

## 5 INTRAPARTUM CARE

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5.19 Substance Use Management during Labour and Birth  
Section B  
Clinical Guidelines  
King Edward Memorial Hospital  
Perth Western Australia

### 5.19 SUBSTANCE USE MANAGEMENT DURING LABOUR AND BIRTH

#### AIMS

- Provide information for the woman and her support person about management of labour, birth and postpartum care.
- Provide information about the use of illicit drugs and alcohol use and opioid replacement treatments on pregnancy and to the fetus if no previous discussions.
- Identify medical, social, and psychological issues and implement a documented management plan if this has not been previously done.
- Provide adequate analgesia and anaesthesia during labour and birth.
- Liaise with the Women and Newborn Drug and Alcohol Service (WANDAS) if a woman presents with a history of substance misuse and has not been attending the WANDAS. This allows appropriate management to be initiated under guidance from the WANDAS team.

#### KEY POINTS

1. Notify the WANDAS team when any woman who is involved in illicit drugs/alcohol or on a treatment programme is admitted:
  - WANDAS Clinical Midwifery Consultant (CMC) – page 3425 (or 3544) / mobile 0420970703 during office hours or the following morning if a woman is admitted after hours.
  - Obstetric Registrar for WANDAS – page 3207 – who will contact the consultant
  - Social Work Department – extension 2777
  - Psychiatric Registrar – extension 1521
2. Women should be advised to come to hospital **early** in labour – this limits the woman's need to self-medicate at home during labour<sup>1</sup>
3. Management of a woman on an opioid treatment program:
  - See [Section P Clinical Guideline 4.1 Management of Community Programme for Opioid Pharmacotherapy patients in the hospital setting \(C-POP\)](#).
  - Prior to administering the dose a recent drug and alcohol history should be taken<sup>1</sup>.
4. An up-to-date written plan of management is documented in the woman's medical record on the MR004. Aim to have a formulated plan documented by 32 weeks gestation.
5. All women who have used illicit drugs/alcohol or have received opioid pharmacotherapy during their pregnancy should be advised as early as possible that their expected postnatal stay will be 5 days or more as required to allow assessment of NAS. See [Neonatal Clinical Guidelines Section 17 Neonatal Abstinence Syndrome](#).
6. Induction of labour should be booked where possible early in the week. This allows maximum accessibility with the WANDAS team.

## UNBOOKED WOMEN PRESENTING TO LABOUR AND BIRTH SUITE

1. Notify the WANDAS team – during normal office hours or the following morning if after hours.
2. Take a detailed substance use and psychosocial history. Document on the MR220.02 'Women and Newborn Drug and Alcohol Service Antenatal Checklist'.
3. Consider admitting any unbooked woman who has not regularly attended antepartum appointments if she presents to Labour and Birth Suite. This provides the WANDAS team an opportunity to assess the woman, organise antenatal tests, and implement a management plan for her pregnancy.
4. If an unbooked woman is admitted under the obstetric team of the day (and it is not the WANDAS team), the consultant should discuss transfer of care with the WANDAS Medical Consultant and the CMC who will decide on suitability of transfer of care. If not suitable to transfer care liaison with the WANDAS team will provide management advice.
5. The woman needs to agree to transfer her care. If she declines the neonate may only be discharged with paediatric consultant approval, social work involvement, and discussion with the WANDAS CMC.

## ANAESTHETIC IMPLICATIONS AND ASSESSMENT

**Note:** refer to the table at the end of this guideline for information on individual drug and alcohol effects and implications for intrapartum care.

### UNBOOKED WOMEN

Obtain a detailed history of substance use and consider **early** anaesthetic review if the woman has:

- potential intravenous access difficulties
- a medical or drug/alcohol history that warrants closer monitoring
- unstable or recent drug/alcohol use which poses anaesthesia or analgesia risks

### BOOKED WOMEN

Consider **early** anaesthetic consultation if the woman has:

- not been reviewed by an anaesthetist in the antenatal period
- potential intravenous access difficulties
- requires pain relief management.
- unstable or recent drug/alcohol use which poses anaesthesia or analgesia risks

### WOMEN WITH CHRONIC HEPATITIS C

Consider coagulation studies prior to regional analgesia if liver function tests have not been recently done. Thrombocytopenia and prolongation of prothrombin time are features of chronic hepatitis C<sup>2</sup>.

## MANAGEMENT FOR WOMEN PRESENTING WITH DRUG/ALCOHOL WITHDRAWAL OR RECENT DRUG/ALCOHOL USE

All women presenting with drug or alcohol withdrawal or recent use should be commenced on the appropriate documentation charts:

- Benzodiazepine Withdrawal Chart MR223.01
- Amphetamine Withdrawal Chart MR 223.02
- Alcohol Withdrawal Chart MR223.03
- Cannabis Withdrawal Chart MR223.04
- Opioid Withdrawal Chart MR223.05

## INDUCTION OF LABOUR

Induction of labour may occur for obstetric indications.<sup>1</sup> Social reasons for induction of labour may be indicated e.g. remoteness or transport issues<sup>1</sup>, and psychosocial reasons.

**Arrange induction of labour early in the week if possible** – this allows medical, midwifery and allied health services expertise to be available.<sup>1</sup>

## ELECTIVE CAESAREAN SECTION

### PAIN RELIEF

- Organise early anaesthetic review in labour to assess intravenous access, risk factors for anaesthetics, and requirement for regional analgesia.
- Offer all forms of pain relief, including non-pharmacological methods.<sup>1</sup>
- Analgesic requirements may be increased for women with a history of substance use.<sup>1</sup>
- Intractable pain should be investigated for pathological causes.<sup>1</sup>

### WOMEN ON A METHADONE PROGRAM

1. The dose of Methadone should be given on time and not be omitted.
2. Arrange for medical/anaesthetist review of analgesic requirements if the analgesia is ineffective. Pethidine and other opioids may be less effective due to opioid tolerance.<sup>1</sup>
3. Assess pain as a separate issue – Methadone will not relieve labour pain.<sup>1</sup>

### WOMEN ON A BUPRENORPHINE PROGRAM

1. The dose of Buprenorphine should be given on time and not be omitted.
2. Regional analgesia may be an appropriate option for pain relief.<sup>1</sup>
3. Arrange for review of requirement if the analgesia is ineffective. Pethidine and other opioids may be less effective due to opioid tolerance.<sup>1</sup>

## FETAL HEART RATE MONITORING IN LABOUR

**NOTE: continuous fetal heart rate monitoring is applied according to KEMH guidelines. However, if a women presents unbooked with a history of drug or alcohol use, has had current /recent drug or alcohol use, or presents with any risk factors for fetal wellbeing then continuous monitoring should be applied.**

Methadone treatment affects intrapartum fetal heart rate patterns by reducing variability, baseline, and proportion of accelerations.<sup>3,4</sup>

Avoid doing a non-urgent cardiotocograph (CTG) within one to two hours of a woman receiving her maintenance dose of Methadone – a reactive trace is unlikely to be achieved.<sup>5</sup>

If a woman is taking Methadone the CTG may be non reactive, therefore additional surveillance such as a biophysical profile may be beneficial.<sup>3</sup>

## MANAGEMENT OF MOTHER AND BABY AFTER BIRTH

1. Normal routine postpartum care. See [Clinical Guidelines, Section B, 6 Postpartum care.](#)
2. Ensure opioid replacement therapy is ordered and given at the normal time.
3. See [Clinical Guidelines Section B 6.3 Substance use management postpartum](#) for breastfeeding and specific postpartum care.
4. Commence the Neonatal Abstinence Syndrome (NAS) scoring chart, MR495, when the infant is two hours old to provide a baseline. Refer to [Neonatal Clinical Guidelines Section 17 Neonatal abstinence syndrome.](#)
5. Commence education of supportive measures the parent/s may use to assist with an infant experiencing NAS. See [Neonatal Clinical Guidelines Appendix B Section 17 Neonatal abstinence syndrome.](#)

## SUBSTANCES AND IMPLICATIONS DURING LABOUR AND BIRTH

| SUBSTANCE      | EFFECTS   | PRACTICE IMPLICATIONS   |
|----------------|---|---|
| <b>Alcohol</b> | <p>Chronic alcohol use may cause liver disease, poor nutrition, coagulopathy, pancreatitis, cardiomyopathy, oesophageal varices and altered drug metabolism.<sup>6</sup></p> <p>Acute withdrawal causes increased risk for nausea and vomiting, tachycardia, arrhythmias, hypertension, delirium, hallucinations, confusion, seizures, and cardiac failure.<sup>6</sup></p> <p>Heavy alcohol use, or binge drinking can lead to Fetal Alcohol Syndrome causing prenatal and postnatal growth restriction, central nervous system abnormalities (CNS), and craniofacial abnormalities.<sup>7</sup></p> | <ul style="list-style-type: none"> <li>• Commence an Alcohol Withdrawal Chart MR223.03</li> <li>• Liver function tests should be done if no recent blood results are available.</li> <li>• Prior to insertion of regional analgesia or anaesthesia ensure no coagulopathy, neuropathy, or infections.<sup>6</sup></li> <li>• There is increased risk of aspiration due to increased gastric acid secretions and decreased protective airway reflexes.<sup>6</sup> Provide airway protection if a woman presents with acute intoxication.<sup>8</sup> Arrange early anaesthetic assessment.</li> <li>• Consider the use of pharmacological prophylaxis if the woman is at risk for aspiration and nausea and vomiting.<sup>6</sup></li> <li>• Perform a blood sugar level with heavy alcohol use due to association with poor nutrition.<sup>8</sup></li> <li>• Continuously monitor the fetal heart rate if the mother presents intoxicated.</li> </ul> |

| SUBSTANCE                     | EFFECTS   | PRACTICE IMPLICATIONS  |
|-------------------------------|---|--|
| <p><b>Amphetamines</b></p>    | <p>Causes stimulation of the CNS.<sup>9</sup></p> <p>Possibility for increased risk of congenital malformations<sup>10</sup></p> <p>Cardiac anomalies, cleft lip and palate, biliary atresia, intrauterine growth retardation (IUGR), fetal death and cerebral haemorrhage have been noted.<sup>8</sup></p> <p>Acute ingestion can cause hypertension, tachycardia, arrhythmias, dilated pupils, hyperflexion, fever, proteinuria, agitation and confusion.<sup>6,8</sup></p> <p>Side-effects include hypertension, myocardial ischaemia, cardiac arrhythmias and stroke.<sup>6</sup></p> | <ul style="list-style-type: none"> <li>• Commence the Amphetamine Withdrawal Chart MR223.02</li> <li>• Psychedelic effects of 'ecstasy' may interfere with safe insertion of regional blocks.<sup>6</sup></li> <li>• May cause placental abruption and fetal distress<sup>6,8,9</sup>.</li> <li>• Associated with premature birth, decreased birth weight and head circumference<sup>10</sup></li> <li>• Seizures in presence of hypertension and proteinuria can be mistaken for eclampsia.<sup>6,8</sup></li> <li>• Thermoregulatory disturbances may occur following toxicity.<sup>6</sup> Arrange immediate medical examination and tests if toxicity is suspected e.g. liver and renal function, electrocardiogram, and possible X-rays. Women who have altered conscious levels should have blood sugar levels checked. Monitor fluid intake if dehydration is a risk.<sup>11</sup></li> <li>• Ketamine should be avoided due to the catecholamine-related effects e.g. hypertension and tachycardia<sup>1</sup>.</li> </ul> |
| <p><b>Benzodiazepines</b></p> | <p>Act on the CNS to produce sedative and hypnotic effects, reduction of anxiety, anticonvulsive effects, and skeletal muscle relaxant.<sup>12</sup></p> <p>Diffuses readily across the placenta to the fetus. Risk for fetal malformation is greatest between 2 to 8 weeks gestation.<sup>12</sup></p>   | <ul style="list-style-type: none"> <li>• Commence the Benzodiazepine Withdrawal Chart MR223.01.</li> </ul>   |

| SUBSTANCE                          | EFFECTS   | PRACTICE IMPLICATIONS  |
|------------------------------------|---|--|
| <b>Benzodiazepines (continued)</b> | <p>May be associated with teratogenic effects, intrauterine growth retardation and functional deficits<sup>13</sup>. There is conflicting findings from a number of studies.</p>  | <ul style="list-style-type: none"> <li>• If used at or near term may cause fetal dependence and neonatal withdrawal.<sup>12</sup> Neonatal withdrawal symptoms include mild sedation effects, hypertonia, reluctance to suck, apnoeic spells and impaired response to cold stress.<sup>6</sup></li> <li>• If a woman is withdrawing the anaesthetic requirements may need to be increased due to agitation and tachycardia.<sup>6</sup></li> <li>• Verify safety of individual types of benzodiazepines for use in pregnancy and breastfeeding.</li> <li>• If prescribed in pregnancy use only lowest possible dose for the shortest duration.<sup>12</sup></li> </ul> |
| <b>Cocaine</b>                     | <p>Produces prolonged adrenergic stimulation by blocking presynaptic uptake of sympathomimetic neurotransmitters including noradrenalin, serotonin and dopamine resulting in a euphoric effect.<sup>6, 9</sup></p> <p>Cardiac complications such as hypertension, hypotension, tachycardia, myocardial ischaemia and infarctions. Arrhythmias can occur even from a small dose.<sup>6, 14</sup></p> <p>Increased maternal risk for placental abruption, uterine rupture, preterm labour, hepatic rupture, cerebral infarction, and death. It can cause seizures, fevers, hyperflexia, dilated pupils, proteinuria and oedema.<sup>6</sup></p> | <ul style="list-style-type: none"> <li>• Pregnancy enhances cardiac sensitivity to cocaine.<sup>6</sup></li> <li>• Thrombocytopenia can occur.<sup>6, 14</sup> Regional analgesia and anaesthesia may be contraindicated. A full blood picture and clotting studies should be performed prior to insertion and the anaesthetist informed of the result.<sup>6</sup></li> <li>• Liver and renal function tests will make the distinction between cocaine use and pre-eclampsia or eclampsia.<sup>6</sup></li> <li>• It is recommended that blood pressure be controlled with medications prior to induction of labour or anaesthesia.<sup>6, 14</sup></li> </ul>        |

| SUBSTANCE                   | EFFECTS  | PRACTICE IMPLICATIONS   |
|-----------------------------|--|---|
| <b>Cocaine (continued)</b>  | <p>Anxiety, restlessness, irritability, confusion may occur<sup>14</sup> Women having regional analgesia may show combative behaviour and altered pain perception.<sup>6, 14</sup></p> <p>Exposure in utero can effect embryonic and fetal development causing congenital abnormalities such as brain malformation and cardiovascular abnormalities.<sup>7</sup></p> <p>Cocaine crosses the placenta causing vasoconstriction which may lead to uteroplacental insufficiency, acidosis and fetal hypoxia.<sup>8</sup></p>  | <p>Ketamine should be avoided or used with caution.<sup>6, 14</sup></p> <p>Monitor the fetal heart rate continuously in labour.</p>   |
| <b>Hallucinogens</b>        | <p>Oral ingestion causes auditory, visual and tactile hallucinations.<sup>14</sup></p> <p>Activates the sympathetic nervous system which may cause hypertension and tachycardia, increasing body temperature and dilate the pupils.<sup>14</sup></p> <p>Hyperthermia may increase maternal and fetal oxygen consumption, which could lead to fetal brain damage.<sup>14</sup></p> <p>Overdose results in respiratory depression, seizures and coma.<sup>14</sup></p> <p>Water intoxication can lead to severe hyponatremia and cerebral oedema.<sup>14</sup></p> | <ul style="list-style-type: none"> <li>• Risk of premature labour and birth, meconium stained amniotic fluid, and neonatal abstinence syndrome.<sup>14</sup></li> <li>• Hyperthermia and excess water intake – commence fluid balance chart and monitor fluid intake. Monitor electrolytes.<sup>14</sup></li> <li>• Hypertension, proteinuria and seizures can mimic pre-eclampsia. Liver and renal function tests, and urine toxicology screening can differentiate.<sup>14</sup></li> </ul> |
| <b>Marijuana (Cannabis)</b> | <p>The major chemical in cannabis causes release of dopamine leading to feelings of euphoria.<sup>15</sup></p> <p>Moderate doses may cause tachycardia and increased cardiac output.<sup>14</sup></p> <p>High doses may lead to hypotension and bradycardia.<sup>14</sup></p>  | <ul style="list-style-type: none"> <li>• Commence the Cannabis Withdrawal Chart MR223.04</li> <li>• Chronic use may reduce uteroplacental perfusion leading to intrauterine growth restriction.<sup>15</sup></li> <li>• Some research indicates increased risk of labour complications.<sup>15</sup></li> </ul>   |

| SUBSTANCE                            | EFFECTS   | PRACTICE IMPLICATIONS   |
|--------------------------------------|---|---|
| <b><i>Marijuana (Cannabis)</i></b>   |   | <ul style="list-style-type: none"> <li>• May potentiate anaesthetic drugs affecting blood pressure and heart rate.<sup>14</sup></li> <li>• May cause impaired lung function when inhaled.<sup>14</sup> Thorough airway assessment prior to anaesthesia may be required.<sup>6</sup></li> <li>• Acute ingestion – caution with use of drugs that increase the heart rate may be required.<sup>14</sup></li> <li>• Avoid drugs which increase the heart rate e.g. ketamine, pancuronium, atropine and adrenaline.<sup>6</sup></li> </ul>  |
| <b><i>Methamphetamines (Ice)</i></b> | <p>Note: also refer to section on amphetamines for effects and practice implications.</p> <p>Chemically related to amphetamines but the effect is more potent, longer lasting and more harmful to the CNS.<sup>16</sup></p> <p>Brain structure and chemistry changes cause damage to the brain neurons<sup>17</sup>.</p> <p>Increased release of the neurotransmitter dopamine stimulates mood and body movement.<sup>16</sup></p> <p>Short term effects include: increased activity and wakefulness, increased respirations, euphoria, rapid/irregular heart beat, hypermia<sup>18</sup>.</p> <p>Long term effects include mood disturbances, psychosis, aggressive or violent behaviour, memory loss and severe dental problems.<sup>16</sup></p> <p>Knowledge of effects on pregnancy is limited.<sup>16</sup></p> | <ul style="list-style-type: none"> <li>• Commence the Amphetamine Withdrawal Chart MR223.02</li> <li>• If displaying early behavioural or psychiatric symptoms ensure medical/psychiatric and security personnel are advised and safety issues are addressed.</li> <li>• Limited studies have shown increased rates of premature birth, placental abruption, fetal growth restriction, and fetal heart and brain abnormalities.<sup>16</sup></li> <li>• Ketamine should be avoided if possible because of the catecholamine-related effects e.g. hypertension and tachycardia.<sup>1</sup></li> <li>• May mimic pre-eclampsia. Liver and renal function tests should be performed.<sup>6</sup></li> </ul> |

| SUBSTANCE        | EFFECTS  | PRACTICE IMPLICATIONS   |
|------------------|--|---|
| <b>Methadone</b> | <p>Will exhibit withdrawal symptoms if missed or not given on time.</p> <p>Withdrawal symptoms may mimic labour.</p> <p>Vomiting from labour effect may cause Methadone dose not to be absorbed.</p>   | <ul style="list-style-type: none"> <li>• Administer Methadone on time.</li> <li>• Women presenting in labour should also be assessed to ensure no withdrawal symptoms.</li> <li>• If a women vomits within 20 minutes of administration of Methadone repeat dosage of Methadone is probably required. Discuss immediately with the Registrar on duty. Observe the women for signs of overdosage if a repeated dose is given.</li> <li>• If a woman presents and advises staff she has not had her Methadone dose, the pharmacy should be contacted to verify this information. This ensures the women has not already dosed.</li> </ul> |
| <b>Opioids</b>   | <p>Withdrawal symptoms include restlessness, insomnia, tachycardia, tachypnoea and hypertension.<sup>14</sup></p> <p>Increased risk of acute or chronic infections.<sup>14</sup></p> <p>Withdrawal may result in fetal distress and neonatal opioid withdrawal.<sup>14</sup></p> <p>Changes in opioid receptors lead to increased tolerance to analgesic drugs e.g. Pethidine.<sup>1</sup></p> | <ul style="list-style-type: none"> <li>• Commence the Opioid Withdrawal Chart MR223.05</li> <li>• The daily dose of Methadone should be given while the woman is in labour or postoperatively.<sup>6</sup></li> <li>• Avoid opioid antagonists.<sup>6, 14</sup></li> <li>• Observe the woman for any signs of infections.</li> <li>• Regional analgesia can be given safely, but there is an increased tendency for hypotension.<sup>14</sup> Prior to insertion ensure there are no haemodynamic instability, coagulopathy, sepsis or other contraindications.<sup>6</sup></li> </ul>  |

| SUBSTANCE                  | EFFECTS  | PRACTICE IMPLICATIONS  |
|----------------------------|--|--|
| <b>Opioids (continued)</b> |  | <ul style="list-style-type: none"> <li>• Use may lead to difficulties with intravenous access. Arrange early anaesthetic review as central venous line may be required.<sup>6</sup></li> <li>• Chronic use may lead to cross tolerance to anaesthetic drugs,<sup>14</sup> while acute use may require reduced anaesthetic drugs.<sup>6</sup></li> </ul>                    |
| <b>Solvents</b>            | <p>Effects include cardiac arrhythmia's, pulmonary complications, liver toxicity, cerebral and pulmonary oedema.<sup>14</sup></p> <p>Associated with increased risk of pre term birth, prenatal mortality and growth restriction.<sup>14</sup></p> | <ul style="list-style-type: none"> <li>• Increased risk for development of cardiac arrhythmia's.<sup>14</sup></li> <li>• Potential for myocardial infarction and labile blood pressures.<sup>14</sup></li> <li>• A neurological examination should be performed prior to regional analgesia or anaesthesia to assess for sensory or motor deficits.<sup>6</sup></li> </ul> |
| <b>Subutex</b>             | Will display signs of withdrawal if not given on time.   | <ul style="list-style-type: none"> <li>• Ensure dosage is not missed and is given on time.</li> <li>• Given sublingually. It should be coarsely grounded to allow slow absorption and decrease risk of vomiting. It can take up to 40 minutes to dissolve therefore limit unnecessary conversation with the patient during this time to allow absorption.</li> </ul>       |

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