

Management of Perinatal Substance Use and Abuse

Practice Guideline



June 2002

Background

Management of Perinatal Substance Use and Abuse was identified as a priority for clinical practice guideline development by members of the Child Health Network for the Greater Toronto Area during a 2001 consensus forum.

An expert panel¹ was established, the guideline was developed and distributed throughout the membership for input. The final draft was approved by the Coordinating Committee in April 2002. Implementation throughout the Child Health Network will be accomplished through the following process:

1. Network organizations will facilitate a supportive environment for adoption of CHN Practice Guidelines by incorporating the guidelines into their existing guideline process (order sets, intranet availability, etc).
2. Network organizations will identify a "champion" to take the lead in ensuring implementation at the organization.
3. The CHN guideline will proceed through the organizational process for "approval" (MAC, Pharmacy, etc).
4. Education sessions will be provided for staff. CHN will provide a Power Point Presentation for organizational use.
5. CHN will monitor implementation through a variety of methods and report to members (surveys, chart audits, etc).

Introduction

Substance use and exposure during pregnancy is not always illicit use. Legal use of substances such as tobacco, alcohol and prescription drugs actually have a greater impact on babies than illicit use of these and other substances. Care must be taken to ensure that the lab carrying out the testing understands the implications of reporting results. Actual results should be reported, not just a positive or negative result. Care must be taken to ensure a chain of custody of the sample taken and sent for testing.

Prenatal Screening

The following recommendations should be followed when dealing with women during pregnancy:

- Any pregnant women who admits using tobacco, alcohol or drugs (over the counter, or other drugs not prescribed by a physician) on the Ontario Antenatal Record questionnaire, should be questioned further by her

¹ Appendix 1 – Members of CHN Expert Panel for Perinatal Substance Use and Abuse

physician in order to determine the extent of her use and should receive counseling on smoking cessation, abstinence from alcohol ingestion and drug use from the appropriate sources. Laboratory testing (drug screen) should be considered

- All women who use opioids for legitimate use during pregnancy (e.g. sickle cell disease, chronic pain) should be identified and receive a consult with a practitioner with expertise in intrapartum drug use (e.g. St. Joseph's Health Centre Addictions Medicine Program)
- All women who are identified, as using/abusing illicit substances should be referred to an addictions program for consultation and possible treatment and/or counseling
- Laboratories should be instructed to report presence of substances by reporting the level of substance present in the sample (as opposed to reporting "positive" or "negative", which may use different values).

Identification and Screening for Babies at Risk

Babies born to mothers included in the following list are considered to be at high risk for exposure to potentially toxic substances and should be screened in the immediate postnatal period:

Table 1 Mothers at High Risk for Substance Use/Abuse

- | |
|--|
| <ul style="list-style-type: none">• Mothers identified by primary or obstetrical caregivers• Mothers engaged in high risk behaviour, e.g., taking street drugs• Mothers who are on alert with any child protection agencies, e.g. CAS, CCAS• Mothers who act in an intoxicated manner on admission or during office visits• Mothers positive for a history (past or current) of use of alcohol and other drugs |
|--|

Guidelines for Testing Babies

Urine Testing

Urine testing is the first screening test for babies. If a positive result is obtained, further testing on meconium and hair may follow (see below). If negative results are obtained, further testing may be considered based on maternal factors, behavior of the infant, or probability of exposure. Urine testing detects *recent* exposure to drugs by the mother. Consent is not necessary.

Procedure:

1. Collect specimen with a urine bag
2. Place sample in a sterile container labeled with name, date of birth, date and time of sample collection
3. Send specimen to the lab
4. Request "Full Drug Screen"

Meconium Testing

Meconium testing determines longitudinal drug/alcohol use. Consent is not necessary.

Procedure:

1. Collect first postpartum sample of meconium (or first possible sample, if meconium has already been passed) using a tongue depressor and place in a sterile specimen container (labelled with the patient's name, date of birth, date specimen obtained)
2. Place specimen on ice and send to the lab where it should be immediately refrigerated prior to testing or sending for testing (samples should be sent to MotheRisk at HSC for testing)

Hair Testing

Hair sampling also detects longitudinal drug/substance use. It can indicate timing of the drug use during the pregnancy. Consent from the parent or Children's Aid Society (CAS) is necessary.

Procedure:

1. Obtain approximately 30 strands of hair at least 1 cm long and from as close to the scalp as possible
2. Hair should be placed in a small plastic sealable bag or in a small paper envelope within the plastic bag
3. Indicate on the envelope or bag with a ball-point pen, the proximal and distal ends of the hair and label the sample with patient's name, date of birth and date sample taken
4. The sample should be sent to MotheRisk at HSC for testing. Call 416 813 6780

Guidelines for Observation and Monitoring of the Baby Exposed to Opioids

Babies exposed to opioids and other substances during the prenatal period may suffer from withdrawal and other symptoms of drug exposure after birth.

Neonatal Abstinence Syndrome

Neonatal withdrawal occurs in 40–60% of infants born to women on opiates such as heroin, and up to 85% of infants born to women on methadone¹. There might be a direct (but weak) correlation between the maternal methadone dose and the risk of neonatal withdrawal.

Onset and Duration

Infants exposed to Methadone exhibit symptoms of withdrawal between 2 – 7 days after birth. Infants exposed to other opiates, such as heroin, usually exhibit

symptoms within the first 24 hours after birth. However, signs can occur as late as 2 – 4 weeks after birth. The presentation of withdrawal depends on the timing of the mother’s last dose of opiate before delivery.

Figure 1 Signs and Symptoms of Neonatal Abstinence Syndrome

- Irritability, high-pitched cry
- Increased tone, tremors
- Poor feeding, vomiting, weight loss
- Sweating, hyperthermia, mottled skin
- Metabolic disturbances e.g., hypoglycemia

Note: Presentation similar to neonatal sepsis, hypoglycemia, hypocalcemia, and intracranial hemorrhage.

Neonatal withdrawal can result in seizures and neonatal death if untreated. There is no evidence of any long-term sequelae based on (1) poor literature evidence to date, and (2) poorly understood mechanism of neonatal seizures in opiate withdrawal.²

In order to ensure recognition of affected infants, the following recommendations should be followed:

- All infants with positive drugs/substance screen tests should be evaluated for signs of fetal alcohol syndrome (FAS)/exposure (FAE) (facial measurements) and receive assessments for learning ability prior to attendance at school and during the school years.
- All infants who test positive for substance exposure should be followed up at the **regional** neonatal follow up clinic at 3 months and 2 years of age.
- Infants who test positive for substances should be observed and monitored using the Neonatal Abstinence Score³ (Appendix 2)

Management of Neonatal Abstinence Syndrome

1. Admit all neonates born to women on methadone to the neonatal intensive care unit/special care nursery
2. Monitor for signs of withdrawal, using Neonatal Abstinence Scoring System

² American Academy of Pediatrics. Neonatal Drug Withdrawal. Policy Statement. June 1998 101(6), pp 1079 – 1088. At <http://www.aap.org/policy/re9746.html>

³ Finnegan LP et al. A scoring system for evaluation and treatment of the neonatal abstinence syndrome: A new clinical and research tool, in Morselli PI and Sereni F (eds): Basic and Therapeutic Aspects of Perinatal Pharmacology. New York, Raven Press. 1975, pp 139 – 153. and Zahorodny W et al. The neonatal withdrawal inventory: A simplified score of newborn withdrawal. Dev Behav Pediatr 1998. 19(2): 89 – 93.

3. In case of withdrawal from opioids, give oral morphine according to body weight and score (see below)
4. In case of withdrawal from other substances (e.g. barbiturates, ethanol, sedatives, hyponotics), give Phenobarbital
5. Initiate scoring within 2 hrs of admission to nursery
6. Continue scoring every four hours for five days, or as long as morphine treatment and weaning is necessary.
7. If score ≥ 8 , score q2H
8. Infants should not be awakened to obtain a score

Administration of Morphine

- Morphine is not meant to be given on a sliding scale nor is it meant to be given on a PRN basis.
- Morphine is not indicated if consecutive total abstinence scores or the average of any three consecutive scores continues to be seven or less
- An average score of 8+ for 3 consecutive readings indicates the need for oral morphine.
- If score ≥ 12 for two consecutive intervals, or average of any two scores is 12, start treatment at the appropriate dosage for that score within 2-4 hours

Dosing Guidelines

Follow the following chart for morphine administration:

Table 2 Dosing Guidelines for Babies with Neonatal Abstinence Syndrome

Score	Morphine daily dose (administer in four divided doses)	Morphine single dose
8-10	0.32 mg/kg/day	0.08 mg/kg
11-13	0.48 mg/kg/day	0.12 mg/kg
14-16	0.64 mg/kg/day	0.16 mg/kg
17 +	0.8 mg/kg/day	0.2 mg/kg

Maintenance dose

The neonate should continue on the dose of morphine required to keep the scores <8 for 24 – 48 hours before weaning commences³.

Weaning of Morphine

Weaning of morphine can occur as long as scores remain below treatment level.

1. Weaning is usually 0.05 mg/kg **per daily dose**, every 2 – 4 days^{3,5,6}.
2. Discontinuation of morphine can occur when the neonate is stable for 2 – 4 days on a dose as low as 0.05 – 0.1 mg/kg/day.
3. The duration of the weaning process is usually 4 – 8 weeks².

References

1. Bell GL and Lau K. Perinatal and neonatal issues of substance abuse. *Pediatr Clin North Am* 1995. 42(2): 261 – 281.
2. American Academy of Pediatrics. Neonatal Drug Withdrawal. Policy Statement. June 1998 101(6), pp 1079 – 1088. At <http://www.aap.org/policy/re9746.html>
3. Finnegan LP et al. A scoring system for evaluation and treatment of the neonatal abstinence syndrome: A new clinical and research tool, in Morselli PI and Sereni F (eds): *Basic and Therapeutic Aspects of Perinatal Pharmacology*. New York, Raven Press. 1975, pp 139 – 153.
4. Zahorodny W et al. The neonatal withdrawal inventory: A simplified score of newborn withdrawal. *Dev Behav Pediatr* 1998. 19(2): 89 – 93.
5. Department of Neonatal Medicine Protocol Book, Royal Prince Alfred Hospital. Available at <http://www.cs.nsw.gov.au/rpa/neonatal/html/newprot/nas.htm>
6. Tobias JD, Schleien CL and Haun SE. Methadone as treatment for iatrogenic narcotic dependency in pediatric intensive care unit patients. *Crit Care Med* 1990. 18: 1292 – 1293.

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NEONATAL ABSTINENCE SCORE*

Date _____

SYSTEM	SIGNS AND SYMPTOMS	SCORE	24	2	4	6	8	10	12	14	16	18	20	22
METABOLIC/VASOMOTOR/RESPIRATORY DISTURBANCES	High-pitched Cry	2												
	Continuous High-pitched Cry	3												
	Sleeps <1hr After Feeding	3												
	Sleeps <2hrs After Feeding	2												
	Sleeps <3hrs After Feeding	1												
	Hyperactive Moro Reflex	2												
	Markedly Hyperactive Moro Reflex	3												
	Mild Tremors Disturbed	1												
	Moderate-severe Tremors Disturbed	2												
	Increased Muscle Tone	2												
CENTRAL NERVOUS SYSTEM DISTURBANCES	Excoriation (Specific Area)	1												
	Myoclonic Jerks	3												
	Generalized Convulsions	3												
	Sweating	1												
	Fever <37.2-38.2EC	1												
	Fever >38.4EC	2												
	Frequent Yawning (>3-4 Times)	1												
	Mottling	1												
GASTROINTESTINAL DISTURBANCES	Nasal Stuffiness	1												
	Sneezing (>3-4 Times)	1												
	Nasal Flaring	2												
	Respiratory Rate >60/min	1												
	Respiratory Rate >60/min with Retractions	2												
	Excessive Sucking	1												
	Poor Feeding	2												
	Regurgitation	2												
SUMMARY	Projectile Vomiting	3												
	Loose Stools	2												
	Watery Stools	3												
SUMMARY	TOTAL SCORE													
	SCORER'S INITIALS													
	Initiation of Therapy (+) Increase in Therapy (↑) Decrease in Therapy (↓) Discontinue Therapy (!)													

*Based on Finnegan Scoring System

APPENDIX 1

Expert Panel for Perinatal Substance Use and Abuse

Members

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