Reducing Opioid Exposure for Withdrawing Infants

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Background

- Opioid use in pregnant women contributes to neonatal abstinence syndrome (NAS) and postnatal opioid exposure
- Nonpharmacologic interventions such as swaddling, pacifiers, low simulation, and low lights reduce infant withdrawal symptoms
- At a large Midwest hospital infants are currently assessed for withdrawal symptoms and managed by giving opioids
- Little attention is paid to nonpharmacologic interventions
- Eat Sleep Console is an evidence-based protocol that uses nonpharmacologic interventions before giving opioids to manage withdrawal
- A culture shift away from giving opioids prior to the use of nonpharmacologic interventions to eliminate symptoms of NAS is recommended
- Educating postpartum and neonatal intensive care unit (NICU) nurses on nonpharmacologic interventions as routine care is the first step in transitioning to the full Eat Sleep Console protocol

Purpose

- Educate nurses on the use of nonpharmacologic interventions to reduce symptoms in infants with neonatal abstinence syndrome

Outcome Objectives

- Increase nurses’ use of nonpharmacologic interventions to manage neonatal drug withdrawal
- Reduce the number of opioid doses given to infants
- Reduce infant hospital length of stay

Framework

Rosswurm and Larrabee’s Model for Evidence-based Practice

Evaluate need for change

Locate best evidence

Analyze best evidence

Design practice change

Implement change

Maintain change

Methods

Design

- A survey was used to identify gaps in nurses’ knowledge of neonatal abstinence syndrome
- Survey results informed development of an educational poster
- Chart review for 17 infants pre-education intervention and 17 post-education intervention

Educational Poster Intervention

- There are multiple ways to manage care for withdrawing infants:
  - The American Academy of Pediatrics Neonatal Abstinence Scoring System
  - A current assessment tool
  - Eat, Sleep, Console:
    - Emphasizes nonpharmacologic interventions before PRN opioids
    - Simplified discharge goals: eat, sleep, well, sleep, and console
    - Reduces length of stay and neonatal opioid exposure
  - Prospective NAS management tool for MGH

Nurses’ ability to identify 6-8 nonpharmacologic interventions

Nurses’ confidence in educating caregivers about nonpharmacologic interventions to prepare for discharge

Nonpharmacologic Care Documentation

Settings and Participants

- Large Midwest hospital with 5,000 births annually
- 157 Postpartum and NICU nurses who care for withdrawing infants

Infant Characteristics and Outcomes Pre- and Post-Educational Program (n=34)

<table>
<thead>
<tr>
<th>Infant Characteristics</th>
<th>M Pre (n=17)</th>
<th>[min.-max.]</th>
<th>M Post (n=17)</th>
<th>[min.-max.]</th>
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</thead>
<tbody>
<tr>
<td>Birth Weight (g)</td>
<td>3228</td>
<td>[2000-4070]</td>
<td>3235.88</td>
<td>[2680-3830]</td>
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<tr>
<td>Birth Gestation (days)</td>
<td>273.47</td>
<td>[252-287]</td>
<td>267.12</td>
<td>[252-287]</td>
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<tr>
<td>Nonpharmacologic</td>
<td>1.71</td>
<td>[1.00-3.68]</td>
<td>3.65</td>
<td>[1.00-6.25]</td>
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<tr>
<td>Doses</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Total Doses of Methadone</td>
<td>2.24</td>
<td>[0.00-38.00]</td>
<td>1.06</td>
<td>[0.00-18.00]</td>
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<tr>
<td>Total Doses of Morphine</td>
<td>19.94</td>
<td>[0.00-236.00]</td>
<td>7.41</td>
<td>[0.00-72.00]</td>
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<tr>
<td>Length of Stay (hours)</td>
<td>212.44</td>
<td>[53.18-775.32]</td>
<td>158.07</td>
<td>[45.98-446.42]</td>
</tr>
</tbody>
</table>

Results

- 63% (99/157) of RNs responded to electronic nurse knowledge questionnaire
- Infant birth weight (g), birth gestation (days)
- The average number of nonpharmacologic interventions documented per 12-hour shift over length of stay
- The cumulative number of opioid doses that each infant received during their hospital stay
- Hospital length of stay (hours)

Conclusions

- Educating nurses and modifying the EMR to facilitate nonpharmacologic interventions shifts the management strategy toward nonpharmacologic interventions as first-line treatment for infants with neonatal abstinence syndrome
- Increasing nonpharmacologic interventions may reduce overall opioid doses infants with NAS receive while hospitalized and may reduce hospital length of stay
- The next step is to adopt Eat Sleep Console for withdrawing infants to further reduce neonatal opioid exposure