

Successful group (47% vs 13%, p: 0,02). Comparing the two groups (Failure vs Success) with a stepwise linear regression, there was a statistically significant difference regarding birth weight ( $950 \pm 250$  grs vs  $1370 \pm 220$  grs, ORaj: 4,5), gestational age ( $27 \pm 1$  weeks vs  $29,5 \pm 3$  weeks, ORaj:6,1) and severe respiratory distress syndrome ( 53% vs 22%,ORaj: 3,1). Failure of the first Extubation attempt was associated with longer duration of mechanical ventilation and length of hospital stay (p:0,01).

**Conclusion:** Incidence of Extubation failure in our very low birth weight preterm population (17%) is similar to the litteraturre reported rate. Main risk factors include: prematurity, very low birth weight and severe respiratory distress at admission. Implementation of Extubation strategies based on this risk factors can reduce the amount of extubation failure.

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### **BIPAP VISION FOR NIV IN CHILDREN UNDER 30 KG. REPORT OF EFFECTIVENESS AND SAFETY**

**M. Pons**, E. Esteban, J. Ortiz, S. Segura, A. Palomeque

*PICU, Hospital Sant Joan de Déu, Esplugues de Llobregat, Spain*

**Background and aims:** To analyze effectiveness and safety of BiPAP Vision device for NIV in children under 30 kilograms with acute respiratory failure.

**Methods:** Retrospective cohort study with consecutive sampling of patients treated with BiPAP Vision for ARF admitted to PICU between 2008-2009. Patients younger than 3 months, patients with previous intubation during admission or those with palliative indication for NIV were excluded. Patient's demographic data, underlying disease, physiologic data (including Hemoglobin saturation / FiO<sub>2</sub> ratio (SF) ) previous, at start point of NIV, and at 2, 8 and 12 hours were collected. NIV failure, defined as need for intubation, was the primary outcome. Descriptive, Uni- and Multivariate statistic analysis was performed.

**Results:** The sample consists of 194 patients. 112 were male (57,7%). Median age was 2.27 (range 0.25 - 18) years. 103 patients weighted less than 30 kg. NIV failure occurs in 56 patients (23.93%; 95%CI = 13.25- 32.53%). Duration of NIV treatment ranged 0 - 320 (median 38.5) hours. Median PICU length of stay (LOS) was 7,2 (range 1- 45) days. No

statistical difference was observed in NIV's failure in patients weighting under 30 kg (< 30Kg 20%, >30 kg 32.6%) p=0.112 . No complications were observed **Conclusion:** BiPAP Vision is a safe and an effective device to provide NIV in ARF in children under 30 kg.

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### **RESOLUTION OF PNEUMOTHORAX USING INSPIRED FRACTION OF 100% OXYGEN**

**N.M. Gianini**, F.C. Barros, A.P. Miranda, L. Bandeira, T.F. Guerreiro, S. Trindade, S. Dbral, I. Araguez, G. Monteiro

*CETRIN - NICU, Casa de Saúde Santa Lúcia, Rio de Janeiro, Brazil*

**Introduction:** Air leaks, especially pneumothorax, are not rare events in NICU. The chest drain is one of the most painful procedures among the many that are performed on newborns. The breathing of 100% oxygen causes the capillary pressure becomes too low hastening the absorpion of the pneumothorax.

**Objectives:** To describe the cases of pneumothorax in NICU and its evolution with the strategy of a hundred percent oxygen therapy.

**Method:** A descriptive study of cases of pneumothorax during the period of 36 months, using the database,software Epi-info, version 3.2, the CDC - made the measurements of frequency, average and standard deviation.

**Results:** In 36-month period, 827 hospitalized children. Of these, 17 had pneumothorax during their hospitalization - 2%. The average weight was 2.418 g and gestational age was 35 weeks. The base lung disease was hyaline membrane disease in 6, transient tachypnea of the newborn in 7, pneumonia in 2 and meconium aspiration syndrome in 2. Of the 17 newborns in the study 53% of newborns did not require chest tube drainage.

**Discussion:** The concern for invasive and painful procedures has increased in recent years in neonatal units. The drainage and retention of the drain are painful. Pneumothorax that few symptoms, can be treated and solved with oxygen supply of 100%, since there is monitoring of color, respiratory rate and heart rate. Our sample shows the effectiveness of this strategy and security in its broad implementation.