Neonatal Abstinence Syndrome (NAS)

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Expanded Commentary from the Faculty

Illicit drug, alcohol, and tobacco use are common among pregnant women in the United States. Data from the 2013 National Survey on Drug Use and Health found that among pregnant women aged 15 to 44:

- 5.4% were current illicit drug users (using marijuana, cocaine, heroin, hallucinogens, inhalants, prescription-type pain relievers, tranquilizers, stimulants, and/or sedatives);
- 9.4% drank alcohol; and
- 15.4% smoked cigarettes.[1]

Intrauterine exposure to opioids is the most common cause of neonatal abstinence syndrome (NAS).[2,3] It is estimated that between 55% and 94% of infants exposed to opioids in utero will develop withdrawal signs.[3]

Withdrawal from opioids after birth rarely causes death, but can precipitate significant morbidity for the newborn, extend the hospital stay, require more treatment, and inhibit mother-child bonding. Typically, withdrawal signs and symptoms worsen as drug levels in the neonate decrease.[3]

The sooner NAS is detected in an infant, the sooner nonpharmacologic and pharmacologic management (eg, morphine, methadone, buprenorphine, phenobarbital, clonidine) can begin, and the less distress babies will experience.

Signs and symptoms of NAS typically affect the central nervous system (CNS), gastrointestinal (GI), and autonomic systems:

- CNS: Tremors, irritability, high-pitched crying, sleep-wake abnormalities, frequent yawning and sneezing, and seizures;
- GI: Poor feeding or sucking capability, excessive sucking, vomiting, diarrhea, dehydration, failure to gain weight, or weight loss;
- Autonomic: Fever, temperature instability, sweating, stuffy nose, and mottling.[2-4]

Mothers must be handled with sensitivity and without judgment, and attempts should be made to include them in the care of the infant as much as possible (eg, feeding, bathing). Most mothers will feel significant guilt and shame about their substance use during pregnancy and the impact it has on their infant. Cleveland and Bonugli, who surveyed mothers of infants with NAS in the neonatal intensive care unit (NICU), reported that "Feeling judged interfered with the participants' ability to trust the nurses."[5] In another publication, Cleveland et al noted that "the quality of the relationship between mothers and the nurses in the NICU was a crucial aspect of the mothers' experiences and may have an effect on long-term outcomes."[6]

Tools for assessment of the severity of withdrawal symptoms in the newborn include the Lipsitz tool and the Modified Finnegan Neonatal Abstinence Scoring Tool. The Finnegan system appears to be the most commonly used tool in clinical practice.[2] Whatever tool is employed, clinicians should be educated to use it consistently and correctly to achieve the highest standard of care.

Use of a defined protocol to detect, monitor, and manage newborns with NAS in the NICU has been shown to result in better outcomes—reducing the duration of opioid treatment exposure after birth and decreasing the length of the hospital stay.[7]

Communication among staff members and departments is essential to appropriately managing NAS. Postpartum and Labor and Delivery nurses should be educated about the signs and symptoms of NAS so they can implement early interventions and communicate patient findings and histories to NICU staff members. Likewise, NICU staff members should be educated on NAS evidence-based clinical practice guidelines and tools.

In turn, parents should be educated about likely behaviors to expect from newborns experiencing NAS. For instance, these babies may fuss and be unable to cuddle as expected, and parents may find this creates a barrier to bonding and adds to the difficulty of caring for the infants after discharge.

Group Discussion Items

- Do we commonly encounter babies with NAS in our institution?
- What is our protocol to manage these babies?
- What NAS scoring tool do we use in our institution? What is our procedure for using this tool?
- Have we discussed strategies for interacting with mothers of babies with NAS?
- Does the information in this clinical pearl reinforce our current practice?
- If we were to implement or adopt this clinical pearl, what would we do first?
- What are the barriers to adopting this clinical pearl in our institution?
- Are there other problems we have not talked about?

Suggested Readings and Resources

1. Substance Abuse and Mental Health Services Administration. *Results from the 2013 National Survey on Drug Use and Health: Summary of National Findings.* 2013. Available at: http://www.samhsa.gov/data/sites/default/files/NSDUHresultsPDFWHTML2013/Web/NSDUHresults2013.pdf. Accessed December 18, 2014.

2. Siu A, Robinson CA. Neonatal abstinence syndrome: Essentials for the practitioner. *J Pediatr Pharmacol Ther.* 2014;19:147-155.

3. Hudak ML, Tan RC, The Committee on Drugs, and The Committee on Fetus and Newborn. Neonatal drug withdrawal. *Pediatrics.* 2012;129:e540-e560.

4. Osborn DA, Jeffery HE, Cole MJ. Opiate treatment for withdrawal in newborn infants. *Cochrane Database Syst Reve.* 2010;10:CD002059.

5. Cleveland LM, Bonugli R. Experiences of mothers of infants with neonatal abstinence syndrome in the neonatal intensive care unit. *J Obstet Gynecol Neonatal Nurs.* 2014;43:318-329.

6. Cleveland LM, Gill SL. "Try not to judge": Mothers of substance exposed infants. *MCN Am J Matern Child Nurs.* 2013;38:200-205.

7. Hall ES, Wexelblatt SL, Crowley M, et al. A multicenter cohort study of treatments and hospital outcomes in neonatal abstinence syndrome. *Pediatrics.* 2014;134:e527-e534.

8. Gardner SL, Carter BS, Enzman-Hines MI, Hernandez JA. *Merenstein & Gardner's Handbook of Neonatal Intensive Care.* New York, NY: Elsevier Health Sciences, 7th ed, 2010.

9. AWHONN, Verklan MT, Walden M. *Core Curriculum for Neonatal Intensive Care Nursing,* 5th ed. New York, NY: Elsevier Health Sciences, 2014.