

gestational and postnatal age. LUS score shows high reliability for surfactant need (AUC = 0.82;  $p = 0.005$ ; best cut off 11.5 [sensitivity 75%, specificity 90%]).

**Conclusions** LUS score is well correlated with oxygenation status and shows enough reliability to predict surfactant need. LUS can be used to monitor serially the course of respiratory conditions in critically ill neonates.

#### REFERENCE

- 1 Via G, Lung ultrasound in the ICU: from diagnostic instrument to respiratory monitoring tool. *Minerva Anestesiol* 2012;78:1282–96

PS-282

#### RESTRICTED USE OF REPEAT DOSES OF SURFACTANT AFTER THE PROPHYLACTIC DOSE DOES NOT INCREASE THE RISK OF BPD OR DEATH IN PRETERM INFANTS

<sup>1</sup>S Sarkar, <sup>2</sup>V Bhatt-Mehta, <sup>3</sup>K Sing, <sup>3</sup>T Hsu, <sup>3</sup>R Dunganani, <sup>1</sup>RE Schumacher. <sup>1</sup>Neonatal-Perinatal Medicine, University of Michigan Health System, Ann Arbor, USA; <sup>2</sup>College of Pharmacy and Division of Neonatal-Perinatal Medicine, University of Michigan Health System, Ann Arbor, USA; <sup>3</sup>College of Pharmacy, University of Michigan Health System, Ann Arbor, USA

10.1136/archdischild-2014-307384.582

Repeat doses of surfactant after the prophylactic dose for treatment of RDS are currently recommended by the manufacturers to be administered at minimal levels of respiratory support. Reducing the number of unnecessary repeat doses will represent a significant cost-saving.

We determined if restricting repeat doses of Survanta by using high-threshold criteria for respiratory support increased the risk of the composite primary outcome of BPD or death before hospital discharge.

**Methods** A total of 140 infants of  $\leq 28$  weeks gestation who received prophylactic Survanta soon after birth were reassessed 12 h after the initial dose for retreatment if the infant remained intubated and required at least 40% inspired oxygen with a MAP  $>10$  cm H<sub>2</sub>O, and compliance of  $<0.5$  ml/cm H<sub>2</sub>O.

Multivariate analysis identified which risk factors from a set of a priori predictors including the need for Survanta retreatment could predict the primary outcome.

**Results** Eighty-eight (59%) of 140 infants reached the retreatment criteria and received repeat doses of Survanta. Sixty-eight (49%) infants developed BPD or died. Infants who developed BPD or died were younger and smaller; were more likely to have PDA, NEC or sepsis, longer ( $>28$  days) stay on mechanical ventilation, and receive retreatment with Survanta. On forward stepwise logistic regression analysis of a priori risk factors only the need of ventilation  $>28$  d ( $p < 0.001$ , OR 7.3, 95% CI 2.7–19.5) was independently associated with increased risk of primary outcome.

**Conclusion** Restricting repeat doses of Survanta did not increase the risk of BPD or death in preterm infants with RDS.

PS-283

#### INSURENCPAP APPROACH VERSUS SURFACTANTMECHANICAL VENTILATION IN EXTREMELY LOW BIRTH WEIGHT INFANTS

S Ucar, M Varma, T Ertas, IH Baysal. Department of Pediatrics, OSM Middle East Hospital, Sanliurfa, Turkey

10.1136/archdischild-2014-307384.583

**Background and aims** We evaluated the efficacy of nasal continuous positive airway pressure (nCPAP) treatment following the administration of surfactant using the INSURE (INTubation SURfactant Extubation) approach. We aimed to compare the efficacy of INSURE during nasal CPAP application and post-surfactant mechanical ventilation in extremely low birth weight (ELBW) infants.

**Methods** A total of 182 ELBW infants with a diagnosis of respiratory distress syndrome admitted to the neonatal intensive care unit during January 2012 and 2014 were retrospectively screened. Of these 74 received INSURE during nasal CPAP application (INSURE-nCPAP group) and 108 received mechanical ventilation following endotracheal surfactant application (MV group). The rate of mortality, intraventricular haemorrhage (IVH), repeat doses of surfactant, pneumothorax, pulmonary haemorrhage, necrotizing enterocolitis (NEC), sepsis, broncho-pulmonary dysplasia (BPD) the duration of hospitalisation were compared between the two groups.

**Results** Infants in the INSURE-nCPAP group had significantly lower rates of IVH and pulmonary haemorrhage ( $p = 0.02$  and  $0.01$ ; respectively). The need for mechanical ventilation, BPD and the rate of mortality was lower in infants in the INSURE-nCPAP group. While there was no significant difference in the rates of bloodstream infection and ROP between the groups; the duration of hospitalisation was shorter in infants in the INSURE-nCPAP group.

**Conclusions** In the current study we found that the INSURE-nCPAP approach in preterm infants with respiratory distress syndrome was effective. Additionally, we found that the rate of mortality, IVH, pulmonary haemorrhage and BPD was lower in infants treated with INSURE approach.

PS-284

#### EARLY INTUBATE-SURFACTANT-EXTUBATE (INSURE) VERSUS NON-INVASIVE CONTINUOUS POSITIVE AIRWAY PRESSURE (NCPAP) TO PREVENT BRONCHOPULMONARY DYSPLASIA: A SYSTEMATIC REVIEW AND META-ANALYSIS

<sup>1</sup>T Isayama, <sup>2</sup>C Chai-Adisaksoha, <sup>3</sup>S McDonald. <sup>1</sup>Neonatal Intensive Care Units, Sunnybrook Health Science Centre, Toronto, Canada; <sup>2</sup>Department of Medicine, McMaster University, Hamilton, Canada; <sup>3</sup>Departments of Obstetrics and Gynecology Radiology and Clinical Epidemiology and Biostatistics, McMaster University, Hamilton, Canada

10.1136/archdischild-2014-307384.584

**Background and aims** In preterm infants, early non-invasive continuous positive airway pressure (NCPAP) use decreases “bronchopulmonary dysplasia (BPD) or death” compared with early intubation. However, it was not yet clear whether early Intubation-for-SURfactant-followed-by-Extubation to NCPAP (INSURE) is more effective to prevent BPD or Death or “BPD or death” or either than keeping infants on NCPAP. This systematic review aimed to investigate this question.

**Methods** This systematic review included randomised control trials comparing the INSURE and NCPAP for preterm infants with or at high risk of respiratory distress syndrome who had never been intubated before the study entry. Primary outcomes included BPD at 36 weeks postmenstrual age, Death, and “BPD or Death”. A systematic literature search was conducted of MEDLINE, EMBASE, CENTRAL, and CINAHL as well as conference proceedings and trial registrations. Two reviewers independently selected studies and extracted data. Meta-analyses were conducted with a random-effect method using Review