

5th International Conference on **Pediatrics and Neonatal Care**

July 21-22, 2026 | Vienna, Austria



Aurore Côté, Phoukim Savanh, Wissam Shalish, Victoria Bizgu, Anne-Marie Canakis

The Montreal Children's Hospital, McGill University, Montreal, Canada

Caffeine for Persistent Intermittent Hypoxia in Newborns With and Without Chronic Lung Disease

Objectives

To assess the caffeine response in preterm and term newborns with persistent intermittent hypoxia (IH) as they approach discharge, with a particular focus on newborns with chronic lung disease of prematurity (CLD). To identify factors associated with a lack of response to caffeine.

Design

Retrospective cohort study across two neonatal intensive care units between 2015-2022.

Main outcomes following caffeine administration: Normal oximetry; no need for respiratory support; resolution of hypercapnia.

Results

A total of 132 infants received caffeine for persistent IH. Normal oximetry was achieved post-caffeine in 81% (46/57) of newborns with CLD, in 96% (46/48) of preterm with no CLD, in 96% (26/27) of term newborns. Caffeine reduced the % time with SpO₂ <90% from 6.8% (interquartile range, 3.8%-12.2%), to 0.8% (0.4%-1.6%, $p < .0001$). The desaturation index <80% dropped from 5.3 events/hour (0.9-14.6 events/hour) to 0.2 events/hour (0-0.78 events/hour, $p < .0001$) and the index $\geq 10\%$ lasting >10 s went from 6.6 events/hour (3.3-10.7 events/hour) to 1.4 events/hour (0.7-2.4 events/hour, $p < .0001$). Of the 61 infants on respiratory support, 45 (74%) were weaned within a few days following caffeine. Caffeine normalized PCO₂ in 63% (41/65) of newborns with elevated PCO₂ pre-caffeine. Infants failing caffeine were more likely to have CLD compared to responders (79% vs. 39%, $p < .005$). Caffeine was successfully discontinued (normal oximetry) in 101 infants (88%) at postmenstrual age of 46.1 weeks (45.3-48.3 weeks).

Conclusion

Caffeine improved respiratory outcomes in the majority of preterm and term born infants with persistent IH, including those with CLD.

Keywords: Caffeine, persistent hypoxia, oximetry, ventilator support

5th International Conference on **Pediatrics and Neonatal Care**

July 21-22, 2026 | Vienna, Austria

Biography

I am a pediatric pulmonologist practicing in a group setting at a pediatric university hospital in Montreal, Canada. My research interests focus on apnea and oxygenation. Recently, my work has concentrated on the effects of caffeine on hypoxic events in newborns as they approach discharge from neonatal intensive care units (NICUs). I am also interested in hypoxemic episodes in prematurely born infants and in infants with lung disease who travel by air. For that purpose, I have investigated the validity of the “fitness to fly” test, as well as the role of sleep in influencing its results.