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Buprenorphine in the Management of Neonatal Abstinence Syndrome

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Background/Problem

Due to the opioid crisis in the United States, there has been a rise in the number of infants born with Neonatal Abstinence Syndrome (NAS). Current practice at Reading Hospital regarding treatment of NAS is based on nursing assessment of the **Eat Sleep Console tool**, used to determine necessary medication treatments. Morphine and clonidine are currently the standard medications used by Reading Hospital and other prominent hospitals within the region. Recent research presents buprenorphine as a more effective alternative for medication management of NAS.

PICOT

P- Infants born to opioid addicted mothers

I- the administration of buprenorphine

C- morphine and clonidine

O- shorter length of treatment, decrease withdrawal symptoms

Practice Question

Do infants with NAS have better outcomes (decreased length of stay, muscle rigidity, sweating, marked hyperactivity, lethargy, poor feeding, and inability to self console) with the use of buprenorphine versus the traditional pharmaceutical interventions, used at Reading Hospital, of clonidine and morphine?

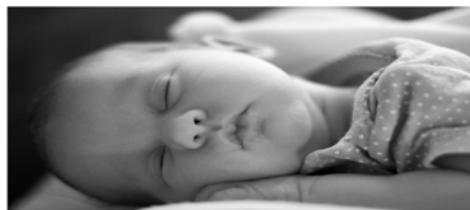
Evidence Summary:

- Meta-Analysis of RCTs 18 trials in single center studies showed reduced length of stays (2-5 days less) with buprenorphine. (Discher, et al., 2019). **Level 1, Quality A**
- RCT with 63 term infants exposed in utero to opioids; treatment with buprenorphine LOS 15 days vs.28 days with morphine(Kraft, Adenyi-Jones, et al., 2017). **Level I, Quality A**
- Buprenorphine length of stay was 23 days compared to 38 days for those treated with morphine (Kraft, et al., 2010). **Level I, Quality B**
- Milder withdrawal symptoms in buprenorphine vs methadone with many studies (Gaalema, et al., 2011) **Level I, Quality B**



Evidence Summary:

- Postnatal treatment with buprenorphine is associated with shorter length of stay, duration of treatment, and lower cumulative opioid exposure, compared with postnatal pharmacotherapy with methadone (Taleghani, et al., 2019) **Level I, Quality B**
- Decreased syndrome progression by 95% with buprenorphine in 19 newborns (Mizuno, et al., 2020) **Level II, Quality B**
- The use of sublingual buprenorphine for NAS treatment is a promising alternative strategy for reducing NAS treatment duration and cost while supporting quality care and patient safety (Hall, et. al., 2018) **Level II, Quality B**



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Recommendations for Change Based on Evidence Synthesis:

Promote the use of buprenorphine to treat neonatal abstinence syndrome by:

- Provide mothers with pamphlets about the plan of using buprenorphine to treat infant's withdrawal symptoms
- Utilize the Finnegan scoring to monitor infants' outcomes with the use of buprenorphine
- Length of stay would be documented in the patient's chart
- Mothers would be screened before giving birth to treat NAS symptoms for infants exposed to methadone

Translation of Evidence into Practice

- To decrease the duration of opioid treatment and length of stay for NAS infants
- Improve the withdrawal symptoms for NAS
- Promoting the use of buprenorphine will help decrease the readmission rates for NAS infants

Evaluation of Practice Change/Outcomes:

Although the current research available is appreciable in justifying an immediate change in practice pertaining to medication management of NAS , it does require more evidence. However, as Reading Hospital has recently adopted the Eat, Sleep Console model intended to decrease the amount of medication given to NAS infants, we should continue to monitor research on Buprenorphine to continue to expand and improve our practice. Further, as the opioid crisis continues in the United States, and the number of NAS infants born in the hospital setting is increasing, we must begin to address the stigma healthcare providers around opioid use in pregnancy. Such stigma not only reduces the likelihood for mothers to seek and engage in care, but also prevents healthcare providers from proving the most appropriate and ethical care possible.

What are next steps

- Focusing attention toward improving the opioid crisis to reduce the number of infants born with NAS
- Further investigation and research of treatments for NAS, including Buprenorphine to assist in reducing the symptoms NAS infants experience, in turn reducing the length of hospital stay

Database Search Strategy

- PubMed
- CINAHL
- University of Pennsylvania Library

Keywords:

Buprenorphine OR Morphine OR Clonidine AND Neonatal Abstinence Syndrome OR NAS OR infant outcomes OR infant

