Canterbury District Health Board
Te Poari Hauora ō Waitaha

Clinical Pharmacology Bulletin

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Antidepressants and Breastfeeding

Parental perception of the risk associated with breastfeeding during maternal drug use may lead to non–compliance with drug therapy or unnecessary cessation of breastfeeding. Given the prevalence of post-natal depression, and the benefits of breastfeeding for the baby (and mother), it is essential to have access to accurate and useful data when making decisions around antidepressant use during breastfeeding.

Infant exposure to antidepressants via breast milk
All antidepressants transfer into breast milk to some extent. The risk to the breastfeeding infant depends on the:

- 'dose' of drug ingested in milk
- drug's oral availability
- infant's capacity for drug clearance
- toxicity of the drug

The 'dose' of drug ingested via milk is dependent on the concentration of the drug in milk and the volume of milk ingested i.e. dose = concentration x volume. The infant's dose in milk can be put into perspective by comparing it with the maternal dose corrected for respective body weight. This is called the 'weight-adjusted maternal dose' (WAMD) or sometimes the 'relative infant dose':

$$\text{WAMD} = \frac{\text{infant dose in milk (mg/kg/day)}}{\text{maternal dose (mg/kg/day)}} \times 100\ (\%)$$

If the WAMD is <10% of the maternal dose, the drug is likely to be 'safe' in breastfeeding assuming that the mother is taking usual therapeutic doses, and that the infant is born at term and is healthy. However, a WAMD < 10% may be unsafe if: the baby is very young/premature; the mother's dose is very high or she is on multiple drugs with similar effects (and therefore adverse reactions), especially central nervous system drugs, or the drug is highly toxic (not a major concern with antidepressants currently available in New Zealand, see Table below).

The drug's oral availability (F) determines the total amount of drug absorbed by the infant after ingestion via milk.

The infant's capacity for drug clearance is a major determinant of the plasma drug concentrations. Infants have reduced ability to eliminate drugs compared with adults until they are about six months old because of immature kidneys and livers. Special care should be taken in premature neonates.

Key prescribing points in breastfeeding women:

- avoid all non-essential drug therapy e.g. consider cognitive behavioural therapy for depression
- select drugs with the most safety data in humans
- feed infant just prior to mother's drug dose (milk concentrations are related to blood concentrations)
- use antidepressants at the lowest effective dose
- if a drug is taken during pregnancy, in utero exposure is much greater than exposure via breastmilk
- monitor infant for adverse effects (see Table below) but recognise that these may be hard to detect

What data are available to help you?
Contact your clinical pharmacist or Drug Information (ext. 80900) with specific questions about drug use during breastfeeding. Other 2012 bulletins that may be useful are 'Antidepressants in pregnancy' and 'Neonatal outcomes after antidepressant use in the third trimester of pregnancy'.

Licenced Antidepressants available in New Zealand

Antidepressant	WAMD (%)	n	t½ (h)	F	Class and Monitoring	Funded
citalopram	up to 9	≥6 AUC	~ 36	0.8	Selective serotonin re-uptake inhibitor (SSRI): monitor for respiratory distress, tachypnoea, hypoglycaemia, temperature instability, irritability, a weak or absent cry and seizures.	Yes
escitalopram	up to 8	≥6 AUC	~ 30	0.8		Yes
fluoxetine	up to 14 #	≥6 AUC	~ 60 *	0.9		Yes
paroxetine	up to 3	≥6 AUC	~ 21	0.5		Yes
sertraline	up to 3	≥6 AUC	~ 26	0.5		Yes
venlafaxine	up to 9	≥6 AUC	~ 5 *	0.5	Serotonin-noradrenaline re-uptake inhibitor: as for SSRIs	SA
reboxetine	up to 2	4	~ 5	1.0	Noradrenaline re-uptake inhibitor: as for SSRIs	No
amitriptyline	up to 3	6	~ 38 *	0.5	Tricyclics: monitor for drowsiness, jitteriness, and hyperexcitability – rarely convulsions have been reported.	Yes
clomipramine	up to 3	5	~ 38	0.5		Yes
dothiepin	up to 3	≥6 AUC	~ 19	1.0		Yes
doxepin	up to 3	3	~ 16 *	0.5		Yes
imipramine	up to 5	7	~ 12 *	0.5		Yes
nortriptyline	up to 3	≥6 AUC	~ 24	0.6		Yes
maprotiline	up to 2	1	~ 42	0.8	Tetracyclic: as for tricyclics	Yes
mirtazapine	up to 3	≥6 AUC	~ 30	0.5	Noradrenergic-specific serotonergic: as for tricyclics	SA
moclobemide	up to 4	≥6 AUC	~ 2	1.0	Reversible monoamine oxidase inhibitor: as for SSRIs	Yes

Key: n = number of mother-infant pairs studied; AUC = area under the curve studies of milk and plasma; t½ = half life; F = oral availability (where this is variable, maximum provided); h = hours; SA = special authority; # = consider alternative drug due to high WAMD (unless need in pregnancy); * clinically relevant active metabolite; Note: ≥ 6 AUC = more than 6 mother-infant pairs with area under the curve data for milk and plasma is considered relatively good data. Note: Currently no data for mianserin, trimipramine, phenelzine and tranylcypromine.