



MISUSE OF DRUGS IN PREGNANCY AND BREASTFEEDING

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All information is intended for use by healthcare professionals and should be utilised in conjunction with pertinent clinical data.

This information deliberately provides little, if any, explanation or background to the conditions and treatment outlined. It is designed to acquaint the reader rapidly with the clinical problem and provide practical advice regarding assessment and management.

References:

- Micromedex
- Wills, S., **Drugs of Abuse**
- Department of Human Services, Victoria, **Clinical Guidelines: Buprenorphine Treatment of Heroin Dependence**

1. NARCOTICS

Use of narcotics in pregnancy is not associated with birth defects. Narcotics cross the placenta and can result in the fetus developing a tolerance to them. Infant withdrawal, Neonatal Abstinence Syndrome (NAS) may occur following delivery.

Pregnant women are advised not to withdraw from narcotics. Withdrawal increases the risk of miscarriage in early pregnancy, premature labour, fetal distress and death in-utero.

To prevent withdrawal symptoms in pregnancy, women may feel the need to increase narcotic thus compounding the problems associated with illicit drug use.

METHADONE USE IN PREGNANCY

In pregnancy, methadone substitution for heroin, or other opiates, is the safest means of ensuring a healthy outcome for the mother and baby. As methadone is a narcotic, it can be given as an opiate substitute to prevent narcotic withdrawal. It has a duration of action of 24 hours and can therefore be given once a day. Pharmacotherapy management of addiction is based on the principles of harm minimization. Methadone treatment in pregnancy:

- Prevents withdrawal symptoms from opiates
- Promotes psychosocial and lifestyle stability
- Is associated with a reduction in drug related crime
- Decreases the risk of contracting blood borne viruses: Hepatitis B and C, and HIV
- Creates a stable environment for fetal growth and survival
- Results in less premature births
- Encourages regular attendance for antenatal care and counselling

Women should be advised to commence on methadone as soon as pregnancy is confirmed.

Methadone stabilization in pregnancy is recommended as an inpatient procedure over 5 days.

During this time, group sessions, drug and alcohol counselling and obstetric and midwifery care are given.

As with other narcotics, as the pregnancy progresses, the methadone dose may need to be increased to prevent withdrawal. The reasons for this are:

- Increased volume of distribution.
- Increased liver metabolism.
- Increased glomerular filtration rate resulting in increased metabolite excretion.
- Increased narcotic metabolism by placenta and fetus.

METHADONE AND BREASTFEEDING

Breastfeeding is not generally discouraged as it provides the most suitable nutrition for the baby and other benefits, such as mother-baby bonding. Small amounts of methadone are transmitted to the baby in breast milk, but not usually in sufficient quantities to affect the baby clinically or to prevent a woman from breastfeeding.

Breastfeeding is contraindicated if the patient is acutely intoxicated with heroin or is HIV positive.

BUPRENORPHINE IN PREGNANCY

Buprenorphine is an alternative treatment to methadone, but is not currently recommended in pregnancy. Any patient seeking narcotic replacement treatment, who might become pregnant, should be counselled on the potential risks of buprenorphine during pregnancy. Women who conceive whilst on buprenorphine are advised to transfer to methadone maintenance. If, after a full explanation and consideration of the potential risks of ongoing treatment with buprenorphine, the woman decides to continue with the treatment, she will be required to give consent.

NEONATAL NARCOTIC WITHDRAWAL

Infant narcotic withdrawal, or Neonatal Abstinence Syndrome (NAS) can occur when an infant has been exposed to narcotics (including heroin, methadone and buprenorphine) during pregnancy. It is not possible to reliably predict before birth which babies may develop NAS. The incidence of NAS is not directly related to the type or amount of narcotic used. NAS is readily diagnosed and treated.

Many babies show some signs of NAS, but not all of these babies will require drug treatment. Non-drug treatment involves the use of supportive therapy such as cuddling and pacifiers, in a quiet environment with reduced stimulation. Many babies benefit from receiving additional formula feeds during the first few days of establishing breastfeeding.

Babies who have been exposed to narcotics in pregnancy are closely observed for signs of NAS. In Australia, a modified Finnegan scoring system is used to assess the level of withdrawal in newborn babies. Babies are assessed several times a day according to symptoms relating to sleeping, feeding, skin colour, muscle tone and cry.

This assessment continues for up to 7 days following birth. If, after 7 days of assessment, the infant is not showing significant signs of NAS, and there are not other health issues, the baby will be discharged from hospital. The mother is referred to her local MCHN and GP for ongoing support and care.

If the infant does show significant symptoms of NAS during this 7 day period, he will be transferred to a nursery for further assessment of the need for drug treatment to manage NAS. If drug treatment is required, it will commence using a low dose of oral morphine. The dose is usually given every 6 hours with a reduction in dose occurring every 3 days. During the treatment period, infants continue to be observed for signs of withdrawal. There may be variation in the treatment time according to the infant's progress. This gradual reduction of morphine takes approximately 4 weeks. Occasionally, alternative drug therapy is used where withdrawal from drugs other than narcotics may occur.

The administration of naloxone is contraindicated in neonates as it will cause a rapid and marked withdrawal.

2. VOLATILE SUBSTANCES AND PREGNANCY

Volatile substances (petrol, glue, aerosol cans, butane gas) cross the placenta and can affect the developing fetus. The most likely effects will be an early labour, a premature baby with associated breathing problems and the risk of infection.

VOLATILE SUBSTANCES AND BREAST FEEDING

Many solvents pass readily into breast milk. The neonate's nervous system continues to develop after birth, and nursing infants may be more sensitive than adults to the neurotoxic effects of solvents. Generally, most volatile substances have short half lives.

Breastfeeding should be avoided if the mother is intoxicated.

3. BENZODIAZEPINES AND PREGNANCY

Benzodiazepines are CNS depressants. Benzodiazepines cross the placenta and use during labour should be avoided.. Chronic use of benzodiazepines during pregnancy may result in neonatal withdrawal. Benzodiazepine use during pregnancy is not associated with birth defects, but they can cause 'floppy baby syndrome' which is a condition of reduced muscle tone, lethargy, sedation, decreased sucking and impaired temperature maintenance.

During pregnancy, the dose of benzodiazepines should be slowly reduced rather than abruptly ceased, as this may precipitate withdrawal symptoms which could have a detrimental effect on the fetus. To assist cessation of benzodiazepine use, an overall equivalent dosage of diazepam should be used and slowly decreased over a period of a few weeks. Diazepam is used as it has a relatively long half-life and is less psychoactive than some of the other benzodiazepines.

BENZODIAZEPINES AND BREASTFEEDING

The safety of breastfeeding whilst taking benzodiazepines is dependent on the drug and the quantity used. Shorter acting agents are preferable to those with long half lives.

4. AMPHETAMINES, PSEUDOEPHEDRINE, ECSTASY, ICE AND COCAINE IN PREGNANCY

There is no drug management option for stimulants such as amphetamines, methylamphetamines, cocaine or ecstasy. Patient counselling and support can assist patients cease or reduce their drug use.

Management of stimulant withdrawal is symptomatic. Symptoms of withdrawal from stimulants can take up to a week to manifest. Often, it is the psychotic manifestations that prompt users to seek treatment. Severe agitation and psychosis requires psychiatric assessment, and short courses of antipsychotics, such as haloperidol may be required.

Speed (amphetamine) is commonly sold as cocaine or ecstasy (MDMA), or in combination. The duration of action is the most reliable way to ascertain the difference between these drugs. The effects of cocaine wear off after half an hour compared to amphetamines which last for about six hours. Cocaine is considerably more expensive than amphetamines.

Using amphetamines and cocaine during pregnancy causes decreased blood flow to the placenta due to vasoconstriction resulting in:

- Fetal malnutrition and distress, hypoxia and intra uterine growth retardation (IUGR).
- Fetal hypoxia can stimulate the release of catecholamines which may cause cardiac hypertrophy and hyperplasia
- Substantial increase in arterial blood pressure and heart rate
- Cocaine-induced vasoconstriction can result in hypertension, which has been associated with an increased risk of placental abruption.

Chronic cocaine use during pregnancy appears to be more problematic than amphetamine use. Some of the reported problems include:

- Spontaneous abortion in the first trimester
- Premature labour
- Fetal distress
- Prematurity and IUGR
- Fetal abnormalities – gastrointestinal and limb defects, cardiovascular malformations and perinatal cerebral infarction.

AMPHETAMINES, COCAINE AND BREASTFEEDING

Amphetamines and pseudoephedrine concentrate in breast milk and may cause insomnia and irritability in the infant. The long-term effects are unknown.

Cocaine is also excreted in the breast milk and is absorbed orally by the infant. Potential adverse effects in the infant include vomiting, diarrhoea, irritability and seizures. The long-term effects are unknown.

AMPHETAMINES, COCAINE AND THE NEONATE

Cocaine use in pregnancy may cause a Neonatal Cocaine Abstinence Syndrome. This is characterised by frequent tremors, hypertonia, irritability, feeding and sleeping difficulties. It generally occurs within the first 24 hours after delivery and treatment with phenobarbitone is usually required for about 5-7 days.

There does not appear to be a significant increase in autonomic nervous system dysfunction or gastro intestinal tract system dysfunction. There does, however, appear to be an increase in the incidence of necrotising enterocolitis, cerebral infarcts and intracranial bleeding. Neonates withdrawing from amphetamines tend to be irritable.

13. ALCOHOL AND PREGNANCY

Alcohol crosses the placenta into the baby. It can cause problems such as miscarriage, premature birth and small babies due to slow growth in utero. There is a risk of birth defects resulting from heavy drinking during pregnancy (more than 6 standard drinks per day). This condition is known as Fetal Alcohol Syndrome. The risk of alcohol related birth defects correlates to the amount of alcohol consumed. Occasional binge drinking (>5 standard drinks) may be harmful to the fetus.

NH&MRC guidelines recommend that if a woman chooses to drink whilst pregnant, she should have less than 7 standard drinks, and on any one day, no more than 2 standard drinks spread over at least 2 hours.

Alcohol withdrawal during pregnancy is sometimes managed with diazepam. A dosage that appropriately controls withdrawal symptoms is given which is gradually reduced. Transient withdrawal symptoms such as tremors, lack of muscle tone and irritability have been observed among the newborn infants of women who drank heavily late in pregnancy.

The safety of some agents used in the treatment of alcohol dependence (eg. acamprosate) has not yet been established during pregnancy. Use of these agents is not recommended.

14. ALCOHOL AND BREASTFEEDING

Alcohol is freely excreted into breast milk. Women who are breastfeeding are advised not to exceed the levels of drinking recommended during pregnancy and may consider not drinking at all. Occasional, moderate use does not appear to be harmful. Alcohol may change milk taste and potentially decrease infant intake. Large consumption could inhibit milk supply. Impaired motor development has been reported following regular use. Allow 1-2 hours per standard drink before breastfeeding.

15. CANNABIS AND PREGNANCY

Cannabis (marijuana) is not associated with causing birth defects. The effects of cannabis on fetal maturation are much the same as for cigarette smokers. There is an increased incidence of IUGR due to a lowered capacity for the blood to transport oxygen.

It is difficult to assess the effects of cannabis in the neonate but suspected effects include neonatal irritability, feeding difficulties and an unsettled baby.

16. CANNABIS AND BREASTFEEDING

Cannabis is excreted in breast milk and its metabolite (Δ THC) accumulates due to its high fat solubility. It may remain in body fat stores for several weeks. Long term effects on infant development are unknown. It is also important to avoid smoking in the presence of the infant to reduce the risk of SIDS.