Neonatal Abstinence Syndrome - Paediatric Full Clinical Guideline

Reference no.: PAED/03:16/S7

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1. Introduction

Babies born to mothers who use illicit drugs, alcohol and certain prescribed medications during pregnancy are at risk of problems both in the early neonatal period, and later in life. Their mothers may have a chaotic lifestyle and poor uptake of antenatal services. These guidelines outline the principles for the management of infants born to mothers using illicit drugs/alcohol and/or certain medications.

2. Purpose and Outcomes

The purpose of this policy is to rationalise and formalise the care available to these infants and reduce the number of complications.

3. Abbreviations

BBV - Blood Borne Viruses
CNS - Central Nervous System
CYPD - Child and Young Persons Department (Social Services)
NICU - Neonatal Intensive Care Unit
NEWS - Neonatal Early Warning score

4. Commonly abused drugs

These include:

Amphetamines	Ecstasy
Cannabis	rarely used
Cocaine	Crack cocaine
Heroin	Methadone
Temazepam	Barbiturates (rarely used)
Diazepam	Legal highs

5. Effects of maternal drug abuse on the fetus and newborn infant

Drug	Possible Effect(s) on Fetus	Possible Effect(s) on Baby
Cannabis,	No significant harmful effects other than low birth weight due to tobacco	
LSD and magic mushrooms	No significant effect on foetus	
Alcohol	Fetal Alcohol syndrome and fetal alcohol spectrum disorders	
Amphetamines and Ecstasy	Small for dates; increased risk of cleft palate and heart defects	
Cocaine (crack cocaine may have less side effects than cocaine)	Small for dates; increased incidence of intracranial haemorrhage and ischaemic lesions	Poor feeding and difficult to settle
Opiates (heroin, methadone)	Preterm and low birth weight	Withdrawal (see below)
Tranquillisers (Tranx) e.g. benzodiazepines such as valium	Use in 1st trimester increases risk of cleft palate Preterm and low birth weight	Withdrawal
Solvent abuse	Theoretical risk of reducing oxygen supply to infant	

6. Signs, symptoms and timings of neonatal abstinence syndrome (withdrawal)

Drug groups most likely to cause this are opiates/opioids, benzodiazepines and many of the psychiatric medications..
Usually non-specific in nature and do not necessarily indicate a state of withdrawal of a particular drug of dependence. Any of the following it should prompt consideration of neonatal withdrawal syndrome:

Sleeplessness	Vomiting	Nasal stuffiness	Sweating	Fist sucking
Sneezing	Fever	Convulsions	Tremors	Diarrhoea
Tachycardia	Hyper-reflexia	Restlessness/ irritability	Yawning	Tachypnoea (Respiratory depression with opiate intoxication)

A baby is more likely to develop withdrawal syndrome if the mother has been

regularly taking drugs during the later stages of her pregnancy. However even intermittent use by the mother may result in physical dependence in the fetus. A baby may show signs of withdrawal even when the mother has not recently used opiates (if more than a month since last use withdrawal is highly unlikely in the neonate).

Heroin withdrawal symptoms characteristically begin soon after birth, reaching maximum intensity after 2-4 days and fading out by 10-14 days.
Methadone withdrawal is more likely to present later and to produce symptoms and signs that extend over many weeks and months. (Parents should be warned of this and advised to seek medical advice if severe withdrawal symptoms develop).
Benzodiazepine withdrawal can have a delayed onset (days-weeks) and be protracted only rarely seen because the baby will have been home and not in hospital.

7. Management

7.1 Antenatal care (see Women who use drugs & alcohol in pregnancy (S6)

Mothers who are using drug/alcohol or prescribed medications likely to cause withdrawal should be

Informed that their baby will require observation in hospital for a period of time dependent on the half-life of the substance likely to cause withdrawal). Initial observations maybe on the postnatal ward (314) but admission to NICU may be required. Mothers using drugs likely to cause withdrawal are given the patient information on Neonatal abstinence syndrome. (Appendix A)

Ideally, CYPD involvement should commence in the antenatal period if required. NTA (National Treatment Agency for substance misuse) recommends a birth plan, if necessary should be in place by 32 weeks gestation. (See within these guidelines for Triggers to Social Services where Parents/Carers use drugs).

Guidance/plan of care will be documented in the orange notes within the obstetric records and paediatric notes.

7.2 At Delivery

Narcan **should not** be routinely given to the infant of a mother who has been using opiates. This is because it can result in acute withdrawal and death.
Observations should be undertaken for the first 2 hours of life and a Neonatal Early Warning score (NEWS) chart commenced.

7.3 On the postnatal ward/neonatal unit

Infants generally should be observed on the postnatal ward. Following initial observations in the first 2 hours of life, reduce to 4hourly until discharged from paediatric care. Assessing specifically any signs or symptoms of withdrawal. Observations should be documented on the NEWS chart and escalated as required.

In certain circumstances in consultation between a senior Paediatrician (Registrar or above) and Specialist Midwife babies could be safely discharged home earlier (For example: Methadone <30mg/day with no other drug use – unlikely the baby will have any withdrawal).

If the child has symptoms of increasing drug withdrawal, then discharge must not

take place and the infant must continue to be observed. If the infant has no symptoms or the symptoms score is low and static, the baby may be discharged. The child's parents should be warned that methadone withdrawal may present late in their child and they should be advised to seek medical advice if severe withdrawal symptoms develop. The parents should be made aware of the signs & symptoms of drug withdrawal prior to discharge.

A record of the minimum and maximum drug doses that mum has taken during her pregnancy should be noted.

Sending a urine sample (minimum 1-2 ml, ideally 15-20 ml) from the baby to biochemistry for drug screening should be considered if the history is incomplete or the clinical picture atypical.

In the presence of mild symptoms, supportive therapy only is indicated.
This includes wrapping, cuddling and nursing in a quiet, dark environment.

Specific therapy should be commenced on the observation of significant and disturbing symptoms or the development of convulsions and should be discussed with a Senior Paediatrician either SpR or Consultant. All babies requiring specific therapy should be transferred to the neonatal unit. Where specific therapy for withdrawal is required, the child should remain in hospital for 4 days following withdrawal of treatment.

If the infant has a convulsion, other causes of fits other than drug withdrawal must be considered. These include hypoglycaemia, hypocalcaemia, hypomagnesaemia, infection, hypoxia and intraventricular haemorrhage.
It is important to remember that the symptoms of neonatal abstinence syndrome may mimic those of congenital thyrotoxicosis.

Review maternal BBV status. Immunise baby (hep B) if appropriate i.e. if mum is injecting drugs or hep B or Hep C positive.

Further consideration should be given in the postpartum period to child protection.

8. Specific therapy

Medical Treatment for

8.1 Opiate/opioid withdrawal

The aim of specific treatment is to allow sleep and feeding patterns to be as normal as possible. This is best achieved by treating the child with oral morphine. Nurse on apnoea monitor and continue regular observations (4-6 hourly). When a stabilising dose is achieved, this should be maintained for 3-5 days so that the infant sleeps well, feeds effectively and gains weight. The dose should then be gradually reduced. As a general rule, medicines should be administered at the time of feeding in order to minimise the number of times that the baby is disturbed. If vomiting is a problem the medicines should be given 30minutes before a feed. Pharmacological treatment should be used carefully monitoring response in symptoms closely in baby.

Morphine Oral Solution

Starting dose:	- 40microgram/kg/dose every 4 hours
Increase by steps of:	- 20microgram/kg/dose until control is achieved
Maximum dose 200microgram/kg/dose 4hourly.	
RESPIRATORY RATE MUST BE CLOSELY MONITORED.	

After 3-5 days the dose should be reduced every 24 hours if severe symptoms do not persist.
If morphine fails chlorpromazine should be tried. The dose is 550-750microgram/kg/dose given four times daily. This can be doubled if withdrawal is severe. Disadvantages include: a prolonged half life making dose titration difficult; metabolites are eliminated over a period of some months with the potential for adverse effects over a considerable period of time; reduced threshold for convulsions. Hypothermia has occasionally been known to develop.

8.2 Benzodiazpine withdrawal

Treat with diazepam, 3-6 mg/kg/day, 8 hourly. Once the infant has been stabilised then the dose should be slowly and steadily reduced over several weeks.

8.3 Cocaine misuse

Babies born to cocaine-using mothers are very difficult to settle and will need a lot of cuddling and touching before they will be calmed and reassured. This will involve a great deal of nursing time and the mother should be encouraged to be the main comforter to help build her self-confidence as a parent and to bond with her baby. There is no evidence for a cocaine-induced withdrawal syndrome. The behaviour of cocaine-exposed infants is probably the result of CNS manifestations of fetal cocaine effect. Abnormalities in neurobehaviour have been observed to continue for up to 6-9 months. They do not respond to therapeutic treatment.

Cranial sonograms are not routinely recommended, but recent literature is suggestive of CNS abnormalities, including hemorrhagic ischemic lesions in some drug-exposed infants. As yet, evidence is insufficient to support a mandate for cranial sonograms in all cocaine-exposed infants. However, special consideration should be given to specific neuroimaging of cocaine-exposed preterm infants, infants whose head circumference falls below the 10th percentile on standardized fetal growth curves, and infants with abnormal neurologic signs, neurobehavioral dysfunction, or seizure activity.
Ref: Pediatr Radiol (2009) 39:232–238

9. Breast feeding

Almost all drugs and chemicals are passed from maternal blood to breast milk. In general, although most recreational drugs are present in breast milk the amount is too small to cause harm to the baby. In drugs of misuse there may be some effect e.g. drowsiness with opiates or tranquillisers, if the level of drugs in the milk is particularly high. Seizures have been reported in breast fed infants of mothers using crack cocaine. Therefore, with the exception of women who use cocaine or crack

cocaine or more than a small amount of alcohol, mothers who are using drugs, including women who are using methadone, should be encouraged to breast feed in the same way as any other mother, providing their drug use is stable and the baby is weaned gradually. In my view women should be strongly advised not to use illicit drugs or alcohol when breast feeding and seek advice regarding prescribed medications.

Women who are HIV positive or whose HIV status is unknown but who may have been at risk, should be informed about the risks of infecting the baby and advised against breast feeding. Hepatitis C is found in 60% of injecting drug users. Hep C is not a contraindication for breast feeding. There is no effective immunisation against Hepatitis C (see separate guidelines for Hep C and HIV).

Each mother should be given all the information they need to make an informed choice about breast feeding. Having made their decision, they should be fully supported by all professionals involved. They should be warned not to suddenly stop breast feeding but to gradually tail off breast feeding, as this may lead to acute withdrawal in their child.

10. Issues affecting discharge

Referral to social care (CYPD) should be considered in all families and this needs to be assessed prior to discharge. It is important to discuss this with the parents prior to referral. Referrals to CYPD should be made via the Ashtree House reception team when appropriate. This only applies to City patients County have to go through starting point

11. Follow Up

This is routine for all baby's any way and there is no specific follow up for babies who were deemed at risk of withdrawal. If child has seizures or neurological complication, then a paediatric outpatient follow up should be arranged.

12. Monitoring Compliance and Effectiveness

Monitoring requirement	Numbers of babies having the appropriate observations Discharge policy followed
Monitoring method	Retrospective case note review
Report prepared by	Specialist Midwife for Substance Misuse
Monitoring report sent to:	Maternity Development & Governance Committee
Frequency of report	Annually

13. References

Advisory Council on the misuse of Drugs. (2003) Hidden Harm. Available at www.drugs.homeoffice.gov.uk.

Department of Health (2004) Maternity Standards, National Service Framework for

Children, Young People and Maternity Services. London www.dh.gov.uk

Jackson, L., Ting, A., McKay, S., Galea, P., Skeoch, C. A randomised controlled trial of morphine versus phenobarbitone for neonatal abstinence syndrome. Arch Dis Child Fetal Neonatal Ed 2004;89:F300-304

Johnson, K., Gerada, C., Greenough, A. Treatment of Neonatal Abstinence Syndrome. Arch Dis Child Fetal Neonatal Ed 2003;88:F2-F5

Kassim Z & Greenough A 2006 Neonatal abstinence syndrome: Identification and management Science Direct Journal Homepage 16, 172-175

National Litigation Authority CNST Maternity Standards 2009/2010

Osborn, DA., Cole, MJ., Jeffery, HE. Opiate treatment for opiate withdrawal in newborn infants. Cochrane Database Syst Rev 2005 Jul20; (3):CD002053

Royal College of Anaesthetists Royal College of Midwives, Royal College of Obstetricians and Gynaecologists, Royal College of Paediatrics and Child Health. (2007) Safer Childbirth: Minimum Standards for the Organisation and Delivery of Care in Labour. London RCOG Press www.rcog.org.uk

Theis, JGW et al Current management of neonatal abstinence syndrome: A critical analysis of the evidence. Biol Neonate 1997;71:345-356

Drugs, pregnancy and child care. A guide to professionals. Second revised ed.1995. Published by: Institute for the Study of Drug Dependency. Waterbridge house, 32-36 Loman Street, London, SE1 OEE.

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	2	November 2009	Dr N Ruggins Cons Paediatrician J. McCulloch Specialist Midwife	CNST Review
	3	April 2012	J. McCulloch Specialist Midwife	Update
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	4	March 2016	Mr Balasubramaniam – Consultant Neonatologist J.McCulloch – Specialist Midwife	
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To be read in conjunction with: Caring for pregnant women with a history of substance misuse (S6)				

Development/review of Guideline:	Mr Balasubramaniam – Consultant Neonatologist J. McCulloch – Specialist Midwife
Consultation with:	Maternity Guidelines Group
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Will Social Services be informed?
The Children and Young People's Department will only be involved in your care if you need extra help and support or if there are concerns around the safety and welfare of your baby. You **will not** be automatically referred just because you use drugs.

Useful Contacts:

Women's Work

01332 242077

Aquarius
(Family Drug and Alcohol Service)

03007900265 option 2

Phoenix Futures
03007900265 option 1

Derby Family Justice Centre

01332 256897

Useful Web-sites:

www.talktofrank.com
Provides up-to-date information and advice about drugs and substance misuse

www.nta.nhs.uk
National Treatment Agency for Substance Misuse

SUBSTANCE MISUSE TEAM

Judy McCulloch
Specialist Midwife in Drugs & Alcohol
judy.mcculloch@nhs.net

Office: **01332 786749**
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Antenatal Services

Derby Teaching Hospitals NHS
NHS Foundation Trust

Information for Parents Neonatal Abstinence Syndrome

Taking pride in caring

WILL MY BABY HAVE WITHDRAWAL?

If you were using opiates and/or opioids (e.g. heroin, methadone, codeine, DF118, tramadol) or benzodiazepines
(valium, benzo's temazepam) during your pregnancy your baby may experience withdrawal symptoms, known as Neonatal Abstinence Syndrome.

Withdrawal symptoms are rarely seen in babies born to mothers who have used stimulants (crack/cocaine/amphetamines) or have used cannabis.

Withdrawal symptoms may also be seen in babies of mothers who have been drinking heavily during pregnancy.

Symptoms usually start 24 hours after birth and may last for up to two weeks. However it has been known for withdrawal symptoms to start a few weeks after birth, especially with methadone users during pregnancy.

If the baby has shown few symptoms 4 days after birth it is unusual for withdrawal to be serious.
For this reason though you will be advised to remain in hospital with your baby for about 4 days.
Occasionally a baby may require treatment in the neonatal unit if the withdrawal symptoms are severe

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HOW WILL YOU KNOW IF YOUR BABY HAS SIGNS OF WITHDRAWAL?

Baby is difficult to settle
High pitched crying
Fever
Tremor or twitching
Difficulty in feeding
Diarrhoea and vomiting
Excessive weight loss or slow to gain weight
Excessive sucking of fists
Sneezing, stuffy nose and trouble breathing
Fits/convulsions

WHAT YOU CAN DO TO HELP

SLEEPLESSNESS

Reduce noise, bright lights, patting or touching baby too much
Soft, gentle music, singing, humming and
ocking may help
Try bathing baby in warm water
Clean and dry nappy, watch buttocks closely for rash or skin irritation
Feed baby on demand

PROLONGED AND/OR HIGH-PITCHED CRYING

Hold baby close to your body
Skin to skin contact or a baby sling may be useful.

EXCESSIVE SUCKING OF FISTS

Cover baby's hands with mittens if skin becomes damaged
Keep areas of damaged skin clean
Avoid lotions/creams as the baby may suck on them

FEVER

Remove extra covers and don't swaddle your baby
Dress your baby in just a nappy and vest or lower the room temperature

DIFFICULT OR POOR FEEDING

Feed small amounts often
Feed in quiet, calm surroundings with minimal noise and disturbances
Allow time for rest between sucking

BREASTFEEDING

If your drug use is stable then the benefits from breast feeding for you and your baby outweigh the risk of hazards to baby.
For more information on breast-feeding talk to your midwife or the Specialist Midwife in Drugs and Alcohol.

VOMITING

Feed your baby slowly
Clean the skin area after he/she has been sick as stomach contents contain acid which can irritate the skin.

TREMBLING

Reduce light and noise
Swaddle baby in a soft blanket

FITS/CONVULSIONS
Lay your baby in a safe place making sure they can't fall or be injured.

Call 999 immediately

WHEN YOUR BABY GOES HOME

KEEP YOUR BABY SAFE
You are advised not to sleep with your baby in a bed or on the sofa.