



ST VINCENT'S
HEALTH AUSTRALIA

Neonatal Abstinence Syndrome

Victorian Opioid Management ECHO
Department of Addiction Medicine
St Vincent's Hospital Melbourne 2019

UNDER THE STEWARDSHIP OF MARY AIKENHEAD MINISTRIES

What is NAS?

- Definition is: a collection of symptoms shown by a neonate when withdrawing from a substance.
- We will cover only opioid withdrawal in this presentation, but NAS can refer to the withdrawal from any substance

As defined by the RWH:

- Drug withdrawal observed in babies of women physically dependent on opiates. Symptoms include:
 - Neurological excitability
 - Gastrointestinal dysfunction
 - Autonomic reactivity

Incidence, Onset and Duration

Incidence of NAS is anywhere between 48-94% of infants exposed *in utero* as per one Cochrane review.

Onset of symptoms depends on the half life of the opioid that the infant was exposed to in utero.

- Heroin usually within 24 hours post birth
- Methadone much longer : 24-168 hours post birth but there have been reports of delayed withdrawal up to 3-6 weeks after
- The withdrawal period may last up to 6 months post-birth
- **(Opioid Neonatal Abstinence Syndrome: Controversies and Implications for Practice Kim Wolff , and Raul Perez-Montejano)**
- There is debate regarding the link between dosage of methadone and incidence/severity of NAS.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3793207/#R17>
- Australian guidelines currently suggest maternal stability should be the guiding principle rather than an aim towards reducing NAS severity.

How to assess?

Several scoring tools exist.

Primarily Finnegan – main one used at RWH

Others are:

Lipsitz

Ostrea

Harper

Rivers

Mainly use Finnegan – easy and consistent

When to assess?

When suspected maternal opiate dependence including prescription opioids use of which may have been undetected in pregnancy:

Commence within 2 hours after delivery

Repeat every 4 hours (30-6 mins post feed)

For a minimum of 4 days.

Can safely discharge if:

- daily peak Finnegan score less than 6 for last 2 **days**
- no other unresolved discharge issues exist.

NEONATAL ABSTINENCE SCORING SYSTEM

NAME:

Date and Time in Hours

System	Signs and Symptoms	Score																		
CENTRAL NERVOUS SYSTEM DISTURBANCES	Excessive High Pitched (OR Other) Cry	2																		
	Continuous High Pitched (OR Other) Cry	3																		
	Sleeps < 1 hour after Feeding	3																		
	Sleeps < 2 hours after Feeding	2																		
	Sleeps < 3 hours after Feeding	1																		
	Hyperactive Moro Reflex	2																		
	Markedly Hyperactive Moro Reflex	3																		
	Mild Tremors Disturbed	1																		
	Moderate-Severe Tremors Disturbed	2																		
	Mild Tremors Undisturbed	3																		
	Moderate-Severe Tremors Undisturbed	4																		
	Increased Muscle Tone	2																		
	Excoriation (Specify Area):	1																		
	Myoclonic Jerks	3																		
Generalised Convulsions	5																			
METABOLIC/VASOMOTOR/ RESPIRATORY DISTURBANCES	Sweating	1																		
	Fever (37.3 – 38.3C)	1																		
	Fever (38.4C and higher)	2																		
	Frequent Yawning (> 3 – 4 times)	1																		
	Mottling	1																		
	Nasal Stuffiness	1																		
	Sneezing (> 3 – 4 times)	1																		
	Nasal Flaring	2																		
	Respiratory Rate > 60/min	1																		
	Respiratory Rate > 60/min with Retractions	2																		
	GASTROINTESTINAL DISTURBANCES	Excessive sucking	1																	
Poor Feeding		2																		
Regurgitation		2																		
Projectile Vomiting		3																		
Loose Stools		2																		
Watery Stools		3																		
TOTAL SCORE																				
INITIALS OF SCORER																				

Adapted from – L.P. Finnegan (1986)

Management

Once the Finnegan score:

Averages 8 or more on 3 consecutive scores OR

Averages 11 or more on 2 consecutive scores

AND

Scoring by staff that are experienced in using the Finnegan system:

- Transfer the baby to a SCN
- Commence pharmacological treatment

Before pharmacological management

Supportive therapy is **FIRST LINE**

- swaddling, holding, rocking
- pacifiers
- breastfeeding (significantly improves NAS scoring)
- decrease sensory stimulation
 - reduce light
 - reduce noise
- monitor for other disease status
- symptom specific management
 - change feed type or schedule
 - treat dermatitis quickly to minimise further irritation to the infant.

Pharmacological management

Oral Morphine is the recommended pharmacological management.

As per the RWH:

3 consecutive scores 8+ - 125microg/kg/dose 6 hrly (or 85microg/kg/dose 4hrly)

2 scores 11+ - 125-175microg/kg/dose 6 hrly (or 85-120microg/kg/dose 4hrly)

* Use the 4 hourly dosing if you cannot control symptoms with 6 hourly regimen.

** Can also consider using phenobarbitone if there are other substance dependences

Weaning morphine

Wean dose by 10% of original dose every 72 hours.

Once daily dose is 30microg/kg/dose, then cease oral morphine.

Continue assessment for further 72 hours.

Home based withdrawal

Can be done.

Ensure that the social situation is suitable and that the infant will be safe.

Ensure that there are sufficient parenting abilities including ability to administer medications.

Ensure that the baby is stable on 6 hourly morphine or 12 hourly phenobarbitone for at least 48 hours

Ensure that all parties understand the responsibilities and that there is good social work support for the discharge plan.

Ensure that paediatric follow up is in place prior to discharge.

Summary

Stability of the mother during pregnancy is paramount – recommendations are against weaning OAT.

OAT is suitable during pregnancy (Methadone and Buprenorphine (Subutex)) and **more recently, suboxone has been deemed safe to use in pregnancy**

Suspect NAS in infants of opioid dependent mothers.

Commence scoring within 2 hours.

Do not discharge before 5-7 days as NAS can be delayed

There are many resources available for support around NAS.

References

Guidelines referenced from:

RWH: https://thewomens.r.worldssl.net/images/uploads/downloadable-records/clinical-guidelines/drug-and-alcohol-neonatal-abstinence-syndrome-NAS_160517.pdf

NSW: <https://www.slhd.nsw.gov.au/rpa/neonatal%5Ccontent/pdf/guidelines/nas.pdf>
and - https://www1.health.nsw.gov.au/pds/ActivePDSDocuments/GL2013_008.pdf

“Opioid Neonatal Abstinence Syndrome: Controversies and Implications for Practice.”
Kim Wolff and Raul Perez-Montejano – *Current Drug Abuse Reviews* 2014, 7, 44-58.

