

NEONATAL ABSTINENCE SYNDROME (NAS) - MANAGEMENT

This LOP is developed to guide clinical practice at the Royal Hospital for Women. Individual patient circumstances may mean that practice diverges from this LOP.

1. AIM

- To identify signs and symptoms of NAS and manage appropriately

2. PATIENT

- Neonate exposed to addictive substances during pregnancy

3. STAFF

- Medical, midwifery and nursing staff
- Pharmacist

4. EQUIPMENT

- Nil

5. CLINICAL PRACTICE

- **DO NOT** give naloxone (NARCAN®) at delivery to a neonate exposed to frequent antenatal opiates as it may cause acute withdrawal. If neonate is apnoeic, support respiratory function with continuous positive airway pressure (CPAP) and/or intubation
- Admit a healthy term, drug-exposed neonate with no child-at-risk issues to postnatal ward with the mother
- Obtain urine sample from neonate within three days of birth, and meconium sample, for drug screening if requested by the neonatal team and/or the Chemical Use in Pregnancy Service (CUPS) team. This may also be requested in the maternal complex case plan
- Specify screening for the following on the pathology request:
 - 6 Acetyl Morphine
 - Amphetamines
 - Cocaine
 - Benzodiazepines
 - Cannabis
- Commence supportive treatment e.g. swaddling, quiet environment, small suck feeds
- Commence NAS scoring half to one hour after each feed
- Admit neonate to Newborn Care Centre (NCC) if neonate experiences any of the following:
 - Three consecutive NAS scores ≥ 8
 - A NAS score ≥ 10
 - Clinical deterioration e.g. seizures, vomiting, inability to tolerate oral feeds
- Commence pharmacological treatment if neonate has either:
 - Three consecutive NAS scores ≥ 8
 - NAS score ≥ 12 for 2 scores
- Commence treatment at a lower threshold at the discretion of the neonatal team

Pharmacological Management

- Determine if maternal drug is predominantly opiate or non-opiate based. Urine and meconium drug screen may also provide guidance but results may be delayed. Review maternal notes for drug and alcohol assessment by CUPS team
- Administer morphine as the first line drug if opiate based withdrawal:
 - Commence 0.5 mg/kg/day in four divided doses orally. Give intravenous (IV) if excessive vomiting. No correction for IV dosing is needed
 - Increase by 0.2 mg/kg/day if NAS score is persistently > 8

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- Commence cardiorespiratory monitoring once 0.8 mg/kg/day is reached and discuss with neonatal team
- Notify neonatal team if NAS score > 11. Medications may need to be increased
- Add phenobarbitone at 2.5 mg/kg/dose twice a day if NAS score on morphine of 0.9mg/kg/day is still > 8. Loading dose is not necessary when phenobarbitone is added to morphine regime
- Administer phenobarbitone as the first line drug in non-opiate based withdrawal. Give a loading dose of 10 mg/kg when phenobarbitone is the first line drug, followed 24 hours later by a maintenance dose of 2.5mg/kg/dose twice a day

Weaning of Pharmacological Management

- Start weaning if clinically stable and NAS score is persistently < 8 for 48-72 hours
- Decrease phenobarbitone first (if dual treatment) by 10% every 2-3 days or as tolerated by neonate. Morphine is often decreased as an outpatient after phenobarbitone is ceased but may be weaned while the neonate is an inpatient. A neonate who is otherwise clinically stable but receiving both morphine and phenobarbitone, may be discharged home under close supervision of CUPS team.

Discharge from Hospital

- Keep methadone/buprenorphine exposed neonate in hospital for a minimum of 7-10 days to allow NAS scoring and identification of any social issues
- Decide length of stay for neonate exposed to other substances on an individual basis dependent on history of maternal use, neonatal clinical signs and maternal complex care plan
- Ensure a discharge planning meeting involving medical, midwifery/nursing, social work and CUPS team has occurred prior to discharge
- Arrange discharge on NAS medications if appropriate. These are prescribed WEEKLY and prescriptions must be telephoned through to RHW Pharmacy (ext. 26716). Prescribe sufficient quantity of medication for 10 days on discharge plus one day extra to cover spillage
- Order separate prescriptions for each medication. Numbers must be written in words to avoid errors (as per S4/S8 drug requirements)
- Arrange follow up for neonate who lives in the local area, at Sydney Children's Hospital Outpatients Department (level 0) with the CUPS team. Clinics are held every Monday and Thursday from 1400 hours. Appointments are to be organised by the CUPS team prior to discharge
- Assist CUPS team in arranging follow up appointments for the neonate discharged out of area

6. DOCUMENTATION

- Medical Record
- Finnegan's NAS score

EDUCATIONAL NOTES

- Epidemiological studies estimate that between 1-1.5% of women are known to use drugs of dependency regularly during pregnancy. Recreational users are much more common.
- Most (>80%) of drug-using women who deliver at RHW are known antenatally to the CUPS team.
- Detailed and non-punitive drug and alcohol history during the antenatal period is more indicative of drug use than maternal or neonatal toxicology.
- Opiate screens do not cover methadone or buprenorphine. Other types of testing (e.g. hair, nails, amniotic fluid etc) remain experimental.
- Onset of withdrawal symptoms varies and is dependent on the dose, half-life and timing of last drug dose prior to birth.

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- Heroin withdrawal may be clinically apparent within 24 hours from birth but is usually observed 24-72 hours postpartum.
- Methadone/buprenorphine withdrawal in neonate may be delayed until 3-7 days after birth, or beyond.
- Stimulants such as amphetamine-like substances may cause a “crash” instead of withdrawal. Neonates may be very sleepy and feed poorly rather than exhibit the symptoms typical of opiate withdrawal.
- More than 50% of pregnant drug-using women also have co-existing psychiatric morbidity, most commonly depression, so the effects of psychotropic agents on the neonate will also need to be taken into account. SSRI/SNRI withdrawal causes different symptomatology. Refer to Antidepressants in Pregnancy – Neonatal Observations and Interventions in Pregnancy LOP for management guidelines.
- The most commonly used tools to monitor drug withdrawal are the Finnegan and Modified Finnegan Scores. Finnegan Score has been validated only for term/near term neonates and opiate exposure. However, due to lack of any other methods, the Finnegan's Score is used to monitor both preterm and non-opiate exposed neonates. Be aware amphetamine affected neonates may have falsely low Finnegan Scores.
- Signs and symptoms of NAS include;
 - Central nervous system (CNS) signs:**
 - Hyperirritability and hyperactivity
 - Increased muscle tone
 - Exaggerated reflexes
 - Tremors, myoclonic jerks (convulsions more frequent in non-opiate withdrawal)
 - Disturbed sleep
 - Abnormal electroencephalogram (EEG)
 - Respiratory signs:**
 - Tachypnoea, irregular respirations
 - Stuffy nose, sneezes
 - Gastrointestinal signs:**
 - Disorganized suck and swallow
 - Vomiting and diarrhoea (dehydration, electrolyte imbalance, buttock excoriation)
 - Hyperphagia – this usually starts after a week and settles in about 3-4 weeks.

7. RELATED POLICIES / PROCEDURES / CLINICAL LOPs

- Neonatal Abstinence Syndrome Guidelines. GL2013_08
- Antidepressants in Pregnancy – Neonatal Observations and Interventions in Pregnancy - Management
- Neonatal Observations Outside Newborn Care

8. RISK RATING

- High

9. NATIONAL STANDARD

- Standard 5 Comprehensive Care

NEONATAL ABSTINENCE SYNDROME (NAS) – MANAGEMENT cont'd

10. REFERENCES

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REVISION & APPROVAL HISTORY

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