

AAP DISTRICT VIII SECTION ON NEONATAL PERINATAL MEDICINE


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

Presenting Author: __Sara Neches, MD__ Title (MD, DO, NP, other):_____
Institution ___University of Washington | Seattle Children's Hospital_____
Street Address __M/S FA.2.113, 4800 Sand Point Way, NE Seattle, WA 98105_____
Telephone: __(917)647-2537_____ E-Mail: __skneches@uw.edu_____

Trainee? Yes No

If yes, type and year of training ___Neonatal-Perinatal Fellow, PGY-4_____

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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: Full premedication associated with improved outcomes for tracheal intubation in the neonatal intensive care unit.

Authors: Sara Neches MD, Brianna K. Brei MD, Megan M. Gray MD, Taylor Sawyer DO, MEd., Kirti Upadhyay MD, Rachel Umoren MB.BCh, MS

Institution: University of Washington

Background: Neonatal tracheal intubation (TI) is an important technical skill however even highly experienced providers have average first attempt success (Haubner et al. 2013). Premedication has been proposed as a means to improve outcomes of TI. The AAP supports the use of analgesics for non-emergent intubations (Kumar et al. 2010), and research by Foglia et al. (2019) established decreased tracheal intubation associated events (TIAEs) with use of paralytic medicine. It is not known whether there is a greater association with full vs. partial premedication on TI success rates and TIAEs.

Objective: Evaluate the association of full compared with partial premedication with Tracheal Intubation Associated Events (TIAEs) and first attempt success in the NICU.

Methods: A retrospective cohort study in a single Level IV academic NICU participating in the prospective database the National Emergency Airway Registry for Neonates from Dec 2018-Mar 2020 compared TI with full premedication (vagolytic, opiate analgesic, and paralytic agent) and TI without full premedication. Primary outcomes were associations between full premedication and number of TI attempts, first attempt success, and TIAEs.

Results: Data were collected on 111 TI encounters in 65 infants with a median of 29 weeks gestation and birth weight of 1100g. The use of full premedication increased from 0% in 2019 to 54% in 2020. Overall, full premedication was used in 32% (n=36) of total TI encounters, and resulted in fewer TI attempts ($p=0.01$), higher first attempt success ($p=0.04$), and fewer TIAEs ($p<0.01$). There was a trend toward less change in heart rate (mean of 33 bpm vs. 50 bpm from baseline) during intubation with full premedication ($p=0.07$), and fewer instances of severe bradycardia (HR <60 bpm) ($p=0.02$).

Conclusion: Compared to intubations without full premedication, use of full premedication resulted in fewer intubation attempts, higher first attempt success, and fewer adverse events. These findings will inform ongoing quality improvement initiatives to further increase utilization of full premedication.