



Starting Right: Guiding Parents in Caring for High-Risk Newborns

Angie Ridner BSN, RN
Professional Staff Development
Specialist: NICU, Pediatrics, &
Lactation
IU Health Bloomington Hospital



Objectives

At the completion of this presentation, the participant should be able to:

- Define Neonatal Abstinence Syndrome (NAS)
- Define the symptoms that are common in infants with prenatal drug exposure
- Identify a scoring tool used for the assessment of NAS symptoms, facilitating early diagnosis and treatment
- Identify non-pharmacological and pharmacological methods to reduce NAS symptoms and manage those symptoms
- Identify barriers to parental participation in care
- Identify parental education and follow-up considerations after discharge

What is Neonatal Abstinence Syndrome (NAS)

- Neonatal Abstinence Syndrome (NAS):
The withdrawal process newborns may experience after birth when exposed to controlled substances in utero.



Increasing Incidence of NAS in the US

- In the United States, an estimated one-third of childbearing women take prescription opioids.
- NAS quadrupled between 2004 and 2013, increasing hospital length of stay from 13 days to 19 days.



Risks for the Baby with NAS

- A neonate experiencing drug withdrawal is at increased risk for:
 - seizures
 - persistent vomiting and diarrhea
 - aspiration
 - dehydration and poor weight gain
 - persistent tachypnea and tachycardia
- Long-term complications, such as neurologic and physical deficits are also possible, depending on the drug and the mother's usage
 - NAS symptoms can last from one week to several months



Challenges in the Diagnosis and Treatment of NAS

- The clinical course in a neonate with NAS is difficult to predict and depends on:
 - the drug used by the mother
 - timing and amount of the drug last used
 - maternal and neonatal metabolism and excretion
- The prevalence of poly-drug use makes it even more difficult to diagnose and treat neonates experiencing withdrawal.



Drug Screening- Maternal Criteria

- Known maternal current use or history of drug use in the past three (3) years (includes illicit and prescription drug abuse)
- Maternal use of illegal drugs during any pregnancy
- Maternal self-report of: history of child abuse, neglect or court-ordered placement of children outside of the home
- Diagnosis of Hepatitis B or C, Syphilis or HIV within the last three (3) years
- Unexplained placental abruption
- Maternal behavior indicates signs/symptoms suggestive of current drug use as assessed by the medical staff or social worker
- Mother has no, late, or inconsistent prenatal care
- Rationale for ordering the screen must be documented

Drug Screening- Neonatal Criteria



- Any maternal criteria
- The infant's birth weight AND head circumference are smaller than the tenth percentile for the infant's gestational age, when there is no medical explanation for either condition
- The infant demonstrates the signs/symptoms suggestive of drug effects or withdrawal
- Social Services is notified of all positive drug screen results

Maternal Drug Abuse and NAS Symptoms

- Exposure to opioids during pregnancy causes withdrawal symptoms in 55% to 94% of exposed neonates.
 - Not all of these cases will require pharmacologic treatment.
- Withdrawal signs have also been found with exposure to cocaine, marijuana, benzodiazepines, antidepressants, barbiturates, and alcohol.



Onset of Withdrawal Symptoms

- The onset of withdrawal symptoms may vary from minutes/hours to two weeks after birth
 - The majority present within 72 hours
- Withdrawal from heroin usually begins within 24 hours of birth.
- With methadone use, symptoms usually begin 24 to 72 hours after birth.
- In general, the closer to delivery a mother takes a drug, the more severe the symptoms and the greater the delay of onset in the neonate

The Finnegan Scoring Tool

Finnegan Scoring System: An observational tool used to measure the newborn's level of signs/symptoms of substance withdrawal

- Facilitates the diagnosis of Neonatal Abstinence Syndrome (NAS)
- Lists symptoms that are most frequently observed in opiate-exposed infants.
 - Each symptom and its associated degree of severity are assigned a score
 - The total abstinence score guides treatment

Finnegan Scoring

- If the neonate is at risk for the development of NAS, a baseline score should be recorded
- Following the initial baseline score, infants are scored at 2-4 hour intervals, dependent upon severity of symptoms and treatment



Finnegan Scoring

- Central Nervous System Symptoms
 - Excessive or high pitched cry
 - Interruptions in sleep patterns
 - Hyperactive Moro reflex
 - Tremors
 - Increased muscle tone
 - Skin excoriation
 - Seizures



Finnegan Scoring

- Metabolic/Vasomotor/Respiratory System
 - Fever
 - Sweating
 - Frequent yawning
 - Nasal congestion
 - Sneezing
 - Nasal flaring
 - Increased respiratory rate



Finnegan Scoring

- Gastrointestinal Symptoms
 - Excessive sucking
 - Poor feeding quality
 - Spitting up
 - Projectile vomiting
 - Loose or watery stools



Non-Pharmacologic Treatment of NAS



- Decreasing stimulation is key!
 - Foster a quiet, dark environment
 - Swaddling the baby reduces sensory stimulation
 - Be careful not to overdress the baby due to the risk of hyperthermia
 - The baby should be held firmly to the body and gently rocked
 - No excessive patting or rocking
 - The baby should be handled gently
 - Skin-to-skin contact with the mother (if appropriate) will reduce stimulation and calm the infant

Non-Pharmacologic Treatment of NAS

- Diapers should be changed frequently to reduce the risk of diaper dermatitis and skin breakdown
 - Barrier creams are useful
- Provide frequent small-volume feedings. DO NOT OVERFEED these babies
- Suction nose prior to feedings
- Burp the neonate frequently during feedings, and monitor him for stress
- Apply mittens to the neonate's hands or provide a pacifier if he's continually sucking on his fists

Pharmacologic Treatment of NAS

- Used to relieve moderate-severe symptoms and prevent complications such as weight loss, fever, and seizures
- Used when indicated by Finnegan scoring, seizures, and/or weight loss as ordered by a provider
- Medications are weaned over a period of time as scores decrease
- Usual medication for NAS management is morphine
 - May add phenobarbital

Family Considerations and Support- Breastfeeding

- Mothers taking illegal street drugs should NOT breastfeed
- Mothers on Suboxone/Subutex or Methadone may continue to breastfeed (with approval of baby's provider)
 - Breastfeeding is associated with
 - Less severe NAS
 - Delayed presentation of symptoms
 - Less frequently requires pharmacologic intervention
 - Mothers should not be encouraged to stop breastfeeding suddenly
 - Baby will withdraw
 - When they are ready to wean the baby, mothers should first consult with the baby's provider

Family Considerations and Support During NICU Stay

- If the mother will be the primary caregiver at home, support and resources are needed to help her succeed once discharged
 - Foster bonding and attachment
 - Encouraging and facilitating touch will assist mothers to attach emotionally to the infant
 - Mother should be told that the infant's behavior is not a rejection of her
 - Potential to prevent NAS symptoms
 - Clear information and specific guidelines are provided for the expected behavior of both mother and infant
 - Positive reinforcement and immediate feedback



Family Education and Support During NICU Stay

- During the hospital stay, parents are provided education regarding:
 - Signs and symptoms of NAS to watch for and report to the provider
 - Ways to manage symptoms of NAS
 - How to feed baby (avoid over-feeding, frequent burping, suctioning nose prior to feedings)
 - Avoid overheating
 - How to comfort their crying baby
 - Ways to reduce stimulation in the environment
 - Managing diaper dermatitis
 - Learning their baby's cues

Family Education and Support During NICU Stay

- Educate parents/caregivers on safe sleep practices
 - Risk for Sudden Unexplained Infant Death is 5-10 times greater if:
 - The neonate has had a difficult course of NAS
 - Mother has used multiple drugs
 - When a combination of drugs has been needed to treat the neonate



- Goal is to teach these skills while parents have the support of NICU staff

Barriers to Family Involvement

- Dependence/Withdrawal issues
- Fear of the child being removed from home
 - Fear of DCS
 - Legal concerns
- Domestic violence
- Other children to care for at home
- Anxiety/depression
- Treatment access for parents
- Cultural/ language barriers
- Economic concerns/limited resources

The Role of Social Services in NAS Management

- Social Services is involved in all NAS cases
 - Babies with NAS may be referred for therapy services
 - Newborn Developmental Follow-Up Clinic
 - First Steps
 - Other services/referrals
 - Healthy Families
 - Hannah Center
 - All Options
 - WIC



The Role of Social Services in NAS Management

- DCS referral
 - if it cannot be verified that the mother is in a treatment program
 - if the mother has used illegal or non-prescribed drugs during pregnancy
- Social worker contacts case manager at pediatric office to flag patient
 - Chart is flagged by case manager in office EHR
 - Notes are viewed by provider and nurse upon intake

Discharge Communication

- Prior to discharge, the Neonatologist or Neonatal Nurse Practitioner calls the baby's primary health care provider for a phone consultation
- Discharge instructions are sent electronically to baby's provider



Considerations for Outpatient Follow-Up

- Acute symptoms of NAS may persist for several weeks
- Subacute symptoms may persist for 4-6 months
 - Irritability
 - Sleep disturbances
 - Hyperactivity
 - Feeding problems
 - Hypertonia (increased tone)
- Important for primary care physician and staff to obtain thorough medical history

Parental Support/Education in Office

- Babies with NAS
 - Are less “cuddly”
 - Irritable
 - Less responsive to visual stimulation
 - Less likely to make eye contact
 - Less likely to maintain a quiet-awake state
- Constant sucking and rooting may lead to over-feeding
- Stress the importance of good diaper hygiene
- Continue to decrease stimulation at home
- Do not over-dress baby
- Identify support system
 - These babies are extremely difficult to console
 - Parents need respite to reduce the risk of abuse



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