



Raising Awareness Concerning Neonatal Abstinence Syndrome Prevalence and Effects



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Abstract

Neonatal abstinence syndrome (NAS) is a condition effecting newborns withdrawing from drugs and alcohol after birth (Stanford Children's Health, 2016). Incidences of NAS are becoming increasingly more prevalent across the United States (Winkelman, Villapiano, Kozhimannil, Davis, & Patrick, 2018).

In light of the rising number of cases regarding NAS, nurses are being required to update their knowledge on the effects and treatments of drug and alcohol withdrawal in neonates. It is imperative that healthcare professionals keep up with the demands this condition continues to present. Nurses working in the area of maternal-fetal care must familiarize themselves with the early clinical signs of neonatal abstinence syndrome to promote the best possible outcome for newborns.

Prevalence

Approximately 14.4 per 1,000 babies were born addicted to drugs or alcohol in the United States in the year 2014 (Winkelman et al., 2018). Furthermore, every 25 minutes an infant is born with NAS (Centers for Disease Prevention and Management, 2017). Contributing to the rising numbers of infants born with neonatal abstinence syndrome are the ever-increasing rates of individuals abusing drugs and alcohol while pregnant (Wiles, Isemann, Ward, Vinks, & Akinbi, 2014). Therefore, it has become extremely important for nurses working within this population to educate themselves both on the signs and symptoms of NAS, as well as treatments. The incidence of NAS has tripled nationally, affecting 47-57% of infants born to mothers on methadone or buprenorphine maintenance therapy (Wiles et al., 2014).

Cost

In addition to an increased prevalence of NAS, cost of neonatal abstinence syndrome has been on the rise. Medicaid is the primary payer of the NAS births and hospital stays. In fact, Medicaid paid for approximately 73.7% of NAS births in the year 2004 (Winkelman et al., 2018). Then, in 2014, 82% of NAS births were paid for by Medicaid (Winkelman et al., 2018). In 2011, in the state of Ohio alone, approximately \$70 million was spent on the treatment of NAS within the hospital setting (Witt, C. E., Rudd, K. E., Rivara, P. F., Hawes, S. E., & Weiss, N. S., 2017). Other hospital costs which are paid for by Medicaid include testing for drug use in pregnant women. Urine, meconium and umbilical cord tissue are the three main methods of testing in these situations (Wiles et al., 2014). Although each of these tests are similar in price, costing \$300-550, \$250-500, and \$400-800, they are crucial in the primary detection of detecting the potential of NAS early on (Wiles et al., 2014).

Additional Risk Factors & Effects

There are several additional factors that impact a baby born with NAS (Wiles et al., 2014). These risk factors may include:

- Lack of prenatal care
- Premature delivery
- Sexually transmitted infections
- Hepatitis C virus
- Human immunodeficiency virus (HIV)
- Cigarette smoking
- Fetal intrauterine growth restriction
- Poor maternal nutritional status

Neonatal babies experience immediate effects of withdrawals once born. These immediate effects can be neurological, gastrointestinal, autonomic signs, respiratory distress, and skin excoriation (Winkelman et al., 2018). These immediate effects are seen evident in the video titled *Incidence and Cost of Neonatal Abstinence Syndrome is Rising* (Winkelman et al., 2018).

According to Wiles et al., there has also been evidence of long term effects for those born with NAS. Researchers have noted an increased risk of readmission to the hospital during the first five years of a child's life (Wiles et al., 2014).

Clinical Manifestations

Opiates

- Rapid changes in mood
- Hypersensitivity to noise and external stimuli
- Dehydration
- Poor weight gain

Heroin

- Low birth weight and SGA
- Decreased Moro reflexes
- Hypothermia/Hyperthermia

Methadone

- Increased incidence of seizures
- Higher risk of sudden infant death syndrome
- Higher birth weight
- Sleep pattern disturbances

Amphetamine

- Preterm or SGA
- Drowsiness
- Jitteriness
- Sleep pattern disturbances
- Respiratory distress
- Frequent infections
- Poor weight gain
- Emotional disturbances
- Delayed growth & development

Marijuana

- Preterm birth
- Meconium staining

Fetal Alcohol Syndrome

- Facial anomalies: mouth with small suck, small teeth, cleft lip or palate
- Prenatal and postnatal growth retardation
- Abnormal palmar creases and irregular hair
- Developmental delays and neurologic abnormalities
- Deafness
- Sleep disturbances
- Many vital organ anomalies

Tobacco

- Prematurity
- Low birth weight
- Increased risk for sudden infant death syndrome
- Increased risk for bronchitis
- Pneumonia
- Developmental delays

Nursing Considerations

- Assess/monitor IV site frequently.
- Check for medication incompatibilities.
- Reduce external stimuli.
- Swaddle the newborn to reduce self-stimulation and protect the skin from abrasions.
- Administer frequent, small feeding of high-calorie formula-may need gavage feedings.
- Elevate the infant's head during and followings feedings and burp the infant to reduce vomiting and aspiration.
- Trying various nipples to compensate for a poor suck reflex.
- Have suction available to reduce the risk for aspiration.
- For newborns who are addicted to cocaine, avoid eye contact and use vertical rocking and a pacifier.
- Prevent Infection.
- Initiate a consult with child protective services.
- Consult lactation services to evaluate if breastfeeding is contraindicated or desired.



References

- Centers for Disease Control and Prevention. (2017, August 01). Morbidity and Mortality Weekly Report (MMWR). Retrieved from <https://www.cdc.gov/mmwr/volumes/66/wr/mm6609a2.htm>
- Sommer, S., Johnson, J., Roberts, K., Redding, S., Churchill, L. (2013). RN Maternal Newborn Nursing (RN edition 9.0). Assessment Technologies Institute, LLC.
- Stanford Children's Health. (2016). Neonatal abstinence syndrome. Retrieved from: <http://www.stanfordchildrens.org/en/topic/default?id=neonatal-abstinence-syndrome-90-P02387>
- Wiles, J. R., Isemann, B., Ward, L. P., Vinks, A. A., & Akinbi, H. (2014). Current Management of Neonatal Abstinence Syndrome Secondary to Intrauterine Opioid Exposure. *The Journal of Pediatrics*, 165(3), 440-446. <http://doi.org/10.1016/j.jpeds.2014.05.010>
- Winkelman, T. N., Villapiano, N., Kozhimannil, K. B., Davis, N. M., Patrick, S. W., Incidence & Cost of Neonatal abstinence syndrome among infants with Medicaid: 2004-2014, Pediatrics Published Online: March 23, 2018 (doi:10.1542/peds.2017-3420). Funded by NIDA K23DA03720.
- Witt, C. E., Rudd, K. E., Rivara, P. F., Hawes, S. E., & Weiss, N. S. (2017). Neonatal abstinence syndrome and early childhood morbidity and mortality in Washington state: a retrospective cohort study. Retrieved from: <https://www.nature.com/articles/jp2017106>