

1.18 NEONATAL ABSTINENCE SYNDROME/ NEONATAL OPIOID WITHDRAWAL SYNDROME

Introduction

Neonatal abstinence syndrome (NAS), also referred to as Neonatal Opioid Withdrawal Syndrome, is the constellation of opioid withdrawal symptoms exhibited by newborns that have been exposed to opioid medications in utero. The incidence of NAS has increased dramatically over the past two decades, such that a baby at risk for NAS is born every 15 minutes in the United States. Neonatal abstinence syndrome symptoms typically begin between 24 and 96 hours of life and manifest as disturbances in the central nervous system, autonomic nervous system, and gastrointestinal system. During the birth hospitalization, many newborns with NAS receive care from pediatric hospitalists in Level 1 nurseries and/or on pediatric units. Pediatric hospitalists must therefore be equipped both to provide coordinated acute care and to develop an integrated transition plan for post-discharge care.

Knowledge

Pediatric hospitalists should be able to:

- Describe the physiology of NAS due to maternal use of prescribed or illicit, long- or short-acting opioid medications.
- Describe newborn risk factors for NAS, such as the maternal history, medication list, and toxicology laboratory results.
- List common symptoms and exam findings in NAS, such as central nervous system, autonomic nervous system, and gastrointestinal system withdrawal effects.
- Compare and contrast items on the differential diagnosis for NAS, including sepsis, hypoglycemia, electrolyte abnormalities, tobacco withdrawal, and maternal antidepressant use.
- List the available maternal and infant toxicology screening and confirmatory tests, including those from the urine, meconium, and umbilical cord tissue.
- Cite the importance of using a standardized NAS symptom severity tool to assess newborn withdrawal severity.
- Discuss the elements of appropriate non-pharmacologic care, including rooming-in, skin-to-skin, swaddling, breastfeeding, and a calm environment.
- Explain when and how to initiate and taper pharmacologic treatment of NAS with an opioid medication.
- List the indications for initiation of adjunct medications such as clonidine.
- Discuss special considerations for nutritional support in NAS, including determining when breastfeeding is or is not recommended and when additional caloric supplementation is needed.
- Describe local laws governing reporting to child protective services in cases of NAS and discuss indications for referral.
- Cite reasons for continued hospitalization, such as persistent and substantial withdrawal symptoms or poor weight gain.
- List criteria for hospital discharge, including withdrawal that can be controlled in the home setting with or without continued pharmacotherapy, adequate oral intake and weight

gain, safe home environment, and a follow up plan with a primary care provider.

- Discuss the role of various community support services in the care of newborns with NAS and their family/caregivers, such as substance abuse treatment programs, home visitation programs, parenting resources, and maternal-child nutrition programs.

Skills

Pediatric hospitalists should be able to:

- Identify newborns at risk for NAS based on maternal history, medication list, and toxicology testing.
- Perform a physical examination specifically assessing for signs of opioid withdrawal, regardless of presence of risk factors.
- Use a standardized NAS symptom severity tool to assess the severity of newborn withdrawal symptoms.
- Order and interpret toxicology tests.
- Initiate non-pharmacologic care for all newborns at risk for NAS.
- Perform daily, comprehensive reassessments of newborns with NAS.
- Describe indications for initiating pharmacologic treatment for NAS with a standard opioid and/or adjunct medications at the correct dose and dosing interval.
- Identify indications for weaning pharmacologic treatment for NAS, including lower and stable standardized scores and normal newborn physiologic functioning.
- Coordinate care with other providers, including social work, nutrition, lactation services, and speech therapy.
- Identify severe or unusual NAS that requires consultation with a neonatologist, including NAS symptoms not controlled by standard therapy, ongoing weight loss, seizures, respiratory distress, or serious consequences of other drugs of abuse.
- Assess readiness of newborn and family for discharge, including caretaker ability to control withdrawal symptoms in the home setting and establishment of a safe home environment.
- Coordinate comprehensive discharge plans with primary care providers, home care agencies, community support services, early intervention programs, and child protection agencies as appropriate.

Attitudes

Pediatric hospitalists should be able to:

- Appreciate the role of the family/caregivers, nurses, and other professional staff in providing non-pharmacologic care for newborns with NAS and empower them to assume this role.
- Exemplify family-centered communication that is trauma-informed and sensitive to the needs of parents and the family/caregivers in different stages of addiction and recovery.
- Appreciate the impact of newborn opioid exposure on neonates, mothers, the family/caregivers, communities, and the health care system.
- Contextualize NAS within the broader opioid epidemic.

Systems Organization and Improvement

In order to improve efficiency and quality within their organizations, pediatric hospitalists should:

- Collaborate with colleagues in obstetrics, midwifery, and other disciplines to provide comprehensive care for mothers with substance use disorders and newborns with NAS throughout the perinatal continuum.
- Advocate for appropriate health system resources to provide family-centered, high-value care to opioid-exposed newborns and their family/caregivers.
- Lead, coordinate, or participate in the development and implementation of clinical care pathways to standardize the evaluation and management of newborns that have been exposed to opioids in utero.

- Lead, coordinate, or participate in education programs for the family/caregivers and the community to increase awareness of the opioid epidemic, emphasizing the role of the family/caregivers and community members in supporting newborns with NAS.
- Engage in public policy discussions and legislative advocacy related to the opioid epidemic and NAS.

References

1. Devlin LA, Davis JM. A Practical Approach to Neonatal Opiate Withdrawal Syndrome. *Am J Perinatol.* 2018;35:324-330. <https://doi.org/10.1055/s-0037-1608630>.
2. Tolia VN, Patrick SW, Bennett MM, et al. Increasing incidence of the neonatal abstinence syndrome in U.S. neonatal ICUs. *N Engl J Med.* 2015;372:2118-2126. <https://doi.org/10.1056/NEJMsa1500439>.