Breastfeeding and Medication

Post-Partum Psychosis and Breastfeeding

For a detailed story of living with PPP I recommend reading Eve's story https://www.mind.org.uk/information-support/your-stories/my-experience-of-postpartum-psychosis/

Description

It appears that many women feel frustrated that their wishes to breastfeed are ignored or dismissed. Postpartum psychosis is a rare but serious mental health illness that can affect a woman soon after she has a baby. It is sometimes called puerperal psychosis. It can develop very suddenly. This document has been written to support both parents in making evidence-based decisions on continuing to breastfeed whilst the mother is being treated for post-partum psychosis. It is also intended to provide some basis for discussion before embarking on a subsequent pregnancy which would be treated as high risk with a one in two risk of a further episode.

PPS is a medical emergency and sometimes the safety of the mother over rules the value of breastfeeding for a period. However, sudden cessation of breastfeeding can produce a risk of mastitis unless milk is removed appropriately under the support of a breastfeeding expert. Once treatment has commenced it should be possible to restart breastfeeding if the family so desire.

Symptoms

- Hallucinations or delusions
- a manic mood or a low mood
- loss of inhibitions
- feeling suspicious or fearful
- restlessness
- feeling very confused

- behaving in a way that is out of character

The cause is unknown but is more likely if you (or a close relative) have had postpartum psychosis after a previous pregnancy or if you have been diagnosed with bipolar disorder or schizophrenia in the past.

Postpartum psychosis is an emergency and normally requires admission to a hospital. Sadly, mother and baby units are not always available, and mothers may be separated from their baby although everything is done to prevent this. The most severe symptoms tend to last 2 to 12 weeks, but it can take up to 12 months or more to recover from the condition. With treatment, most women with postpartum psychosis make a full recovery. There is a risk of developing symptoms again in a subsequent pregnancy, but a care plan is usually put in place before the birth, with medication if necessary. Some women opt to have no further children rather than risk a recurrence.

An episode of postpartum psychosis is sometimes followed by a period of depression, anxiety and low confidence but support from the CPN team will continue as needed.

If you decide to embark on a subsequent pregnancy, you will be treated with ongoing care and probably medication compatible with pregnancy and breastfeeding.

Research

Rodriguez-Cabezas L, Clark C. Psychiatric Emergencies in Pregnancy and Postpartum. Clin Obstet Gynecol. 2018 Sep;61(3):615-627. doi: 10.1097/GRF.0000000000000377. PMID: 29794819; PMCID: PMC6143388.http s://pmc.ncbi.nlm.nih.gov/articles/PMC6143388/

Jones, Ellie et al. Prevalence and incidence of moderate and severe mental illness in the second postpartum year in England (1995–2020): a national retrospective cohort study using primary care data. The Lancet Regional Health – Europe, Volume 53, 101312 https://www.thelancet.com/journals/lanepe/article/PIIS2666-7762(25)00104-8/fulltext

VanderKruik R, Barreix M, Chou D, Allen T, Say L, Cohen LS; Maternal Morbidity Working Group. The global prevalence of postpartum psychosis: a systematic review. BMC Psychiatry. 2017 Jul 28;17(1):272. doi: 10.1186/s12888-017-1427-7. PMID: 28754094; PMCID: PMC5534064.https://pmc.ncbi.nlm.nih.gov/articles/PMC5534064/

Treatment in pregnancy

For information on drugs in pregnancy see https://www.medicinesinpregnancy.org/ if you are in the UK or https://mothertobaby.org/about-otis/ to find support in your own country.

Recommendations

Mothers who develop post-partum psychosis will be admitted to a mother and baby unit (if a place is available) or a general psychiatric ward. Some mothers have to travel long distances away from home for a place in a mother and baby unit in order not to be separated from their baby (Sit 2002).

NICE CG192 recommends that professionals:

"Discuss breastfeeding with all women who may need to take psychotropic medication in pregnancy or in the postnatal period. Explain to them the benefits of breastfeeding, the potential risks associated with taking psychotropic medication when breastfeeding and with stopping some medications in order to breastfeed. Discuss treatment options that will enable a woman to breastfeed if she wishes and support women who choose not to breastfeed"

Treatment

Looking at the pharmacokinetics as well as studies, we prefer drugs with:

Half-life < 24 hours. After 5 half-lives the drug is gone from maternal system and breastmilk,

Plasma protein binding > 90% as less available to pass into milk,

Oral bioavailability as low as possible as this restricts absorption from breastmilk. Relative infant dose < 10%

For more detailed explanation see https://www.youtube.com/watch?v=tS4wkZ2UNUs&t=22s

Free sources of information on breastfeeding and medication

https://e-lactancia.org/

https://www.ncbi.nlm.nih.gov/books/NBK547437/

https://breastfeeding-and-medication.co.uk/

https://www.breastfeedingnetwork.org.uk/drugs-factsheets/

Paid access Hale and Krutsch Medications and Mothers Milk – available as online access or as a book.

Treatment options

Antidepressants –https://breastfeeding-and-medication.co.uk/fact-sheet/depression-and-breastfeeding-2 all compatible with breastfeeding

SSRI drugs (sertraline, citalopram, paroxetine. Fluoxetine),

Tri-cyclic antidepressants (amitriptyline, imipramine, lofepramine, dosulepin/ dothiepin, trazadone): caution with co-sleeping.

AVOID Doxepin: 2 cases of adverse effects possibly due to accumulation of metabolite in new-born.

SNRI: venlafaxine and duloxetine are compatible with breastfeeding

venlafaxine: Withdrawal after delivery if taken in pregnancy is likely. Observe for jitteriness, respiratory distress, cyanosis, apnoea, seizures, temperature instability which may represent discontinuation syndrome.

Venlafaxine is 27% plasma protein bound and its metabolite 30%. The dose transferred to the infant is relatively high and although no adverse reports have been reported it may be wise to use this drug with caution. However, as it has a high rate of discontinuation problems, stopping the drug should be regarded as unlikely and breastfeeding monitored and not a contraindication.

De Moor et al. (2003) reported withdrawal symptoms in a baby delivered to a mother who had taken venlafaxine throughout pregnancy. The symptoms were restlessness, hypertonia, jitteriness, irritability and poor feeding. Administration of a 1 mg dose directly to the child temporarily reduced symptoms which resolved spontaneously after 8 days. Ilett et al. (2002) studied three mothers and babies and estimated that the mean total infant dose of venlafaxine was 7.6% (range 4.7–9.2%) of the maternal weight-adjusted dose. No adverse effects were noted. He further studied seven mothers and babies with a mean child age of 7 months whose mothers were taking 225–300 mg venlafaxine per day. Venlafaxine was detected in the plasma of one out of seven infants studied and the metabolite in four. The concentrations of venlafaxine and the metabolite O-desmethyl venlafaxine in breastmilk were 2.5 and 2.7 times those in maternal plasma. Ilett et al. reported the mean total drug exposure of the breastfed infants was 6.4% (5.5–7.3%). There were no adverse effects in any of the infants and the authors suggested that the data support the use of venlafaxine in breastfeeding.

In some hospitals babies exposed to venlafaxine in pregnancy are monitored carefully in the first few days after delivery. It may be beneficial for the mother to be taught hand expression before delivery in order that she can stimulate her supply and ensure her baby receives breastmilk via a syringe / cup if breastfeeding is difficult.

https://e-lactancia.org/breastfeeding/venlafaxine-hydrochloride/product/ Half-life 5 hours, Plasma Protein Binding 27-30%, Relative infant dose quoted as 5.5%

- de Moor RA, Mourad L, ter Haar J, Egberts AC, Withdrawal symptoms in a neonate following exposure to venlafaxine during pregnancy, Ned Tijdschr Geneeskd, 2003;147:1370–72.
- Ilett KF, Kristensen JH, Hackett LP, Paech M, Kohan R, Rampono J, Distribution of venlafaxine and its O-desmethyl metabolite in human milk and their effects in breastfed infants, Br J Clin Pharmacol, 2002;53(1):17–22.

duloxetine: There is little published information is available, but serum levels were low. Observe for drowsiness and effective feeding. It is a selective serotonin and norepinephrine reuptake inhibitor antidepressant (SNRI) used for depression and neuropathic pain. https://e-lactancia.org/breastfeeding/duloxetine/product/ It has a plasma protein binding >90%, oral bioavailability >70%, and relative infant dose 0.1-1.1% Lobo studied 6 women

taking 40mg twice daily. She measured an average transfer estimated to be 7 µg/day with no adverse effects noted.

- Lobo ED, Loghin C, Knadler MP, Quinlan T, Zhang L, Chappell J, Lucas R, Bergstrom RF. Pharmacokinetics of duloxetine in breast milk and plasma of healthy postpartum women. Clin Pharmacokinet. 2008;47(2):103-9. doi: 10.2165/00003088-200847020-00003. PMID: 18193916.

Antipsychotics

Amisulpiride: Excretion into breastmilk is higher than with other similar drugs but no problems have been observed in infants of mothers treated with amisulpride. See https://e-lactancia.org/breastfeeding/amisulpride/product/ Half-life 12 hours, plasma protein binding 25-30%, oral bioavailability 48%. Relative infant dose 1.8 - 10.7%. Amisulpiride has fewer side effects than the typical anti-psychotics, but agitation and insomnia are reported. It is 16% plasma protein bound and 48% orally bioavailable. It also increases prolactin and may lead to galactorrhoea (Teoh et al. 2010).

There is limited information on transfer into breastmilk. Ilett et al. (2010) studied one mother who was keen to undertake partial breastfeeding on 250 mg desvenlafaxine daily and 100 mg amisulpride twice daily. Measurements on levels in milk and the plasma of mother and baby over a 24-hour period, gave a relative infant dose of 6.1% for amisulpride. No abnormalities in development were noted in a paediatric assessment and the mother planned to continue partial breastfeeding.

The same team studied one mother prescribed 400 mg amisulpride while breastfeeding her 13-month-old child. Nine days after commencing the medication milk and maternal blood samples were taken over a 24-hour period. A relative infant dose of 10.7% was calculated based on an assumed intake of 0.15 L per kilogramme per day. The child showed no acute drug related adverse effects, but the authors recommended cessation.

- Ilett KF, Watt F, Hackett LP, Kohan R, Teoh S, Assessment of infant dose through milk in a lactating woman taking amisulpride and desvenlafaxine for treatment-resistant depression, Ther Drug Monit, 2010;32(6):704–7.
- Teoh S, Ilett KF, Hackett LP, Koha R, Estimation of rac-amisulpride transfer into milk and of infant dose via milk during its use in a lactating woman with bipolar disorder and schizophrenia, Breastfeed Med, 2011;6(2):85–8.

Aripiprazole: Limited information that low levels in milk but seems to be associated with prolactin inhibition and difficult to achieve full milk supply. See https://e-lactancia.org/breastfeeding/aripiprazole/product/. Half-life 75-95 hours, plasma protein binding 99%, oral bioavailability 87%. Relative infant dose 0.7 - 4.8%. Aripiprazole is 87% orally bio-available and 99% plasma protein bound. The mean elimination half-life of the drug and metabolites is up to 95 hours and may be extended. The incidence of extra-pyramidal effects is low, and tardive dyskinesia has been reported infrequently.

In a case study of one mother 6 months post-partum taking aripiprazole 15 mg daily, milk levels after 11 and 12 days of therapy were found to be 13 and 14 µg per litre by Schlotterbeck (Schlotterbeck et al. 2007). Two cases of galactorrhoea apparently caused by aripiprazole have been reported

(Mendhekar and Andrade 2005; Ruffatti et al. 2005) while Mendhekar et al. (2006) reported one woman who took it in pregnancy was unable to establish lactation. Nordeng (2016) also reported the case of a mother who took 10mg aripiprazole throughout most of her pregnancy. At 6 weeks formula supplementation was introduced due to poor milk supply although breastfeeding continued until at least 4 months of age and was found to have normal psychomotor and behavioural development and had reached all milestones for age. The authors attributed the deficient supply to low prolactin levels.

- Mendhekar DN, Sunder KR, Andrade C, Aripiprazole use in a pregnant schizoaffective woman, Bipolar Disord, 2006;8:299–300.
- Mendhekar DN, Andrade C, Galactorrhea with aripiprazole, Can J Psychiatry, 2005;50:243. Letter.
- Nordeng H, Gjerdalen G. BRede WR, Michelsen LS, Spigset O. Transfer of aripiprazole to breast milk: a case report. J Clin Psychopharamcology 2014;34(2):272-75.
- Ruffatti A, Minervini L, Romano M, Sonino N, Galactorrhea with aripiprazole, Psychother Psychosom, 2005;74:391–2.
- Schlotterbeck P, Leube D, Kircher T, Hiemke C, Grunder G, Aripiprazole in human milk, Int J Neuropsychopharmacol, 2007;10:433.

Chlorpromazine: detectable in the milk of some mothers, but levels appear not to correlate well with the maternal dose or serum level. May increase milk supply. Monitor for drowsiness and effective feeding. Be aware of the risk of engorgement/mastitis. See https://e-lactancia.org/breastfeeding/chlorpromazine/product/.

Chlorpromazine has a long half-life (30 hours with additional metabolites with further long half-lives) and is particularly sedating. Chlorpromazine is about 95 to 98% bound to plasma proteins and undergoes considerable first-pass metabolism to some active metabolites. It has a Relative infant dose 0.05 – 0.2%

Reports of drowsiness in breastfed infants appear to be restricted to high maternal doses. It is a member of the phenothiazines which have been linked with apnoea and increased risk of SIDS although no reports of infant deaths have been published It is given directly to children for a variety of reasons. It is associated with extra-pyramidal side effects in the mother and galactorrhoea. It has in the past been recommended to increase breastmilk supply but is rarely used for this purpose because of the side-effect profile (Zuppa et al. 2010).

Ayd (1964) studied six mothers and babies and identified no discernible effects in the babies who were breastfed from birth and studied for up to 3 months. Wiles et al. (1978) studied four babies, two of whom were breastfed. One of the breastfed babies showed signs of lethargy and measurable serum levels of 92 ng per millilitre chlorpromazine while the other had lower levels of drug (7 ng per millilitre) in the serum and suffered no adverse effects. Relative infant dose quoted as 0.3% (Hale 2017 online access).

Observe baby for drowsiness. Avoid falling asleep with the baby in bed, on a settee or chair. Mother may have excessive milk supply due to antidopaminergic effect.

- Ayd FJ, Children born of mothers treated with chlorpromazine during pregnancy, Clin Med, 1964;71:1758–63.
- Wiles DH, Orr MW, Kolakowska T, Chlorpromazine levels in plasma and milk of nursing mothers, Br J Clin Pharmacol, 1978;5:272–3.
- Zuppa AA, Sindico P, Orchi C, Carducci C, Cardiello V, Romagnoli C, Safety and efficacy of galactogogues: substances that induce, maintain and increase breastmilk production, J Pharm Pharm Sci, 2010;13(2):162–74.

Clozapine: relatively high concentrations in milk, one published report of a baby experiencing drowsiness and one who developed agranulocytosis possibly due to the drug exposure. Extra-pyramidal disorders, including tardive dyskinesia, appear to be rare with clozapine and it has little effect on prolactin secretion. It is known to produce sedation and weight gain and there are reports of neutropenia which may progress to a potentially fatal agranulocytosis. Clozapine appears to be distributed into breastmilk in relatively high concentrations. Barnas et al. (1994) studied one mother taking 50 mg daily who did not breastfeed her baby. Her milk level was measured as 63.5 µg per litre. Dev and Krupp (1995) studied four babies who were breastfed by their mothers who were taking clozapine. He reported one baby experiencing drowsiness and one who developed agranulocytosis possibly due to the drug exposure.

Monitoring of the baby's white blood cell counts is seen to be advisable if breastfeeding is undertaken. other drugs are preferable. The risks of drug exposure through breastmilk should be carefully borne in mind. https://e-lactancia.org/breastfeeding/clozapine/product/ z\ Half-life 8-12 hours, plasma protein binding 95%, relative infant dose quoted as 1.4%

Avoid and use alternatives, if possible, particularly in immediate post-partum period as may concentrate in colostrum. If using, it is essential monitor baby for sedation and agranulocytosis. Use with extreme care.

- Barnas C, Bergant A, Hummer M, Saria A, Fleischhacker WW, Clozapine concentrations in maternal and fetal plasma, amniotic fluid, and breastmilk, Am J Psychiatry, 1994;151:945 Dev VJ, Krupp P, Adverse event profile and safety of clozapine, Rev Contemp Pharmacother, 1995;6:197–208.
- Dev, V. & Krupp, P. (1995) Adverse event profile and safety of clozapine. Reviews in Contemporary Pharmacotherapy, 6, 197–208

Flupentixol: Limited information indicates that doses < 4 mg daily or depot injection 40 mg every 2 weeks produce low levels in milk and infants' serum. Monitor for drowsiness and effective feeding.

Haloperidol - Limited information indicates that maternal doses of haloperidol up to 10 mg daily produce low levels in milk and usually do not affect the breastfed infant. Haloperidol has been reported to have a plasma elimination half-life ranging from about 12 to 38 hours after oral doses. It is 92% bound to plasma proteins. It undergoes first-pass metabolism. Like chlorpromazine it is also said to increase prolactin levels. There are concerns of decline in developmental scores and extra-pyramidal effects in babies exposed through their mother's milk. Haloperidol is associated with less sedation than chlorpromazine in patients. A study of one woman, taking 5 mg twice daily, was

undertaken by Whalley et al. (1981). After 4 weeks the infant was feeding well and showing no signs of sedation and on day 21 of therapy, the mother's milk level was 4 µg per litre. The baby was breastfed for 6 weeks and monitoring up to 12 months of age showed all developmental milestones had been reached.

Stewart et al. (1980) studied one woman given a mean dose of slightly less than 30 mg haloperidol for 6 days. The milk levels were reported to be 5 ng per millilitre. At a dose of 12 mg, a sample taken 9 hours after the medication was taken was 2 ng per millilitre. Licensed product information (company information) reports that there have been isolated cases of extra-pyramidal effects in breastfed infants. Yoshida et al. (1997) prospectively studied 12 women who breastfed. He reported some concerns on babies exposed to combinations of anti-psychotics or high doses of single agents failing to reach developmental milestones. Relative infant dose quoted as 2.1–12% (Hale 2017 online access).

Observe baby for drowsiness. Avoid falling asleep with the baby in bed, on a settee or chair.

- Stewart RB, Karas B, Springer PK, Haloperidol excretion in human milk, Am J Psychiatry, 1980;137:849–50.
- Whalley LJ, Blain PG, Prime JK, Haloperidol secreted in breastmilk, Br Med J (Clin Res Ed), 1981;282(6278):1746–1747.
- Yoshida K, Smith B, Craggs M, Kumar RC, Investigation of pharmacokinetics and possible adverse effects in infants exposed to tricyclic anti-depressants in breastmilk, J Affective Disord, 1997;43:225–37.

Olanzapine: doses < 20 mg daily produce low levels in milk and undetectable levels in the serum of breastfed infants. Monitor for drowsiness and effective feeding. The most frequent adverse effects in adults with olanzapine are somnolence and weight gain. Hyper-prolactinaemia occurs but rarely presents clinical symptoms.

Olanzapine is associated with a low incidence of extra-pyramidal effects. Gardiner et al. (2003) studied seven women taking a median dose of 7.5 mg olanzapine. The drug was not detectable in the serum of six infants, and no adverse events were noted in any of the infants.

Goldstein et al. (2000) reported on two babies whose mothers were taking olanzapine. One developed jaundice and sedation in the immediate post-natal period but it may be assumed that this was not related to the drug as the condition continued when breastfeeding was stopped and formula offered. The second child was first exposed at 2 months of age when its mother took 10 mg daily. No untoward effects were noted. Croke et al. (2002) studied five mothers and their babies and took nine milk samples. There were no apparent ill effects in the infants.

Gilad conducted a prospective, controlled observational study of 22 mothers versus 15 controls exposed to another drug. The rate of adverse outcomes in olanzapine-exposed breastfed infants did not differ from those of the control groups to the age of 1-2 years.

Theoretical infant dose through breastmilk is quoted as 1.12 µg per kilogramme per day with a relative infant dose quoted as 1.2% (Hale 2017 online access).

Probably compatible with use during breastfeeding, based on studies and low theoretical infant dose. Be aware of possibility of drowsiness in the baby. Mother should not fall asleep with the baby in bed, on a settee or chair.

- Croke S, Buist A, Hackett LP, Ilett KF, Norman TR, Burrows GD, Olanzapine excretion in human breastmilk: estimation of infant exposure, Int J Neuropsychopharmacol, 2002;5(3):243–47.
- Gardiner SJ, Kristensen JH, Begg EJ, Hackett LP, Wilson DA, Ilett KF, Kohan R, Rampono J, Transfer of olanzapine into breastmilk, calculation of infant drug dose, and effect on breastfed infants, Am J Psychiatry, 2003;160:1428–31.
- Gilad O, Merlob P, Stahl B, Klinger G. Outcome of infants exposed to olanzapine during breastfeeding. Breastfeed Med. 2011; 6:55-8.
- Goldstein DJ, Corbin LA, Fung MC, Olanzapine-exposed pregnancies and lactation: early experience, J Clin Psychopharmacol, 2000;20:399–403.

Quetiapine: doses < 400 mg daily produce low levels in milk. Monitor for drowsiness and effective feeding. Quetiapine has been associated with a low incidence of extra-pyramidal symptoms, but tardive dyskinesia may occur after long-term treatment. The most frequent adverse effects with quetiapine are somnolence and dizziness. Weight gain, particularly during early treatment, has also been noted. It appears to have a minimal effect on prolactin levels. It is 98% plasma protein bound. The half-life is 6 to 7 hours. https://e-lactancia.org/breastfeeding/quetiapine-fumarate/product/

Lee et al. (2004) studied one mother taking 200 mg daily throughout pregnancy. Breastfeeding was not initiated in the absence of safety data until measurement of her breastmilk samples were available. Levels measured indicated that an exclusively breastfed baby would normally ingest only 0.09% of the weight adjusted dose (maximum 0.43%). The mother-initiated breastfeeding 8 weeks after delivery. Follow up at 4.5 months indicated normal development with no adverse effects.

Misri et al. (2006) studied six mothers taking 25 to 400 mg daily together with an antidepressant. In mothers taking less than 75 mg, milk levels were below the level of detection. One mother taking 400 mg daily had a level of drug in her milk of 101 µg per litre. Mental and psychomotor tests were below the norm in two of the infants when monitored up to 18 months of age although within the norm. The authors concluded this result was due to effects other than exposure to the drug.

Several other case study reports of quetiapine use have been reported with low levels of drug reported in the babies and no adverse reactions directly attributable to the drug identified (Rampono et al. 2007; Kruninger et al. 2007; Balke 2001; Seppala 2004; Ritz 2005; Gentile 2006). A relative infant dose quoted as 0.070.1% is quoted (Hale 2017 online access).

Be aware of possibility of drowsiness in the baby. Mother should not fall asleep with the baby in bed, on a settee or chair.

- Balke LD, Quetiapine effective in the treatment of bipolar affective disorder during pregnancy, World J Biol Psychiatry, 2001;2:303S. Abstract P02115.
- Gentile S, Quetiapine-fluvoxamine combination during pregnancy and while breastfeeding, Arch Womens Ment Health, 2006;9:158–9.

November 2025 The *information on this sheet is based upon my professional experience as a pharmacist with a specialised interest in the safety of drugs in breastmilk, supported by evidence from expert sources. However, I cannot take responsibility for the prescription of medication which remains with the healthcare professionals involved. I am happy to discuss the evidence by email wendy@breastfeeding-and-medication.co.uk*

- Kruninger U, Meltzer V, Hiemke C et al. [Pregnancy and lactation under treatment with quetiapin], Psychiatr Prax Suppl, 2007;34: S756.
- Lee A, Giesbrecht E, Dunn E, Ito S, Excretion of Quetiapine in breastmilk, Am J Psychiatry, 2004;161:17156.
- Misri S, Corral M, Wardrop AA, Kendrick K. Quetiapine augmentation in lactation: a series of case reports. J Clin Psychopharmacol. 2006; 26:508-11.
- Rampono J, Kristensen JH, Ilett KF, Hackett LP, Kohan R, Quetiapine and breastfeeding, Ann Pharmacother, 2007;41:7114.
- Ritz S, Quetiapine monotherapy in post-partum onset bipolar disorder with a mixed affective state, Eur Neuropsychopharmacol, 2005;15 (Suppl. 3):S407. Abstract.
- Seppala J, Quetiapine ('Seroquel') is effective and well tolerated in the treatment of psychotic depression during breastfeeding, Int J Neuropsychopharmacol, 2004;7 (Suppl. 1):S245. Abstract P01.431.

Risperidone: Limited published information doses < 6 mg daily produce low levels in milk and no observed adverse effects in the babies. Monitor for drowsiness and effective feeding. Risperidone is reported to be less likely to cause sedation or extra-pyramidal effects in the mother but more likely to produce agitation than typical anti-psychotics. Risperidone has been reported to cause raised prolactin levels, gynecomastia and galactorrhoea in patients. Hill et al. (2000) studied one mother who took 6 mg of risperidone with low levels transferred equivalent to 4.3% of the weight adjusted maternal dose. Ilett et al. (2004) studied three women taking 1.5 mg, 3 mg and 4 mg and reported weight adjusted percentages of 2.3%, 2.8%, and 4.7%. No adverse events were noted in any of the babies and no drug was detected in the plasma of the two babies who were breastfed. Aichhorn et al. (2005) studied one baby whose mother was taking 3 mg risperidone, over a 3-month period with no adverse effects noted. Relative infant dose quoted as 2.89.1% (Hale 2017 online access).

Be aware of possibility of drowsiness in the baby. Mother should not fall asleep with the baby in bed, on a settee or chair.

- Aichhorn W, Stuppaeck C, Whitworth AB, Risperidone and breastfeeding, J Psychopharmacol, 2005;19:21113.
- Hill RC, McIvor RJ, Wojnar-Horton RE, Hackett LP, Ilett KF, Risperidone distribution and excretion into human milk: case report and estimated infant exposure during breastfeeding, J Clin Psychopharmacol, 2000;20:285–6.
- Ilett KF, Hackett LP, Kristensen JH, Vaddadi KS, Gardiner SJ, Begg EJ, Transfer of risperidone and 9-hydroxyrisperidone into human milk, Ann Pharmacother, 2004;38:273–6.

Sulpiride: excreted into breastmilk in large amounts, > RID 10%. May increase milk supply but may precipitate depression. Sulpiride is 40% bound to plasma proteins and is poorly bioavailable. It is a selective dopamine antagonist and is said to elevate mood. It has been used to increase breastmilk production (Aono et al. 1982; Zuppa et al. 2010) but most studies have been poorly designed with supplements and drop-out rates making it difficult to interpret the results (Ylikorkala et al. 1982; Ylikorkala et al. 1984; Polatti 1982; Barguno et al. 1988).

It has been suggested that sulpiride is less likely to cause tardive dyskinesia than chlorpromazine, but extra-pyramidal side effects are reported. It can produce agitation. Adverse effects in breastfed babies have not been reported (Polatti 1984). Theoretical infant dose through breastmilk is quoted as 0.29 mg per kilogramme per day with a relative infant dose quoted as 2.7–20.7% (Hale 2017 online access). Although the relative infant dose is higher than the 10% level normally agreed as considered compatible with breastfeeding, the poor bioavailability limits the absolute amount absorbed by the baby and hence the low theoretical infant dose.

The BNF reports that there is limited information available on the short- and long-term effects of anti-psychotics drugs on the breastfed infant. Animal studies indicate possible adverse effects of anti-psychotics medicines on the developing nervous system. Chronic treatment with anti-psychotics drugs while breastfeeding should be avoided unless necessary.

Although it has been used as a galactagogue in developing countries, its use cannot be recommended when there are safer alternatives.

Observe baby for drowsiness. Avoid falling asleep with the baby in bed, on settee or chair. Mother may have excessive milk supply.

- Aono T, Aki T, Koike K, Kurachi K, Effect of sulpiride on poor puerperal lactation, Am J Obstet Gynecol, 1982;143:927–32.
- Barguno JM, del Pozo E, Cruz M, Figueras J, Failure of maintained hyper prolactinemia to improve lactational performance in late puerperium, J Clin Endocrinol Metab, 1988;66:876–9.
- Polatti F, Brambilla A, Mandelli, Forgione A, Can pharmacologic hyper prolactinemia and breastsuction induce lactation in women with normal menstrual cycles? Clin Exp Obstet Gynecol, 1984;11:123–5.
- Polatti F, Sulpiride isomers and milk secretion in puerperium, Clin Exp Obstet Gynecol, 1982;9:144–7.
- Ylikorkala O, Kauppila A, Kivinen S, Viinikka L, Sulpiride improves inadequate lactation, Br Med J (Clin Res Ed), 1982;285(6337):249–251.
- Ylikorkala O, Kauppila A, Kivinen S, Viinikka L, Treatment of inadequate lactation with oral sulpiride and buccal oxytocin, Obstet Gynecol, 1984;63(1):57–60.
- Zuppa AA, Sindico P, Orchi C, Carducci C, Cardiello V, Romagnoli C, Safety and efficacy of galactogogues: substances that induce, maintain and increase breastmilk production, J Pharm Pharm Sci, 2010;13(2):162–74.

Zuclopenthixol: Limited information indicates that oral doses < 50 mg daily or depot injections of 72 mg every 2 weeks produce low levels in breastmilk and no detectable short-term adverse effects in the breastfed infants. No long-term data are available. Avoid if possible.

Further information

MIND have an excellent resource which may help families understand what is going on. www.mind.org.uk/information-support/types-of-mental-health-problemultiple sclerosis/postnatal-depression-and-perinatal-mental-health/postpartum-psychosis/

•Action on Postpartum Psychosis (APP) and APP forum https://healthunlocked.com/app-network

•Association for Post Natal Illness https://apni.org/

•Mind: what is postpartum psychosis? https://www.mind.org.uk/information-support/types-of-mental-health-problems/postnatal-depression-and-perinatal-mental-health/postpartum-psychosis/#treatments

•PANDAS Foundation UK http://www.pandasfoundation.org.uk/

•Royal College of Psychiatrists: postpartum psychosis https://www.rcpsych.ac.uk/mental-health/problems-disorders/postpartum-psychosis