



28 Days



Management of Neonatal Abstinence Syndrome in the Newborn Nursery

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Consider the following scenario: You're a nurse assigned to the Mother/Baby Unit today. During team rounds with the pediatrician, you identify that one of the couplet assignments includes a mother enrolled in a methadone program whose newborn is now exhibiting signs of withdrawal. Presently the infant is scoring for high pitch of cry, short sleeping cycles and tremulous activity of extremities.

As a maternal-child nurse, you recognize the epidemic surfacing in the United States of maternal drug use during pregnancy. Studies

during 2000 to 2009 revealed the annual rate of neonatal abstinence syndrome (NAS) diagnosis increased almost threefold and maternal opiate use increased approximately fivefold (Kellogg, Rose, Harms, & Watson, 2011). Use or abuse of prescribed pain medications, illicit drugs and selective serotonin reuptake inhibitors (SSRIs) can potentially expose a fetus or newborn to harm. Substance use during pregnancy is associated with birth defects, low birth weight, premature birth, NAS, seizures, alterations in brain organization and neurobehavioral/cognitive deficits (Bada et al., 2005).

Abstract Maternal drug use and neonatal abstinence syndrome (NAS) are being seen across the United States. NAS occurs with withdrawal disturbances in response to the cessation of the pregnancy exposure. The clinical presentation of a newborn with NAS can include gastrointestinal, neurologic, vasomotor and respiratory symptoms. Assessment of newborns with NAS can often present as a challenge to maternal-child nurses. Treatment can include supportive care as well as pharmacologic therapies. DOI: 10.1111/j.1751-486X.12163

Keywords maternal drug use | neonatal abstinence syndrome | non-opioid | opioid | SSRI



Effects of Drug Exposure in Utero

The long-term effects of NAS have been difficult to evaluate due to the limited research opportunities to longitudinally study outcomes in these offspring. Newborns with NAS may exhibit abnormal behaviors until 6 to 9 months of age. Prenatal drug exposure appears to be associated with effects on neurobehavioral, cognitive and language function (Behnke, Smith, & Committee on Substance Abuse, 2013). On the other hand, recent research suggests that the effects of drug exposure with serious impairments developmentally may not be as profound as first thought (Kim & Krall, 2006). In fact, while

The clinical presentation of a newborn with NAS is influenced by many factors

methods of research conducted vary, it's noted that an infant's home environment may have a stronger influence on developmental outcomes than any prenatal drug exposure (Bandstra, Morrow, Mansoor, & Accornero, 2010).

Maternal Drug Use

While NAS is seen most often in women with opioid dependency, there are nonopioid drugs that can also cause withdrawal in newborns (Kellogg et al., 2011). Opioid dependence is seen with opiates, semisynthetic opiates and synthetic narcotics. Nonopioid drug classes include central nervous system (CNS) depressants, CNS stimulants and hallucinogens (see Box 1).

SSRIs are commonly used for the management of depression and anxiety in pregnant women. SSRI use during the last trimester of pregnancy has been associated with symptoms in neonates very similar to clinical signs of NAS (Alwan & Friedman, 2009; Galbally, Lewis, Lum, & Buist, 2009). The onset of clinical signs for infants exposed to SSRIs range from several hours after birth to several days after birth, with symptomatology lasting 1 to 2 weeks after birth.

“Designer” drugs commonly used by pregnant women include cocaine, marijuana, LSD, methamphetamines and ecstasy. Depending on fetal exposure, these newborns will exhibit temporary symptoms, such as irritability, tremors

Box 1.

Common Categories of Drugs

Opioids

- Morphine
- Codeine
- Opium
- Hydromorphone

Semisynthetic Opioids

- Heroin
- Oxycodone (Percodan, Percocet, OxyContin)
- Darvon (fully synthetic opioid)

Synthetic Narcotics

- Methadone
- Hydrocodone (Vicodin)
- Buprenorphine
- Fentanyl
- Meperidine (Demerol)
- Tramadol, Talwin

CNS Depressants

- Benzodiazepines
- Barbiturates
- Cannabinoids
- Alcohol
- Marijuana
- Quaaludes

CNS Stimulants

- Amphetamines
- Cocaine
- Methamphetamines
- Nicotine

SSRIs

- Citalopram
- Escitalopram
- Fluoxetine
- Paroxetine
- Sertraline
- Fluvoxamine

Hallucinogens

- LSD
- Nitrites
- Solvents and aerosols
- Inhalants
- Mescaline
- MDA

Source: Hudak, Tan, The Committee on Drugs, and The Committee on Fetus and Newborn (2012).

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