NURSING CARE FOR THE INFANT WITH NEONATAL ABSTINENCE SYNDROME
Learning Objectives

• Discuss the increased incidences of maternal opioid use
• Learner will describe the mechanism and clinical presentation of NAS
• Learner will describe scoring tools for NAS
• Learner will recognize recommended pharmacologic treatment for NAS
• Learner will describe nursing interventions for patients with NAS
• Learner will describe teaching points for parents
Maternal Drug Use & NAS – Growing Epidemic

- Over 238 million prescriptions were written for opioid analgesics in 2011. 1.1% of pregnant women abused opioids with 0.9% being opioid pain relievers and 0.2% heroin. (Substance Abuse and Mental Health Services Administration, 2011)

- In a national study, maternal opioid use was shown to have increased:
  - 1.2% mothers per 1000 births in 2000 to 5.6% mothers per 1000 births in 2009
  - Between 2014 – 2015 NAS exposed infants increased from 7.6 to 7.9 per 1000 births.
  - Total economic burden totaled over 1 billion nationally in 2015
Maternal Drug Use & NAS – Growing Epidemic

- Increased incidence of NAS has been uniformly reported across community hospitals, teaching hospitals and children’s hospitals.
- NAS affects all communities and ethnicities
- APP recommends:
  - All nurseries caring for infants with NAS, develop guidelines for screening for maternal substance abuse
  - Formulate standard plans of care to identify newborns at risk and manage their care
What is Neonatal Abstinence Syndrome (NAS)

• Generalized multi-system disorder that predominately involves the central and autonomic nervous system as well the gastrointestinal tract. Infants exposed to opioids/narcotics during gestation will begin experiencing withdrawal with the abrupt cessation of these substances after birth

• What makes them susceptible

• First case documented in 1875

• Effects of NAS
  • Economic
  • Long-term
Diagnosis

- Comprehensive prenatal medical and drug history, especially in respect to polydrug abuse
- R/O other conditions
- Laboratory data
  - Serum glucose
  - Serum calcium/magnesium
  - Urine test for toxicology
  - Meconium drug analysis
Diagnosis cont’d

• Observation for common signs/symptoms associated with NAS

• Presentation of symptoms:
  • Shortly after birth and up to 2 weeks of age
  • Majority are exhibited with 36-72 hours
  • Severity of symptoms depends on multiple factors
## Signs & Symptoms of NAS

### COMMON SIGN & SYMPTOMS OF NAS

<table>
<thead>
<tr>
<th>Neurologic Excitability</th>
<th>GI Dysfunction</th>
<th>Autonomic Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tremors</td>
<td>Poor feeding</td>
<td>Increased sweating</td>
</tr>
<tr>
<td>Irritability</td>
<td>Uncoordinated and constant sucking</td>
<td>Nasal stuffiness</td>
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Abstinence Scoring Tools

- Observer reported questionnaires used for assessing severity of withdrawal, determining need and duration and titration of pharmacologic therapy.
- Finnegan Neonatal Abstinence Scoring Tool (FNAST)
- Eat, Sleep, Console
Finnegan Neonatal Abstinence Scoring Tool (FNAST)

- Most widely used and accepted tool
- Recommended by APP
Finnegan Neonatal Abstinence Scoring Tool (FNAST)

- Limitations of the tool
  - Reliability & Validity
  - Complexity
Eat, Sleep, Console (ESC)

- Developed in 2017, program to manage NAS based upon the neonate’s ability to function
- Less complex
- Evaluates 3 criteria:
  - Empowers parents
  - Administration of Morphine

```
  Can infant eat ≥1 ounce per feed or breastfeed well?
    No
    Can infant sleep ≥1 hour?
      No
      Nonpharmacologic interventions increased if possible:
      - Feeding on demand
      - Swaddling and holding
      - Low-stimulation environment
      - Parental presence
      Yes
      Can infant be consoled within 10 minutes?
        No
        Start morphine at 0.05 mg/kg per dose every 3 hours or increase dosing by 0.01 mg/kg per dose
        Yes
        Infant is considered to be well managed and no further interventions are necessary
        Yes
```
Eat, Sleep, Console (ESC)

Research on ESC has shown:

- Average length of stay ↓ from 22.4 to 5.9 d
- Pharmacologic treatment with Morphine ↓ from 98% to 14%
- Costs ↓ from $44,824 to $10,289 per patient
Pharmacologic Management

- **Oral Morphine**
  - First line choice in majority of NICUs
  - Short half-life – administered Q 3-4 hours
  - Improves feeding, eliminates diarrhea, ↓agitation
  - Prolongs hospital stay

- **Oral Methadone**
  - 15% of NICUs use as first line
  - Alternative to Morphine
  - Long half life – can only be administered twice per day

- **Phenobarbital**
  - Drug of choice for non-opiate NAS/polydrug use
  - Often used as adjunct to Morphine or Methadone
  - Effective in controlling irritability and insomnia

- **Oral Clonadine**
  - Decreases symptoms such as tachycardia, hypertension, diaphoresis, restlessness and diarrhea
  - Cessation of treatment can result in a rebound of these symptoms.
Breastfeeding and NAS

- Infants with Methadone- or Buprenorphine-dependent mothers has been identified as safe and beneficial regardless of dose
- Lactation Support
- Contraindication
Parental Presence

“The goals of care should be patient- and family- centered. It is the patient we treat, but it is the family of whatever construct, with whom the baby will go home. Indeed, it is the family who must live with the long-term consequences of our daily decisions in caring for their baby.” (Brian Carter – Merenstein & Gardner’s Handbook of Neonatal Intensive Care)

• Positive impact

• Importance of positive nurse-parent relationship
Non-Pharmacologic Interventions

- Rooming-In
- ↓ Stimulation
- Safe swaddling
- Developmental Positioning
- Vertical rockers
- Music, massage and aromatherapy
Parent Teaching

- Symptoms may persist for 2-6 months
- Importance of second caregiver
- Safe Sleep education
- Importance of follow-up with primary physician
- Provide information on community based support systems
QUESTIONS?
References


References continued


