

group without the need for any therapy as a result of high bilirubin and hematocrit levels.

## Neonatal Pulmonology

### PO-0726 INTERNATIONAL SURVEY ON PERI-EXTUBATION PRACTICES IN EXTREMELY PREMATURE INFANTS

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**Background** Weaning of mechanical ventilation (MV), assessment of extubation readiness and provision of post-extubation support are critical steps in the care of extremely preterm infants (< 28 weeks). The use of evidence-based practices during the peri-extubation phase is paramount for ensuring successful outcome.

**Objective** Determine the peri-extubation practices used in extremely preterm infants internationally.

**Methods** From Oct 2013 to Feb 2014 a structured questionnaire with 15 questions related to peri-extubation practices was circulated to the clinical directors of 162 neonatal intensive care units across Canada, USA, Ireland, Australia and New Zealand.

**Results** 112 directors responded to the questionnaire (69%). The majority of units do not have written protocols for any aspect of MV (64%). The decision to extubate is generally made by the attending neonatologist (99%) or neonatal fellows (71%), based on ventilator settings, blood gases and haemodynamic stability; 16% of units extubate infants based on Spontaneous Breathing Trial (SBT). The SBT's varied on definitions of failure and durations; from <5 min (59%) to >10 min (35%). The majority of infants are extubated ≤3 days of life (76%) to nasal CPAP (84%). The failure rate was estimated to be 10–30%, but there was lack of consensus on the definition of failure (re-intubation within 24, 48 or 72 h after extubation). The decision to reintubate was almost always based on clinical judgement of physicians (88%), rather than well defined re-intubation criteria.

**Conclusions** Peri-extubation practices in extremely preterm infants are not always evidence based and frequently physician-dependent. High quality trials are required to inform guidelines and standardise practices for this important aspect of neonatal intensive care.

### PO-0727 PREDICTORS OF DIFFICULT ENDOTRACHEAL INTUBATION OF INFANTS IN NICU-KAMC, RIYADH, KSA

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**Background and aim** Intubation in NICU is a daily procedure, that may be associated with serious complications. We studied the effect of different factors that may contribute to the difficulty and success of semi elective endotracheal intubation of sick infants managed at NICU of KAMC-Riyadh.

**Methods** A retrospective review of prospectively collected data of infants that had semi elective endotracheal intubation from 1/1/2010 till 1/7/2011. The studied factors were : experience of intubating physician, body weight and post conceptional age (PCA) of the infants, premedication. Success of intubation was assessed by number of trials, pain score, and occurrence of bradycardia and or desaturation.

**Results** 180 infants had semi elective intubation. Birth weight (490–4995 gms), PCA (25 to 53 weeks). Premedication was used in 108 infants; Fentanyl:66, Midazolam : 33 infants, and both medications: 9 infants.

Univariate analysis showed that difficult intubation (need for ≥3 trials of intubation) positively correlates with junior intubating physicians ( $p < 0.001$ ) and bradycardia (heart rate <80/min) was associated with smaller body weight ( $p: 0.036$ ).

Multilogistic Regression analysis showed independent correlation between difficulty of intubation and total number of attempts of intubation with the junior (RI, and R2 & Service physicians of less than 12 months experience) intubating physician ( $p 0.001$  and  $0.01$ ).

Using premedication had no contribution to success of intubation, number of attempts of intubation and occurrence of Bradycardia and/ or desaturation.

**Conclusion** The only predictor of difficult intubation of infants in NICU in our study was having intubation by junior physician, while premedication did not contribute to the success of intubation.

### PO-0728 LUNG LAVAGE WITH DILUTE PORCINE SURFACTANT FOR MECONIUM ASPIRATION SYNDROME: A RANDOMISED CONTROLLED STUDY, A PRELIMINARY REPORT

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**Background and aims** Meconium aspiration syndrome (MAS) is an important cause of severe respiratory failure in newborn infants. The aim of this study was to evaluate the efficacy of lung lavage with dilute porcine surfactant in ventilated infants with MAS.

**Methods** In this prospective randomised controlled study ventilated infants with MAS with a gestational age ≥36, birth weight ≥2000 g included. Enrolled infants randomised into two groups; in group 1, two sequential 15 mL/kg aliquots of dilute porcine surfactant (Curosurf, Chiesi Farmaceutici S.p. A., Parma, Italy) with a phospholipid concentration of 5 mg/ml were instilled into the lung. In group 2, 100 mg/kg of porcine surfactant were administered as a bolus. Infants in both groups were evaluated and compared with regard to efficacy, morbidity and mortality.

**Results** Fourteen infants were randomised. There were no significant differences between two groups in term of demographic characteristics. Median duration of respiratory support was longer in bolus surfactant group, although the difference was not statistically significant (2.2 vs. 7.2 days,  $p = 0.18$ ). Similarly, duration of oxygen therapy and hospital stay length were shorter in lung lavage group but the difference was statistically insignificant (8.0 vs. 12.7 days,  $p = 0.32$ , 11 vs. 18.5 days  $p = 0.15$ , respectively). There were no differences in requirement for high frequency ventilation and nitric oxide between the groups.

**Conclusion** Although it is not statistically significant, preliminary results show that lung lavage with dilute surfactant therapy shortens the duration of respiratory support and hospital stay length.

**PO-0729** CAN TRANSITIONAL DELAY AND TRANSIENT TACHYPNEA OF NEWBORN BE PREVENTED BY CPAP INTERVENTION IN DELIVERY ROOM?

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**Background** Transitional delay in postnatal respiratory adaptation including transient tachypnea of the neonate (TTN) as a result of failure to clear fetal lung fluid is not uncommon and can be problematic in some infants delivered by elective cesarean delivery. (ECD)

**Objective** We hypothesise that application of CPAP at birth via T-piece based neopuff to infants delivered at 34–39th gestational week by ECD delivery may enhance airway liquid clearance and decrease the rate of failure in respiratory adaptation and related NICU hospitalisation.

**Methods** Spontaneously breathing infants who were delivered by ECS were randomised either to receive CPAP, 5 cmH<sub>2</sub>O administered via face mask for 20 min with 25–30% O<sub>2</sub> (intervention group) or to be managed with standard care in DR. Respiratory outcomes were assessed and modified Silvermann score, respiratory rate, heart rate, oxygen saturations were serially recorded for the first six hours.

**Results** 16 (% 5.8) infants out of 273 infants, 137 intervention and 136 control were hospitalised in the NICU because of respiratory distress. 7 of 16 patients were TTN where as the others transitional delay. Respiratory hospitalisation rate was significantly lower for the intervention group (4/137%8.8 vs 12/136 2.2 p = 0.035). The preventive effect of CPAP on TTN could not reach to statistical significance (% 4.4 vs 0.72 p = 0.06). No adverse complication including pneumothorax was noted.

**Conclusions** Delivery room early CPAP intervention decreased the rate of failure in respiratory adaptation without causing pneumothorax in infants delivered by ECD.

**PO-0730** THE EVALUATION OF LUNG FUNCTION BY USING THE OSCILLOMETRIC METHOD IN TRANSIENT TACHYPNEA OF THE NEWBORN AT PRESCHOOL AGE

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The aim of this study is to evaluate the lung function by using the oscillometric method in TTN at the pre-school age.

**Materials and methods** Children who were born over a gestational age of 35 weeks and followed at our clinic with the diagnosis of TTN in the 2005–2008 period defined as the study group and children who have no respiratory diseases are defined as the control group. The demographic features of the patient group, neonatal characteristics and followup data, maternal features were recorded. After physical examination and questioning of respiratory symptoms, pulmonary function tests of patients

who were admitted to study performed with the by Impulse Oscillometry device.

**Results** Total 62 patient were included in the study, 31 of them were in the patient group and 31 were in the control group. There weren't any statistically significant difference among the two groups for the mean X values (X5, X10, X15, X20), mean R values (R5, R10, R15, R20) and mean impedance (Z5) value at the IOS study.

**Conclusion** In our study, respiratory functions of preschool age-children who had TTN diagnosis during the newborn period found similar with the respiratory functions of healthy children. In our knowledge, this is the first study evaluating the long term effects of TTN to the pulmonary functions by examining respiratory functions with impulse oscillometry.

**PO-0731** THE EFFECTS OF EARLY ORAL VITAMIN A TREATMENT ON THE PREVENTION OF BRONCHOPULMONARY DISPLASIA IN THE LOW BIRTH WEIGHT INFANTS

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**Background and aims** We aimed to search the effect of early oral vitamin A treatment on BPD frequency and other morbidities of prematurity.

**Methods** The study was carried out as a prospective randomised controlled trial. Infants gestational age  $\leq 32$  weeks and birth weight  $\leq 1250$  g, having an oxygen support of  $> \text{FiO}_2$  21% within the first 24 h of life were included in the study. Infants included in the study were separated into two groups; Group 1 (control group) and Group 2 (oral Vit A) by a simple randomised method according to birth weight, gestational age and sex. Vitamin A prophylaxis was administered orally to therapy group at a dose of 30000 IU/kg for 6 weeks beginning in the first two days of life. BPD and mortality rates were compared between control and therapy groups.

**Results** Total number of patients included in the study was 209. There were 110 patients in Group 1 and 99 patients in Group 2. Considering prematurity related problems and diseases during postnatal period; RDS, Late-onset sepsis, PDA, pneumothorax, severe intracranial haemorrhage, ROP, BPD, and mortality were similar between the groups and statistically the groups did not differ.

**Conclusions** In our study there was no reduction on BPD incidence with early oral vitamin A prophylaxis given 30000 IU/kg weekly and no advantages on preventing BPD. We speculate that, in future studies on VLBW premature infants researchers should take into account of bioavailability of drug absorption from the gastrointestinal tract and distribution will empower the proof level.

**PO-0732** HYPOCARBIA IN HYPOXIC-ISCHAEMIC ENCEPHALOPATHY: ARE WE BAD WITH GOOD LUNGS?

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**Background and aims** Hypoxic-ischaemic encephalopathy (HIE) is an important cause of cerebral damage and long-term