Does Maternal Methadone Dose Correlate with Severity of Intrauterine Growth Restriction in Infants with Neonatal Abstinence Syndrome?

D. Friedman  
*Thomas Jefferson University, daniela.friedman@jefferson.edu*

J. Smith  
*Thomas Jefferson University*

M. Lafferty  
*Thomas Jefferson University*

Z. H. Aghai  
*Thomas Jefferson University, zubairul.aghai@jefferson.edu*

Follow this and additional works at: [https://jdc.jefferson.edu/si_ctr_2022_phase1](https://jdc.jefferson.edu/si_ctr_2022_phase1)

Part of the Obstetrics and Gynecology Commons, Substance Abuse and Addiction Commons, and the Translational Medical Research Commons

Let us know how access to this document benefits you

Recommended Citation

[https://jdc.jefferson.edu/si_ctr_2022_phase1/68](https://jdc.jefferson.edu/si_ctr_2022_phase1/68)

This Article is brought to you for free and open access by the Jefferson Digital Commons. The Jefferson Digital Commons is a service of Thomas Jefferson University's Center for Teaching and Learning (CTL). The Commons is a showcase for Jefferson books and journals, peer-reviewed scholarly publications, unique historical collections from the University archives, and teaching tools. The Jefferson Digital Commons allows researchers and interested readers anywhere in the world to learn about and keep up to date with Jefferson scholarship. This article has been accepted for inclusion in Phase 1 by an authorized administrator of the Jefferson Digital Commons. For more information, please contact: JeffersonDigitalCommons@jefferson.edu.
Introduction: Previous studies demonstrate a relationship between maternal opioid use during pregnancy and smaller head circumference of infants with neonatal abstinence syndrome (NAS). The goal of this study is to correlate maternal methadone dose and severity of growth restriction in infants with NAS admitted to the neonatal intensive care unit (NICU).

Methods: This is a retrospective analysis of infants (≥35 weeks gestation) exposed to in utero methadone, born between August 2006 and May 2018, and admitted to a Philadelphia NICU for medical therapy for NAS. Growth parameters (birth weight, birth length, and birth head circumference) were compared between infants exposed to various doses of methadone. The groups were compared using ANOVA, Post-Hoc Tukey, Chi-square and extended Fisher exact tests.

Results: A total of 686 infants met the study criteria; 109 in the High dose group, 359 in the Intermediate dose group, and 218 in the Low dose group. There was no significant difference in the use of other drugs or smoking during the pregnancy. Infants exposed to higher doses of methadone displayed significantly smaller head circumferences and lengths at birth. The mean birth weight was similar between the three groups.

Discussion: There may be a danger in prescribing high doses of methadone to pregnant mothers, as they may hinder the growth of the infant. We need to conduct more studies investigating how low head circumference and length affect long term developmental outcomes. These findings may help guide physicians toward the optimum dose of methadone for mothers.