AAP DISTRICT VIII SECTION ON NEONATAL PERINATAL MEDICINE

2021 ANNUAL CONFERENCE **ORIGINAL RESEARCH** (BASIC SCIENCE or CLINICAL)
ABSTRACT SUBMISSION FORM

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Trainee? Yes ☑ No ☐

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DEADLINE FOR RECEIPT OF ABSTRACT IS FEBRUARY 19, 2021. Submissions will be accepted for either poster or oral presentation. Authors will be notified of acceptance and format for presentation (poster or poster symposium) by **March 12, 2021.**

Title: Postnatal acetaminophen exposure and neurodevelopmental outcomes in preterm infants < 29 weeks gestation: a retrospective cohort study

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Background:

Prenatal acetaminophen exposure is associated with increased risk of neurodevelopmental abnormalities in early childhood including cerebral palsy, autism, poor cognition, and language delay. There is extremely limited data on neurodevelopmental outcomes of preterm infants exposed to acetaminophen postnatally. Given the widespread and increasing use of acetaminophen in neonatal intensive care units, the objective of our study was to investigate neurodevelopmental outcomes of preterm infants < 29 weeks gestation exposed to acetaminophen.

Methods:

In this retrospective cohort study, data was collected from infants born at < 29 weeks gestation between 2008-2017. Infants with chromosomal abnormalities, major congenital abnormalities, and congenital infections were excluded. The primary outcome was a score of < 85 on either the cognitive, language, or motor components of the Bayley Scales of Infant and Toddler Development (Bayley-III). Secondary outcomes included separate cognitive, language, and motor components of the Bayley-III. Outcomes were assessed at 21 months corrected age. Variables were compared using Chi square tests, Fisher's exact tests, t-tests, and Mann-Whitney U tests. Logistic regression models were used to calculate adjusted odds ratios with 95% confidence intervals.

Results:

Of the 921 eligible infants, 115 (12.5%) were exposed to acetaminophen. Infants in the acetaminophen group were of lower gestational age, had lower Apgar scores, and higher rates of patent ductus arteriosus ligation, necrotizing enterocolitis, respiratory support at 36 weeks postmenstrual age, and sepsis. There was a higher percentage of males (63% vs. 52%) in the acetaminophen group. After adjusting for these confounding variables in regression models, there were no significant associations between acetaminophen exposure or days of acetaminophen use and low Bayley III scores.

Conclusion:

In our cohort, acetaminophen was not independently associated with neurodevelopmental outcomes based on the Bayley-III assessment. Our results need validation in larger cohorts.