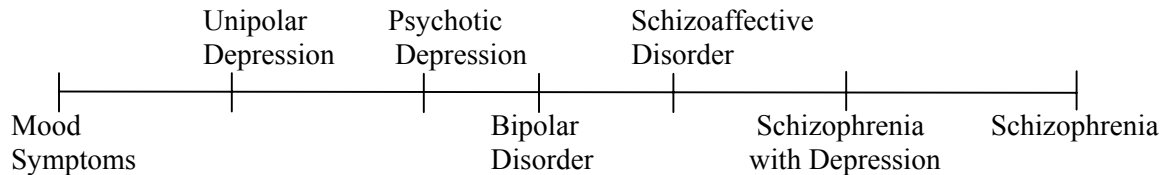

Reproductive Mental Health Guideline 6
MENTAL ILLNESS DURING THE PERINATAL PERIOD:
PSYCHOTIC DISORDERS

INTRODUCTION

Psychosis is a mental state that is characterized by a loss of contact with reality **without** a clouding of consciousness. Psychosis can be caused by a variety of psychiatric disorders, the most common being: schizophrenia, schizoaffective disorder, and bipolar disorder. Diagnosis of a **particular** psychotic disorder depends on what brought about the illness and how long the symptoms last.

Three percent of people will experience a psychotic episode during some stage of their life, and the first episode most often occurs between the ages of 16 and 35. While psychotic disorders affect roughly equal numbers of men and women, they differ in their expression by gender, and subsequently in their treatment requirements. Most notably, a briefer duration of symptoms, the presence of mood symptoms, more rapid cycling, and later onset are all more prevalent in women than in men.¹

It may be helpful to consider psychotic disorders along the following continuum:



When addressing the issue of psychoses in women during pregnancy and the postpartum period, it is important to distinguish between the women who have pre-existing psychotic disorders, and those who develop first-onset psychotic disorders. The course of the disorder and treatment issues will vary significantly in these two populations. First-onset psychotic disorders that develop during the perinatal period require a differential diagnostic evaluation similar to that performed with nongravid patients.²

First-onset psychosis in the perinatal period is a rare condition; the prevalence has consistently been reported to be approximately 1 per 1000 live births.^{3,4} This condition has a rapid onset, usually manifesting itself within the first few days to 2 weeks after childbirth,⁵ or at most, within 3 months postpartum,⁴ and should be considered a medical and obstetrical emergency.¹ The presence of a psychotic disorder may interfere with a woman obtaining proper prenatal care, and there is a heightened risk of suicide and/or infanticide with perinatal psychoses, with rates estimated as high as 4%.⁶

In contrast, there is consistent evidence to support the finding that women who have a history of

psychotic illness are particularly vulnerable during the early postpartum period. In a recent prospective study of 100 consecutive admissions to a specialized mother-baby unit in England, Kumar and his colleagues reported that the majority of the women in this study with bipolar disorder were admitted to hospital within the first 2 postpartum weeks.⁷ The women with schizophrenia in this study were less likely to have acute relapses in the postpartum period, but instead displayed a more chronic course throughout the entire perinatal period, and required more support from nursing and community services.

RISK FACTORS FOR A PSYCHOTIC DISORDER DURING THE PERINATAL PERIOD

- History of psychosis with previous pregnancies – relapse rates have been reported to be as high as 70%^{3,5,8}
- Positive family history of psychosis
- Positive family history of specific personality disorders: schizotypal, schizoid, paranoid personality disorder
- History of bipolar disorder (I or II) – relapse rates are between 20 and 50% in the postpartum period^{3,9}
- Use of drugs, i.e., drug-induced psychosis

SIGNS AND SYMPTOMS OF A PSYCHOTIC DISORDER DURING THE PERINATAL PERIOD

I. POSITIVE SYMPTOMS (one or more of these symptoms are *always* present)

- Hallucinations – sensory perceptions, most commonly auditory or visual
- Delusions – fixed false beliefs. Common delusions are of persecution, religion, thought insertion or thought withdrawal
- Thought disorder – thought blocking, thought broadcasting

II. NEGATIVE SYMPTOMS (often co-occur with the positive symptoms)

- Sleep disturbances
- Agitation
- Social withdrawal
- Behavioural changes
- Affective blunting
- Poverty of thought and/or speech
- Loss of motivation

These signs and symptoms may be subtle; therefore it is critical to always *ask* the patient if she has been experiencing any of these symptoms.

An initial psychotic episode usually follows a specific course consisting of 3 phases:

A . Prodromal Phase.

The symptoms of the prodrome phase are highly variable, and some patients may not even go through this phase. Some patients will experience a change in feelings, thoughts, and perceptions, but they will not be delusional, hallucinating, or having thought disturbances. The key for early intervention is to keep the possibility of psychosis in mind when a patient presents with such symptoms.

B. Acute Phase

This is the phase in which positive symptoms of psychosis will emerge. Negative symptoms also commonly co-occur with the positive symptoms during the acute phase.

C. Recovery Phase

The recovery of the psychotic patient depends on the interaction of biopsychosocial treatment, the treatment environment, and the family and social environment.

SCHIZOPHRENIA DURING THE PERINATAL PERIOD

Many women with pre-existing or chronic schizophrenia will become pregnant. This is due to a variety of factors, including: an increase in the use of the newer antipsychotic medications, which cause less pronounced changes in prolactin levels, and thus more consistent ovulation and increased chances for pregnancy. In addition, the movement towards de-institutionalization of patients with serious mental illnesses has resulted in increased availability of sexual partners, and changing attitudes towards conception.¹⁰ The transition into motherhood for a woman with schizophrenia can be difficult due to both the illness itself and a host of psychosocial stressors. Stressors may include poor social supports, poverty, poor antenatal care, psychotic denial of the pregnancy, fear and suspicion of health care professionals, and fear that she will lose custody of her infant due to her illness.^{11,12} In addition, pregnant women with schizophrenia may experience heightened delusions related to the fetal movements.¹²

Although women with psychotic illnesses generally have poor attendance at medical clinics, they are more likely to seek care during the perinatal period than at any other point in their lives. Thus, this period represents a unique opportunity for health care providers to offer education and support regarding perinatal care and parenting. In order to provide optimal support for women with serious mental illnesses, the mother should be linked to the appropriate community services as soon as possible. A comprehensive list of community resources can be found in Guideline 2: Discharge Planning and Community Follow-up, Appendix E.

**TABLE 1: Summary of Criteria for Schizophrenia
Adapted from DSM-IV (American Psychiatric Association (APA), 1994)¹³**

- A. Two or more of the following must be present for a significant amount of time during a period of one month:
1. delusions
 2. hallucinations
 3. disorganized speech (i.e., incoherence)
 4. disorganized or catatonic behaviour
 5. negative symptoms
- B. Marked impairment in one or more major areas of social or occupational functioning such as work, interpersonal relationships, or self-care.
- C. The disturbance must persist for at least 6 months; this 6-month period must include at least 1 month of the symptoms described in Criterion A. This period may include periods of prodromal symptoms.
- D. Schizoaffective Disorder and Mood Disorder with Psychotic Features have been ruled out because either no major depressive, manic, or mixed episodes have occurred concurrently with the active-phase symptoms or, if such episodes have occurred with the active-phase symptoms, the duration has been brief relative to the duration of the active and residual periods.
- E. The disturbance is not due to the effects of a substance or a general medical condition.
- F. If there is a history of Autistic Disorder or another Pervasive Developmental Disorder, the additional diagnosis of Schizophrenia is made only if delusions and hallucinations are also present for at least a month.

I. SUBTYPES OF SCHIZOPHRENIA

A. Paranoid Type

Involves a preoccupation with one or more delusions or frequent auditory hallucinations. Disorganized speech, disorganized or catatonic behaviour, or flat/inappropriate affect are *not* prominent.

B. Disorganized Type

Disorganized speech and behaviour, and flat/inappropriate affect are all prominent. The criteria are not met for Catatonic type.

C. Catatonic Type

The clinical picture is dominated by at least 2 of the following:

- immobility characterized by catalepsy or stupor
- excessive motor activity

- resistance to all instructions or maintenance of a rigid posture against all attempts to be moved
- mutism
- voluntary movements involving inappropriate or bizarre postures, stereotyped movements, prominent mannerisms or grimacing and/or
- echolalia or echopraxia

D. Residual Type

The current clinical picture is without prominent psychotic symptoms (delusions, hallucinations, disorganized speech and behaviour), but there is continued evidence of the disturbance, as indicated by the presence of negative symptoms or 2 or more of the symptoms in Criterion A, but in an attenuated form.

E. Undifferentiated Type

Involves the presence of the symptoms described in Criterion A, but the criteria are not met for the Paranoid, Disorganized, or Catatonic subtype.

II. SCHIZOPHRENIFORM DISORDER

The diagnostic criteria for Schizophreniform Disorder are identical to those of Schizophrenia, except for two differences:

- the total duration for this illness is at least one month but *less than* 6 months, and
- social or occupational impairment are not required for a diagnosis (though they may occur).

III. SCHIZOAFFECTIVE DISORDER

**TABLE 2: Summary of Criteria for Schizoaffective Disorder
Adapted from DSM-IV (APA, 1994)¹³**

- | |
|---|
| <p>A. An uninterrupted period of illness during which either a Major Depressive Episode, a Manic Episode, or a Mixed Episode occurs at some point in concurrence with the symptoms of Criterion A for Schizophrenia.</p> <p>B. Delusions or hallucinations have been present for at least 2 weeks in the absence of prominent mood symptoms.</p> <p>C. Symptoms that meet the criteria for a mood episode are present for a significant portion of the duration of the active and residual phases.</p> <p>D. The disturbance is not due to the effects of a substance or a general medical condition.</p> |
|---|

In addition, the DSM-IV includes two specific types of Schizoaffective Disorder:

A. Bipolar Type – if the disturbance includes a Manic or a Mixed Episode

B. Depressive Type – if the disturbance includes *only* Major Depressive Episodes.

BIPOLAR DISORDER DURING THE PERINATAL PERIOD

The prevalence of bipolar disorder (type I or II) is between 1% and 2% in the general population, and both are common in women during the perinatal period.¹⁴ While the rate of the illness is equal in men and women, it is expressed differently between the sexes. Specifically, the rate of rapid-cycling bipolar disorder (as defined by 4 or more episodes of mania, hypomania, or depression in one year) is 3 times higher in women.¹⁵ With regards to the course of bipolar illness during pregnancy and the postpartum period, the risk of an episode of mania, hypomania, or depression for a bipolar woman during this period has been reported to be between 13.3% and 21.4%.³ In addition, the recurrence rate of bipolar relapse with subsequent pregnancies is as high as 50%.¹⁶

Management of perinatal women with bipolar disorder poses several clinical challenges. The most common antimanic medications, such as lithium, carbamazepine, and valproate, are all associated with fetal risk during the early stages of pregnancy, as well as potential risks during labour and delivery. However, discontinuation of these medications, specifically lithium, is associated with a high rate of relapse of the illness in bipolar women. This relapse often occurs very rapidly after the medication is stopped, and may result in higher doses or the use of multiple medications in the long-run in order to achieve symptom control.^{17, 18, 19} The treatment plan for women with bipolar disorder who are of reproductive age should always include a risk/benefit analysis for pregnancy. Please refer to the **Pharmacotherapy** section in Table 3, page 7 for more information regarding the use of lithium and other anti-manic medications in the perinatal period.

TABLE 3: Summary of Criteria for Bipolar I Disorder
Adapted from DSM-IV (APA, 1994)¹³

| |
|---|
| <p>A. The essential feature of Bipolar I Disorder is a clinical course that is characterized by the occurrence of one or more Manic Episodes or Mixed Episodes.</p> <p>B. A Manic Episode is a distinct period of abnormally and persistently elevated, expansive, or irritable mood. This period must be at least 1 week in duration, and must be accompanied by at least 3 of the following symptoms:</p> <ul style="list-style-type: none">• inflated self-esteem or grandiosity• decreased need for sleep• pressure of speech• flight of ideas• distractibility• excessive planning or participation in multiple activities• psychomotor agitation or restlessness• excessive involvement in activities that have a high potential for dangerous or painful consequences <p>If the mood is irritable rather than elevated or expansive, at least 4 of the above symptoms must be present.</p> <p>C. A Mixed Episode is a period of time in which the criteria are met for both a Manic Episode and a Major Depressive Episode nearly every day for at least 1 week. The individual experiences moods which rapidly shift between sadness, irritability, and euphoria, along with symptoms of a Manic Episode and a Major Depressive Episode.</p> <p>D. The disturbance must be severe enough to cause marked impairment in social or occupational functioning or to require hospitalization, or is characterized by the presence of psychotic features.</p> <p>E. The disturbance is not due to the direct effects of a substance (drug of abuse, medication, or treatment), or a general medical condition.</p> |
|---|

There are 6 separate sets of criteria for Bipolar I Disorder:

- Single Manic Episode
- Most Recent Episode Hypomanic
- Most Recent Episode Manic
- Most Recent Episode Mixed
- Most Recent Episode Depressed
- Most Recent Episode Unspecified

While Bipolar I Disorder – Single Manic Episode describes individuals who are having a first episode of mania, the remaining criteria sets are used to describe the nature of the current

episode. It is important to note that Bipolar I is a recurrent disorder: almost all individuals who have a single Manic Episode will go on to have future episodes.

The criteria for a Hypomanic Episode are the same as for a Manic Episode, with the exception that the period of abnormally and persistently elevated, expansive, or irritable mood must be 4 or more days in duration, as opposed to at least 1 week in duration for a Manic Episode. In addition, delusions and hallucinations cannot be present in an Hypomanic Episode, the episode cannot be severe enough to cause marked impairment in social or occupational functioning, and there are no psychotic features.

TABLE 4: SUMMARY OF CRITERIA FOR BIPOLAR II DISORDER
Adapted from DSM-IV (APA, 1994)¹³

- | |
|---|
| <ul style="list-style-type: none">A. Presence of one or more Major Depressive Episodes.B. Presence of at least one Hypomanic Episode.C. No history of either a Manic Episode or a Mixed Episode.D. The symptoms present in Criteria A and B are not better explained by a diagnosis of Schizoaffective Disorder, and are not occurring in conjunction with Schizophrenia, Schizophreniform Disorder, Delusional Disorder, or a Psychotic Disorder not Otherwise Specified.E. The symptoms cause significant impairment in usual functioning at work, school, and social activities. |
|---|

In addition to the criteria for Bipolar I and Bipolar II Disorders, the DSM-IV includes a specifier for Postpartum Onset, stating that the onset of the disorder must occur within 4 weeks of giving birth. The symptoms do not differ from those of a non-postpartum episode, although a fluctuating course and mood lability may be more pronounced in the postpartum woman. If delusions are present, they usually involve the newborn infant.

ASSESSMENT TOOLS

I. MINI-INTERNATIONAL NEUROPSYCHIATRIC INTERVIEW (M.I.N.I., Version 5.0.0)

The M.I.N.I. is a short, structured, clinician-rated scale that is based on the criterion of Axis I psychiatric disorders described in both the DSM-IV (Canada and USA) and the ICD-10 (Europe).²⁰ Module L of the M.I.N.I. focuses specifically on psychotic disorders, and it is used to *establish* such a diagnosis. As co-morbid depression is also very common in women with psychoses, Module A, which focuses specifically on major depressive disorder, may also be useful in the evaluation of a woman who presents with a psychotic illness in the perinatal period. The M.I.N.I. has been translated into 30 languages, and both reliability and validity have been

demonstrated in several studies.²⁰ A copy of the M.I.N.I. can be found in the Journal of Clinical Psychiatry, 1998;59(Suppl 20):34-57.

II. BRIEF PSYCHIATRIC RATING SCALE (BPRS)

The BPRS is a very widely used tool that measures psychotic and non-psychotic symptoms in patients with severe psychiatric illnesses, particularly schizophrenia.²¹ The 18-item BPRS is one of the most widely researched tools in psychiatry, and the reliability has been demonstrated in several studies.^{22,23} This scale consists of 18 items that are rated by the clinician on a 7-point scale of severity (1=not present, 7=extremely severe). The rating is based upon observations made by the clinician, as well as verbal reports made by the patient.

MANAGEMENT OF PSYCHOTIC DISORDERS DURING THE PERINATAL PERIOD

TABLE 5: Treatment Modalities for Psychotic Disorders in the Perinatal Period

| SYMPTOMS | TREATMENT |
|--|---|
| Prodrome and Acute Phases of a Psychotic Episode | I. Pharmacotherapy II. Electroconvulsive Therapy (ECT) |
| Recovery Phase | III. Psychosocial Therapies (used in conjunction with pharmacotherapy or ECT) |

I. PHARMACOTHERAPY

Treatment with an antipsychotic or mood-stabilizing medication is the essential starting point in reducing psychotic symptoms. Pharmacotherapy is the most effective method for reducing the severity and frequency of hallucinations and delusions, both of which are usually present in an acute psychotic episode. It is important to remember, however, that all psychotropic medications cross the placenta and cause *in utero* exposure to the developing fetus, that these medications are found in breast milk in varying amounts, and that they are passed on to the nursing infant. When pharmacotherapy is indicated for women who are planning to conceive, pregnant, or postpartum, the risk for harmful drug effects on the baby must be weighed against the risks of untreated illness in the mother. Potential risks to the baby from *in utero* medication exposure may include congenital anomalies, drug toxicity, and neonatal withdrawal syndrome. Potential risks to the baby from exposure to medications through breast milk may include drug toxicity and undetermined effects on neurobehavioural development.

The treatment goal during the perinatal period is to limit the pharmacologic exposure to both the mother and her fetus or child by using the minimum effective dosage of medications and limiting the total number of medications used while maintaining mental health.¹⁹

As medication is almost always indicated for the treatment of psychotic disorders, the selection of which medication to prescribe to a pregnant or lactating mother becomes a critical choice.

Selection of a medication in pregnancy and/or lactation should include a consideration of the following:

- Patient's prior response to antipsychotic medications⁹
- Anticipated efficacy and response of the individual patient²⁴
- Side effect profile in each individual patient⁹
- Concurrent medications and risk of interactions
- Potential adverse effects of the medication for the pregnant woman and her fetus, or for the mother and her nursing infant^{24,25}

Maternal, fetal, and neonatal systems of drug absorption, distribution, metabolism, and elimination are all constantly changing throughout the pregnancy, postpartum, and neonatal periods. Some of these variations require an increased or decreased dose of a specific medication, thus potentially increasing or decreasing drug exposure to the fetus or nursing infant. In pregnancy, the changes in dosing can be complex depending on the trimester of exposure. The effectiveness of a particular medication should therefore be monitored throughout the entire pregnancy and into the postpartum period in order to achieve the lowest possible dose that provides adequate control of the *psychotic disorder*.²⁴

Table 7 on page 12 lists dosing information for the mood stabilizing and antipsychotic medications, as well as the risks involved with the use of these medications during pregnancy and breastfeeding. Data for many of the newer agents is very limited, specifically regarding the long-term effects on infants exposed to these agents. Strategies to minimize drug exposure during the most sensitive period of gestation and during breastfeeding should be considered. Such strategies may include:

- If possible, avoid medication from the 3rd to 8th week gestation when major organogenesis occurs
- Use the lowest possible dose of medication that will give a therapeutic response
- When possible, use a medication that is known to result in lower fetal/neonatal exposure, either through lower accumulation in breast milk, and/or through lower documented accumulation in fetal/neonatal serum or one which has a reduced side effect profile in the fetus and newborn
- The use of recently released medications in the perinatal period should be discouraged until more information is available regarding the effects of the medication

The American Food and Drug Administration (FDA, 1979) has provided 5 categories to classify which medications, when used during gestation, are associated with congenital defects in the developing fetus. Although it doesn't provide information on the effects of the medication during a specific trimester, the FDA classification system is useful for ascertaining possible risks throughout the entire pregnancy, and is widely used. The classification system is on the following page.

TABLE 6a: Food and Drug Administration Pregnancy Risk Categories

| | |
|---|--|
| A | Adequate, well-controlled studies in pregnant women have failed to demonstrate a risk to the developing fetus. |
| B | Either animal studies show a risk, but human studies do not; or, if no adequate studies have been conducted in pregnant women, then animal studies have not demonstrated a risk. |
| C | Human studies are lacking, and animal studies have either produced adverse effects or are also lacking. Therefore, the risk of medication exposure in the fetus cannot be ruled out. Medications should be used in pregnancy only when potential benefits outweigh potential risk. |
| D | Positive evidence of fetal risk has been demonstrated in humans. However, the potential benefits of use in pregnant women may outweigh the potential risks, thus decisions must be made on an individual basis. |
| X | The medication is contraindicated in women who are or may become pregnant. The fetal risk of medication exposure clearly outweighs any potential benefits to the mother. |

TABLE 6b: Lactation Risk Categories

| | |
|----|--|
| L1 | The medication has been taken by a large number of breastfeeding mothers without any documented adverse effects in their nursing infants. Controlled studies have been conducted and have not identified an increased risk to infants. |
| L2 | The medication has been studied in a limited number of breastfeeding women, and no adverse effects have been documented in their infants. |
| L3 | No controlled studies of the medication have been conducted in breastfeeding women. The medication should be used only when the potential benefits to the mother outweigh the potential risks of infant exposure. |
| L4 | There is documented evidence of risk to infants exposed to this medication through breast milk. However, the potential benefits of use of the medication in women may outweigh the potential risk to the nursing infants, so the decision must be made on an individual basis. |
| L5 | This medication is contraindicated in mothers who are breastfeeding. Human studies have clearly demonstrated risk to exposed infants, and this risk outweighs any potential benefits. |

The lactation risk classification system has been developed by Hale, and is described in detail in his publication *Medications in Mothers' Milk, 9th edition* (2000).⁶ The 5 categories closely follow the pregnancy risk categories of the FDA, and they outline the infants' risk of medication exposure through breast milk.

TABLE 7. Pharmacologic Treatment of Psychotic Disorders During the Perinatal Period.^a

| Drug Class | Start Daily Dose at (mg) ^b | Max Daily Dose at (mg) | Pregnancy Risk Category ^c | Fetal Risk ^d | Lactation Risk Category ^e | Breastfeeding ^f |
|--|---|-------------------------------|--------------------------------------|--|--------------------------------------|--|
| Mood Stabilizers | | | | | | |
| carbamazepine (Tegretol®) Ref: 27-29 | 200 | 1600 ^{xii} | C | Estimated risk of neural tube defects with carbamazepine (CBZ) and valproate (VP) during pregnancy is 1% and 1-2%, respectively. Facial dysmorphism has also been associated with CBZ and VP during pregnancy. Women of childbearing age taking CBZ or VP should take folic acid supplements prior to conception and throughout the pregnancy. | L2 | Both carbamazepine and valproate are approved by the American Academy of Pediatrics for use in breastfeeding mothers. Small amounts are secreted into breastmilk and have been measured in infant serum, but neither of these medications have been found to be associated with adverse events in infants. |
| valproate (Epival®) Ref: 28-30 | 750 | 3000 | D | As above. | L2 | As above. |
| clonazepam (Rivotril®) ^g Ref: 28, 31 | maint.: 2 acute: 6 | 8 24 | C | Clonazepam exposure during pregnancy has been associated with symptoms of newborn toxicity, including apnea, cyanosis, lethargy, and hypotonia. No long-term effects have been reported for clonazepam, although data is limited. | L3 | Clonazepam has been associated with apnea in nursing infants. |
| lithium carbonate (Lithane®, Carbolith®) Ref: 19, 32-34 | maint.: 400 acute: 900 | 1200 2400 ^g | D | First trimester exposure to lithium has been associated with an increased risk of fetal cardiovascular anomalies, particularly Ebstein's anomaly. Use near term may produce neonatal toxicities. | L4 | Lithium is excreted into breastmilk at 30-40% of maternal serum concentrations, and therefore is contraindicated during breastfeeding. |
| chlorpromazine (Largactil®) Ref: 28 | 75 | 1000 | C | Reports of birth defects in infants exposed to chlorpromazine, fluphenazine and trifluoperazine have not shown a pattern of phenothiazine-associated anomalies nor a consistent increase in the overall rate of birth defects compared to that expected for other phenothiazines. | L3 | Chlorpromazine has a long half-life and is very sedating. Long-term use may lead to accumulation in the nursing infant, therefore caution is advised. |

| | | | | | | |
|---|-----|-----|---|--|----|---|
| fluphenazine (Moditen®) Ref: 28 | 2 | 40 | C | As above. | L3 | Fluphenazine has a very long half-life of 14 days. Caution advised, observe infant for sedation. |
| trifluoperazine (Stelazine®) Ref: 24 | 2 | 60 | C | As above. | L3 | Observe infant for sedation. |
| haloperidol (Haldol®) Ref: 24, 28 | 1.5 | 6 | C | Haloperidol does not have known teratogenic effects based on animal data and limited case reports in humans. | L2 | Caution advised, observe infant for sedation. |
| loxapine (Loxapine®) Ref: 28 | 15 | 250 | C | There are no published studies on the use of loxapine in pregnant women. Animal studies with loxapine have shown retarded fetal development. | L4 | Loxapine is a potent tranquilizer, and may produce adverse effects in the developing fetus or nursing infant. |
| pimozide (Orap®) Ref: 28 | 2 | 20 | C | There are no published studies on the use of pimozide in pregnant women. Animal studies have shown retarded fetal development. | L4 | No information is available on the use of pimozide during breastfeeding. |
| clozapine (Clozaril®) Ref: 35-38 | 25 | 450 | C | Clozapine use in pregnancy has been associated with high accumulations in fetal serum, “floppy baby syndrome”, and neonatal seizures. Data is limited. | L3 | Breastfeeding is not recommended because of a high accumulation in breast milk. |
| olanzapine (Zyprexa®) Ref: 39 | 2.5 | 10 | C | A report from the Lilly Worldwide Safety Database on 23 pregnancy outcomes found no increased risk of adverse fetal outcomes. | L3 | There is very limited data available on the use of olanzapine during breastfeeding. Caution is advised. |
| quetiapine (Seroquel®) | 50 | 600 | C | There are no published studies on the use of quetiapine in pregnant women. | L4 | No information is available on the use of quetiapine during breastfeeding. |
| risperidone (Risperdal®) Ref: 40 | 1 | 8 | C | There are no published studies on the use of risperidone in pregnant women. | L3 | One case report of a nursing infant exposed to risperidone did not indicate any adverse effects. |

- a. Doses adapted from the *Clinical Handbook of Psychotropic Drugs*, 10th revised edition. Starting doses of medications are lower for pregnant and postpartum women than for the general adult population.
- b. Monograph doses are guidelines only. Doses must be individualised for each patient.
- c. Adapted from the *Food and Drug Administration (FDA, 1979)*. See Table 6a.
- d. Comments adapted from GG Briggs et al., (1998), *Drugs in Pregnancy and Lactation*, 5th edition, as well as TW Hale (2000), *Medications in Mothers’ Milk*, 9th edition. Refer to referenced articles for specific details.
- e. Adapted from TW Hale (2000). *Medications in Mothers’ Milk*, 9th edition. See Table 6b.
- f. Comments adapted from GG Briggs et al., (1998), *Drugs in Pregnancy and Lactation*, 5th edition, as well as TW Hale (2000), *Medications in Mothers’ Milk*, 9th edition. Refer to referenced articles for specific details.
- g. Starting and high doses are higher for mania and adjunct psychotic states than for panic disorder and anxiety.

II. ELECTROCONVULSIVE THERAPY

Numerous clinical reports of Electroconvulsive Therapy (ECT) in pregnant women over the past 60 years indicate that it is an effective line of treatment with few adverse effects for both mother and fetus.⁴¹ ECT is particularly useful in cases where rapid treatment is imperative and where a comprehensive team of health care professionals (psychiatrist, obstetrician, anesthesiologist) is available.^{2,42}

ECT use in postpartum mothers is an option for specific conditions such as severe depression where psychotic symptoms are present, acute mania, and in mothers who are at a risk for suicide or infanticide.⁴³ In addition, it is a safe treatment option for the infant and allows for continuation of the breastfeeding schedule with only minor disruptions at the time of the treatment.

The number of ECT treatments required to produce an effective response in a population of pregnant and postpartum women is most often in the range of 3-9, paying special attention to individual responses. Treatments are usually administered 3 times per week.

III. PSYCHOSOCIAL THERAPIES AS ADJUNCTIVE TREATMENTS

Psychosocial therapies such as psychoeducation, supportive psychotherapy, cognitive behavioural therapy, interpersonal psychotherapy, and group therapy, are all used as adjuncts to pharmacotherapy or electroconvulsive therapy to help patients with recovery from an initial psychotic episode. These adjunctive treatments are all focused on maintenance of well being once the initial psychotic episode is under control and the patient is thinking clearer. For a complete description of these psychosocial therapies, please refer to the Psychosocial Therapies section in Guidelines 4 and 5.

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