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Managing NAS Scores with Non-Pharmacological Methods

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Background/Significance

- Admission to the Neonatal Intensive Care Unit (NICU) can be stressful for parents and costly to the hospital. Our goal was to determine what non-pharmacologic methods were available and could be initiated on the Mother-Baby Unit (MBU) for term infants with Neonatal Abstinence Syndrome (NAS). We wanted to determine if initiating these methods could ultimately delay admission(s) to NICU. If MBU nurses are able to maintain Finnegan Scores within normal limits for longer periods, this would allow the infant to remain with parents, which would promote bonding and reduce parental stress. Cost reduction would also be a benefit.

PICO QUESTION

- Can term infants exposed to intrauterine maternal opiate addiction benefit from non-pharmacological methods to manage Finnegan scoring within normal limits and delay NICU admission(s)?
- P - Term infants exposed to intrauterine maternal opiate addiction.
- I – non-pharmacological interventions.
- C – Routine Care.
- O - Management of Finnegan scoring within normal limits (less than or equal to 8) with delayed admission to NICU.

TRIGGER?

- Knowledge v. Problem
 - Knowledge Focused Trigger –
 1. New Research and other literature
 2. Organizational Standards and Guidelines.
 - A large portion of research regarding non-pharmacologic measures for NAS infants has been retrospective. By reviewing the current practice standards and comparing them to the most recent evidence based data, current guidelines and practices can be modified to improve patient outcomes.

EVIDENCE

- CINAHL was the search engine used almost exclusively to gather research articles.
- Key words included: neonatal abstinence syndrome, term infants, non – pharmacologic interventions.

EVIDENCE

- **Background:** 4.5% of pregnant women 15 to 44 year of age reported recent use of illicit drugs. Among neonates exposed to opioids in utero, withdrawal signs will develop in 55% to 94%
- **Clinical Presentation:** CNS irritability, autonomic overreactivity, and gastrointestinal tract dysfunction. Excess environmental stimuli and hunger will exacerbate the perceived severity of NAS. Onset of signs attributable to neonatal withdrawal often beings within 24 hours of birth, withdrawal from methadone typically begin around 24 to 72 hours of life.
- **Clinical Features:** tremors, irritability, increased wakefulness, high-pitched cry, increased muscle tone, frequent yawning and sneezing, exaggerated moro reflex, poor feeding, uncoordinated and constant sucking, vomiting, diarrhea, poor weight gain, fever, nasal stuffiness, mottling, and temperature instability.
- **Non-Pharmacologic treatment:** Supportive measures that include minimizing environmental stimuli, promoting adequate rest and sleep, and providing sufficient caloric intake to establish weight gain should constitute the initial approach to therapy.

(Hudak & Tan, 2012).

EVIDENCE

Breast Feeding:

- Breast feeding or the feeding of human milk as been associated with less severe NAS that presents later and less frequently requires pharmacologic intervention (Hudak & Tan, 2012).
- There was a shorter duration of NAS treatment for the total group of breast fed neonates compared to neonates who were not breast fed (Welle-Strand, et al., 2013).
- McQueen, et al. found that infants who were predominantly breast fed showed a decrease in NAS symptomatology including duration and intensity (2011).

EVIDENCE

Rooming In:

- Among opiate dependent women, rooming-in was associated with a statistically significant decrease in need for newborn treatment of NAS, need for admission to a NICU, and mean length of stay in the hospital compared with standard care in a nursery (Abrahams, et al, 2007).

EVIDENCE

Other non-pharmacologic Interventions:

- Strategies that have been found to decrease sign and symptoms of NAS include: swaddling, gentle handling, decreased noise, minimizing overhead lights. These are useful strategies limiting external stimulation. In order to minimize weight loss, small frequent feeds with high calorie formula or breastfeeding have shown to be beneficial (Cramton & Gruchala, 2013).
- Sublett's research, encourages an environment that is quiet and dark, handling should be slow and gentle, tight swaddling, positioning on back or side, non-nutritive sucking, rubbing instead of patting the infant when burping, and skin to skin with parents to decrease withdrawal symptoms, decrease gastrointestinal upset, decreased length of stay, and promote comfort (2013).
- Other non-pharmacologic interventions shown to be beneficial for NAS infants are: aroma therapy - infants slept more and cried less, kangaroo care - infants slept more and mother felt more involved in their infants care, massages - decrease in stress behaviors, music therapy - lullaby sung by mother improved feeding behaviors and sucking, and water beds - improved weight gain, and allowed for less medication to be used to control symptoms (Maguire, 2014).

Chart Review

- **Population:** 26 infants born at LVHN from 6/20/13 to 6/8/14. 13 out of 26 infants included in research.
- **Exclusions:** premature/non-term infants, admission to NICU for reason other than NAS, non-opiate using mother.

Data:

- 64% of mother had used methadone. 46% used other substances with methadone.
- Average admission time to NICU of the 13 infants included in the research was 31 hours of life.
- 38% of the infants had nursing interventions other than swaddling charting. Most included dark environment, sucking, soothing voice, and quiet environment.
- 85% of the infants listed swaddling as a nursing interventions.
- 2 had no interventions listed.

Current Practice at LVHN

- Our current practice for NAS infants on MBU is to check Finnegan Scores every 3 hours. Promote minimizing excessive stimulation, encourage breast feeding, evaluate pain, and skin care.
- If the Finnegan score is greater than 8 for 3 checks or greater than 12 for 2 checks the infant is admitted to NICU. In the NICU infants receive pharmacological treatment and non-pharmacological interventions for supportive care.

(CPM Guideline, 2014).

IMPLEMENTATION

Design (EBP) Guideline(s)/Process: We created an educational power point for nurses on MBU to compete. The power point provided background information on NAS and it outlined the recommendations for non-pharmacologic interventions for NAS.

Implemented EBP on Pilot Unit: We worked with Jen King to assign this e-learning to MBU staff nurses.

Evaluation (Post data) of Process & Outcomes: To date 75% of MBU staff completed this e-learning. We are in the process of performing post education chart review to determine if there was an increase in non-pharmacologic interventions used for NAS infants and when NAS infants admitted to NICU.

Modifications to the Practice Guidelines: Modifications not made at this time as research is continuing to be gathered.

Network Implementation: In process at this time as further information is needed.

Practice Change

- Practice changes are currently in process. We are evaluating the data by chart review of term NAS infants admitted to NICU to determine if there is an increase in non-pharmacologic methods used by MBU to compare to pre-education chart review.
- Our goal is to change the practice of MBU nurses to initiate and educate families on non-pharmacologic methods to manage NAS infants.

RESULTS

- Our research findings show that although non pharmacologic treatment cannot replace pharmacologic treatment for NAS infants, it can promote comfort, decreased withdrawal symptoms, and in some cases delay the need for pharmacologic treatment.
- The chart review gave limited data as it was a small population of infants included. We did find that limited nursing interventions were used to manage symptoms.
- Next Steps – Our plan was to share the research findings with the mother-baby nurses caring for NAS infants. We also plan to create standard of care guidelines for nurses to follow when caring for NAS infants in order to promote best practice and delay NICU admissions.

Implications for LVHN

- If NICU admissions can be delayed with cost-effective, non-pharmacologic interventions for NAS infants both cost and length of stay could be significantly decreased.
- Patient satisfaction could see an increase if parents are actively involved and provided ongoing education about their infants care.

Strategic Dissemination of Results

- Our EBP Project is unique to women's and children's health. In our continuing research, should we determine that the non-pharmacologic methods discussed are beneficial in delaying NICU admissions we would like to increase awareness of this information through additional education and training. In doing so we can then create the practice guidelines to make these interventions a standard on MBU for all infants with NAS.

Lessons Learned

- Involving leadership and change champions more effectively, could have helped to promote our ideas.
- More educational materials to provide to nurses could have increased staff interest and involvement.
- Attempting to encourage participation in the learning activities while everyone was preparing for EPIC was a challenge.

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