

1-2020

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Recommended Citation

Friedman, D.; Smith, J.; Lafferty, M.; and Aghai, Z. H., "Does Maternal Methadone Dose Correlate with Severity of Intrauterine Growth Restriction in Infants with Neonatal Abstinence Syndrome?" (2020). *Phase 1*. Paper 68.

https://jdc.jefferson.edu/si_ctr_2022_phase1/68

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SI/CTR Abstract
Word count: 245 words

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

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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 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.