parturition can lead to oxidative stress triggering episodes of bipolar disorder/psychosis.

## Postpartum Relapse and Bipolar Disorder

Women who have had an episode of postpartum psychosis are at risk of having a relapse with subsequent pregnancies, as are women with a bipolar disorder (Wesseloo et al., 2016).

- Risk of relapse with bipolar disorder: 38%
- Risk of relapse for postpartum psychosis: 31%

The risk of relapse is higher among women that do not take any medication (66%), but if they take prophylactic medication (predominately lithium), the risk of relapse is reduced to 23%. The use of prophylactic medications in preventing relapse in bipolar disorder can be crucial. However, there should be careful discussion with the woman and her partner about the risks and benefits of using and avoiding these medications both for the mother and the baby.

## Mood Stabilizers in Pregnancy

### Lithium

Lithium is one of the most commonly used mood stabilizers and is a gold standard for treating bipolar disorder. However, infants exposed to lithium in utero early in pregnancy have an increased risk of developing cardiac abnormalities, specifically Ebstein's anomaly. If a woman is taking lithium during pregnancy, appropriate and regular scans must be done to rule out a cardiac abnormality in utero (Galbally et al., 2010). Lithium has a narrow therapeutic index and the serum concentration can go to toxic levels relatively easily. There are considerable hemodynamic changes happening especially towards the latter half of pregnancy warranting frequent blood monitoring and lithium dose adjustments. A safe strategy is to reduce the dose of lithium closer to birth to avoid dehydration-related toxicity in the mother and toxicity in the newborn. The dose can be increased again as soon as the baby is born. It is important to note that Lithium is secreted in breast milk in considerable amounts and it is not safe to breastfeed while being on lithium.

### Sodium Valproate

Sodium valproate is a widely-used anticonvulsant mood stabilizer. However, its use is NOT recommended for women of childbearing age as it is a potent teratogen with at least 17% of exposed foetuses having a congenital abnormality, specifically spinal tube defects. It also has an effect on the developing

brain, with infants exposed to sodium valproate in utero having an IQ at least one standard deviation below other infants.

## Preconception Counselling

The use of mood stabilizers and antipsychotics during pregnancy and breastfeeding requires careful planning, and women with bipolar disorder require preconception counselling to plan out how to manage their pregnancy and the postpartum period. Three important points need to be made about this:

1. Women should be informed about this at the time of diagnosis of bipolar disorder, so that they do not have an unplanned pregnancy. There should be a discussion about contraception at the time of diagnosis.
2. Women should be advised not to stop medication abruptly should they conceive.
3. There needs to be a detailed discussion about the risks and benefits of taking a mood stabilizer over the course of the pregnancy, and in the postpartum period.

## Schizophrenia

Little attention had been paid to women with schizophrenia (see Chapter 15) and their reproductive life until recently. There are a number of reasons for this. Women with schizophrenia had interpersonal difficulties and tended not to form intimate relationships that could contribute to them not having children. Their treatment with the first-generation antipsychotics that raise prolactin levels may also have contributed to them failing to conceive. Furthermore, women with schizophrenia were thought to have low fecundity. We now know that women with schizophrenia do not have low fecundity and, with the second-generation antipsychotics, infertility is no longer a major side effect of the medication.

A major issue concerning women with schizophrenia is their capacity to be able to effectively care for, and look after, a newborn baby. Two important factors contribute to this:

- the presence of positive symptoms (such as, being distracted by hallucinations, preoccupied by delusional thinking) and disorganisation can interfere with their ability to look after the baby.
- Cognitive impairment can make it difficult for them to be able to structure their life to look after the baby.

It is important, in the management of women with schizophrenia, to have a discussion with them about contraception (this is a population at high risk of exploitation by others and at risk of having an unplanned or unwanted pregnancy), and the potential risks of medication on the developing foetus as part of their psychoeducation at the time of diagnosis.

Should they do plan to have a baby, they should undergo effective preconception counselling to determine the capacity and capability of looking after a baby. Such preconception counselling will need to review her medications to ensure that they are safe during pregnancy and if they wish to breastfeed. There will also need to be extensive planning about how she will be able to manage her baby and ensure that she has adequate support. An unfortunate aspect about women with schizophrenia is that up to 40 to 50% of them will have their infants removed by social services because they are unable to adequately care for the baby.

## Further Reading

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