



# Pediatric Academic Societies Meeting

## April 24 – May 1, 2019 | Baltimore, MD

April 24-26 • Pre-conference Events | April 27-30 • PAS 2019 Meeting | May 1 • Post-conference Events

### 🔗 Permalink

High FiO<sub>2</sub> during mask ventilation at birth and early neonatal mortality in preterm infants (Board 507)

📅 Sun, April 28

📍 Convention Center Halls  
D-G

📄 Poster Session

Part of:

**2858 Neonatal/Infant Resuscitation 3**

5:45 PM - 7:30 PM

### Info

#### Background:

The most recent ILCOR systematic review and meta-analysis, with 10 trials and 1007 preterm newborns, did not demonstrate improvement in short-term mortality when initiating ventilation at birth with low vs. high FiO<sub>2</sub>. There are no data about the impact of maximal FiO<sub>2</sub> during positive pressure ventilation (PPV) in the delivery room (DR) on neonatal outcomes.

#### Objective:

To verify whether the use of maximal FiO<sub>2</sub> ≥0.60 increases early neonatal deaths in preterm infants that received PPV by mask at birth and responded well with a 5<sup>th</sup> minute Apgar score of 7-10.

#### Design/Methods:

Pragmatic prospective cohort study in 20 Brazilian public university hospitals. During 2014-2017, all inborn infants with gestational age 23-33 weeks and birth weight 400-1499g without malformations who received PPV only with face mask at birth and had a 5<sup>th</sup> minute Apgar of 7-10 were included. The studied intervention was the maximum FiO<sub>2</sub> during PPV in DR, classified as ≥0.60 or <0.60. Neonatal teams followed Brazilian NRP guidelines for preterm infants. In 2011, PPV was started with FiO<sub>2</sub>=0.40 and increments of 20% every 15 seconds if heart rate <100 bpm and/or O<sub>2</sub> saturation <70. From 2016 on, PPV should be started with FiO<sub>2</sub>=0.30 with increments only for infants that did not improve despite correction of PPV technique. All units, except one, had T-piece resuscitators and oxygen blenders available in the DR. Stepwise logistic regression was applied for the main outcome.

#### Results:

1491 infants met the inclusion criteria and 802 (54%) received maxFiO<sub>2</sub> ≥0.60. Characteristics and outcomes of patients are shown in Tables 1 and 2. Logistic regression analysis adjusted for confounders for the dependent variables: use of maxFiO<sub>2</sub> ≥0.60 during PPV at birth and early neonatal death is shown in Table 3.

#### Conclusion(s):

This study shows an association between high O<sub>2</sub> delivery and early neonatal mortality, adjusted for known risk factors for this outcome, in PT infants that received PPV by mask and had an Apgar score of 7-10 at 5 minutes. It is possible that for "healthier" preterm infants, maximum FiO<sub>2</sub> ≥0.60 during PPV soon after birth may be as harmful as it was proven for term infants.

#### Publication Number:

2858.507

### Authors

Ruth Guinsburg  
Grupo Santa Joana

Maria Fernanda Almeida  
Rede Brasileira de Pesquisas Neonatais

Helóisio Reis  
Rede Brasileira de Pesquisas Neonatais

**Jamil Caldas**

Rede Brasileira de Pesquisas Neonatais

---

**Olga Bomfim**

Rede Brasileira de Pesquisas Neonatais

---

**Fabio Carmona**

Rede Brasileira de Pesquisas Neonatais

---

**Francisco Martinez**

Rede Brasileira de Pesquisas Neonatais

---

**Jose Maria Lopes**

Rede Brasileira de Pesquisas Neonatais

---



© 2019 X-CD Technologies Inc.