ECHO
Environmental influences on Child Health Outcomes
A program supported by the NIH

IDeA States Pediatric Network

Study Summary

The influence of opioid use disorder medications during pregnancy on the severity of neonatal opioid withdrawal syndrome

Author(s): Lori A. Devlin, Zhuopei Hu, Songthip Ounpraseuth, Alan E. Simon, Robert D. Annett, Abhik Das, Janell F. Fuller, Rosemary D. Higgins, Stephanie L. Merhar, P. Brian Smith, Margaret M. Crawford, Lesley E. Cottrell, Adam J. Czynski, Sarah Newman, David A. Paul, Pablo J. Sánchez, Erin O. Semmens, M. Cody Smith, Bonny L. Whalen, Jessica N. Snowden, Leslie W. Young

Why was this study conducted?

Opioid use disorder is a treatable disease that can be managed with medicine for opioid use disorder (MOUD). This type of treatment is recommended for pregnant individuals by healthcare professionals to improve pregnancy and newborn outcomes.

Babies who were exposed to opioids during pregnancy may develop signs of neonatal opioid withdrawal syndrome (NOWS), including tremors; excessive crying and irritability; and problems with sleeping and feeding. This study looked at how MOUD use during pregnancy influenced the severity of NOWS symptoms.

What was done?

Data were collected from the medical records' of 1294 opioid-exposed infants born at or cared for in 30 U.S. hospitals between July 2016 and June 2017. There were 859 infants exposed to MOUD (methadone or buprenorphine) and 435 infants exposed to opioids other than MOUD. We looked to see if infants needed medication to treat NOWS and how long they stayed in the hospital.

What was found?

The results suggest that exposure to MOUD (buprenorphine or methadone) during pregnancy increased the severity of NOWS. Infants exposed to MOUD were two times more likely to need an opioid medication to treat withdrawal. They also remained in the hospital 1.7 days longer than infants not exposed to MOUD. Some factors that reduced the severity of NOWS in infants treated with MOUD were adequate prenatal care, exposure to a single type of opioid, and not being exposed to other mood-changing drugs simultaneously. These factors also decreased the likelihood that infant would need opioid medicine to treat their NOWS symptoms and shortened their hospital stay. Infants exposed to buprenorphine instead of methadone had a shorter length of hospital stay and needed less treatment with opioid medication.

What do the results mean?

Medical experts recommend that pregnant women with an opioid use disorder use MOUD for healthier pregnancies. MOUD can reduce the chances of pregnancy loss, premature birth, infection, and poor growth of the infant. However, using MOUD may be related to increases in the severity of NOWS. Learning more about how MOUD affects the severity of NOWS can help doctors improve the health of mothers using MOUD and their babies. These results also suggest that adequate prenatal care can help improve pregnancy and birth outcomes, and highlight the importance of identifying barriers to receiving sufficient prenatal care as an opportunity to improve infant outcomes.

Who sponsored this study?

This research was supported by the Environmental Influences on Child Health Outcomes Program, the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development, the National Center for Advancing Translational Sciences, and the National Institutes of Health.

Appreciation:

We deeply appreciate the doctors, nurses, and hospitals that participated in the study and helped identify and extract information from the required medical records. Their enthusiastic collaboration made this study possible.

You may learn more about this publication here: https://link.springer.com/article/10.1007/s10995-022-03521-3

The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.