re-intubation was not needed for at least 48h. Brain sonography was done befor extubation and after 48h.sample size was determined with 95% confidence and 90% power. Data was analyzed with spss 11.5 and *Chi-square* test.

Results There were no significant differences in clinical characteristics between the two groups at randomization.

Fifty-four percent (14/25) infants were successfully extubated to NSIMV compared with 52% (13/25) to NCPAP (p =0.78). Infants assigned to NCPAP had higher arterial CO_2 pressure level than those assigned to NSIMV (p=0.002).

Neither procedure induced major adverse effects despite more elevation in IVH grade during SIMV.

Conclusions NSIMV in the post-extubation period is safe, however it's not more effective than NCPAP in preventing re-ventilation.

1781 THE PREDICTIVE FACTORS IN THE PROGRESS OF TRANSIENT TACHYPNEA OF THE NEWBORN

doi:10.1136/archdischild-2012-302724.1781

E Okulu, D Kahvecioğlu, A Kılıç, S Alan, IM Akin, B Atasay, S Arsan. *Department of Pediatrics, Division of Neonatology, Ankara University, Ankara, Turkey*

Aim To determine the clinical risk factors to predict the progress of TTN in late-preterm and term infants.

Methods The infants with the diagnosis of TTN were evaluated retrospectively. Patients were divided into two groups according to the intensity of respiratory support. Group-1 received any ventilatory support, where group-2 only oxygen. Clinical findings, Richardson and Silverman scores were compared.

Results One-hundred-six (19.1%) infants were evaluated (68 in group-1, 38 in group-2). Mean gestational age and birth weight were lower in group-2. The C/S and male gender rates were similar. Richardson scores, Silverman scores, peak-respiratory rates (pRR) and oxygen need (FiO_2) in the first 24-hours were higher, duration of respiratory support and hospitalization were longer in group-1. The cut-off for Richardson score was 3, and patients whose score higher than 3 had a 6.98-fold-risk, the cut-off for Silverman score was 5 and whose score higher than 5 had a 7.46-fold risk, and the cut-off for pRR in first 24-hours was 75/min and whose pRR was higher than 75/min in first 24-hours had a 1.10-fold risk of receiving ventilatory support (95%CI: 2.30–21.18, 2.54–21.89, and 1.035–1.17, p<0.01, respectively).

Conclusions TTN, is usually a benign and self-limited disease and the prognosis is generally excellent. Assessment of Richardson score, Silverman score, and pRR in first 24-hours of patients may be useful in predicting clinical course of TTN. So by predicting of the intensity for ventilatory support in the patients, it is important to plan and provide the appropriate level of care for these infants.

1782 ENDOTRACHEAL TUBE POSITION IN VENTILATED NEONATES - DOES EVIDENCE INFLUENCE PRACTICE?

doi:10.1136/archdischild-2012-302724.1782

[1]G Peh, [1]R Ebel, [1,2]A Sinha, [1,2]S Kempley, [1]S Mohinuddin. *[1]Neonatal Transfer Service, Barts Health NHS Trust; [2]Barts and The London School of Medicine and Dentistry, London, UK*

Background Malpositioned endotracheal tubes (ETT) in ventilated neonates are associated with adverse pulmonary outcomes including unequal surfactant delivery, asymmetric lung expansion and air-leaks.[1] Use of gestation age (GA) based guideline to determine the ETT length at lips resulted in reduction of the need for ETT repositioning from 53% to 8%.[2] This guideline is recommended by ILCOR.[3]

Aim To assess adherence to guidelines and need for ETT repositioning.

Methods Ventilated neonates < 24 hours of age, transferred by a regional transfer service during study periods of January to March (3-months) in the years 2008 (pre-publication[2]) and 2011 (post-publication[2]) were included. Demographic data, ETT size, length at upper-lip, position on chest X-ray and need for repositioning were collected.

Results Similar proportion of ETT's were repositioned during 2008 and 2011 (30% vs 37%, p=0.59). During both periods the proportion of ETT's repositioned were significantly higher (p<0.05) with greater deviation of ET length insertion from the guideline:

Inserted ETT length	Need for repositioning (2008)	Need for repositioning (2011)
ETT at recommended length	3/15(20%)	3/20(15%)
ETT +/-0.5cm deviation from guideline	9/36(25%)	7/21(33%)
ETT >0.5cm deviation from guideline	9/15(60%)	16/29(55%)

Conclusion Adherence to guideline is associated with significant reduction in need for ETT repositioning. Publication of guideline has had limited effect. There is need for improving dissemination of evidence based guidelines to improve outcomes.

1. Thayyil et al. *Am J Perinatol* 2008.
2. Kempley et al. *Resuscitation* 2008.
3. Richmond et al. *Resuscitation* 2010.

1783 HOW SAFE ARE DELIVERY ROOM MANEGEMENTS TO PREVENT EARLY HYPOCARBIA?

doi:10.1136/archdischild-2012-302724.1783

E Okulu, IM Akin, S Alan, A Kılıç, B Atasay, S Arsan. *Department of Pediatrics, Division of Neonatology, Ankara University, Ankara, Turkey*

Background and Aim Clinically determining appropriate respiratory support from the point of delivery to the NICU is difficult and inadvertent overventilation may be common. The aim of the study was to determine whether delivery room managements done by skilled team will produce 'normocarbic' blood gas values in <29 weeks' preterm infants.

Method A prospective cohort study was designed and infants born before 29 weeks' from January 2009 to December 2011 were enrolled. All infants received 100 mg/kg prophylactic surfactant in delivery room. During resuscitation, stabilization, surfactant administration and transport infants were ventilated with a T-piece resuscitator. If respiratory drive was present, infants were extubated to nasal CPAP through short binasal prong. FiO_2 was adjusted to achive SaO_2 of 88–92% which was monitored by pulse oxymeter. Carbon dioxide (CO_2) levels on admission and early NICU hours (0–6 hours) were evaluated.

Results Fifty nine infants were included with a mean gestation age of 26.2±1.7 (23–28.6) weeks and a birth weight of 857±237 (400–1470). The mean pCO_2 levels of the first blood gas analysis was 45.3±9.8 (range 30.4–71.2). Four (6.8%) infants had hypocarbia (pCO_2 < 35 mmHg).

Conclusion To prevent both hyperoxia and hypocarbia from the point of delivery to the NICU is a challenge. More caution is required to prevent hypocarbia and hyperoxia.

1784 RESPIRATORY MORBIDITY IN TERM INFANTS DELIVERED BY ELECTIVE CAESAREAN SECTION: COHORT STUDY

doi:10.1136/archdischild-2012-302724.1784

[1]A Troshani, [2]E Tushe, [2]G Gora, [3]E Vevecka. *[1]Obstetric-Gynecologic University Hospital Nr 1; [2]Pediatric Department, Obstetric-Gynecologic University Hospital Nr 1, Tirana; [3]Pediatric Department, University Hospital 'Mother Thereza, Tirane, Albania*

Aim To investigate the association between elective caesarean sections and neonatal respiratory morbidity and the importance of timing of elective caesarean sections.
Methods Cohort study with prospectively collected data of all elective Caesarean sections on mothers with a gestational age of 37+0 weeks and more, that were performed in our Hospital from 1 January 2011 to 1 January 2012. Multiple pregnancies, fetuses with congenital anomalies, intrauterine deaths, and emergency Caesarean sections were excluded. Primary outcome measures of neonatal respiratory morbidity included transient tachypnoea of newborn, respiratory distress syndrome, persistent pulmonary hypertension of newborn, serious respiratory morbidity (oxygen therapy for more than two days, nasal continuous positive airway pressure).
Results 568 infants were delivered by elective caesarean section. Compared with newborns intended for vaginal delivery, an increased risk of respiratory morbidity was found for infants delivered by elective caesarean section at 37+0 weeks' gestation to 37+6 weeks (odds ratio 3.8, 95% confidence interval 2.4 to 6.5), 38+0 weeks' gestation to 38+6 weeks (3.0, 2.1 to 4.3), and 39+0 weeks' gestation (1.9, 1.2 to 3.0). The increased risks of serious respiratory morbidity showed the same pattern but with higher odds ratios: a fivefold increase was found at 37 weeks (5.0, 1.6 to 16.0).
Conclusions Infants born by elective caesarean delivery at term are at increased risk for developing respiratory disorders compared with those born by vaginal delivery. A significant reduction in neonatal RDS would be obtained if elective caesarean delivery were performed after 39 + 0 gestational weeks of pregnancy.

1785 BRONCHOALVEOLAR LAVAGE IN THE TREATMENT OF MECONIAL ASPIRTION SYNDROME

doi:10.1136/archdischild-2012-302724.1785

[1]V Bankovic, [1]T Nikolic, [1]S Milenkovic, [2]B Otasevic. *[1]Neonatology, Clinical for Gynecology and Obstetrics Clinical Centre of Serbia; [2]Neonatology, Institute for Neonatology, Belgrade, Serbia*

Background and Aims This study was set up to compare two forms of bronchoalveolar lavage (BAL). Lavage with diluted surfactant in saline, and lavage with saline only.
Methods Fifteen term neonates with severe meconial aspiration syndrome (MAS) (needing mechanical ventilation in the first hour and inspiratory oxygen fraction more than 30%) were divided into two groups: I group (surfactant group, n=8) treated with BAL using diluted surfactant (6mg/ml), and II group (saline group, n=7), treated with BAL using saline. Both groups were treated with surfactant after BAL.
Results Mean gestational age, Apgar score in the first and the fifth minute, and birth weight did not differ significantly between groups (p>0.05). Duration of mechanical ventilation did not differ between groups (12.5 days vs 17.29; p>0.05), as well as the length of mean length of oxygen therapy (Igroup 6.57 days and 4.57 II group, p>0.05). Also, there was no significant difference in the length of hospital stay (12.5 days vs 17.29; p>0.05).
Conclusion Diluted surfactant BAL and saline BAL in the first hours of life combined with a dose of surfactant have the same effect on the length of mechanical ventilation length of oxygen therapy and length of hospital stay.

1786 CHANGE IN EXPRESSION OF PENTRAXIN3-MRNA IN INFECTIOUS FETAL LUNG TISSUES RELATED WITH PREMATURE RUPTURE OF MEMBRANES

doi:10.1136/archdischild-2012-302724.1786

J Liu, N Yang, XF Wang. *Department of Neonatology and NICU, Bayi Children's Hospital Affiliated With General Hospital of Beijing Military Command, Beijing, China*

To explore the change in the expression of pentraxin 3 (PTX3)-mRNA and its clinical significance in fetal lung tissues with intrauterine infection related to premature rupture of membranes (PROM).

1. From Oct.2010 to Oct.2011, a total of 12 cases of fetal death, stillbirth, abortion or miscarriage of fetal lung specimens were assigned to this study. Fetal lung samples were devided into two groups according to with or without intrauterine infection related to PROM.
2. Fetal lung tissue specimens were fixed with 4g/L of paraformaldehyde and paraffin embedded within 2h, 4mm serial section, and then HE staining. Light microscope was used to identify whether infection/inflammatory response existed in fetal lung tissues or not. Total RNA samples from fresh lung tissure were reverse transcribed into Cdna. Gly ceraldehyde-3-phosphate (GAPDH) was used as reference gene. qRT-PCR and relative quantitative analysis method were performed to detect the expression of mRNA in lung tissue in two groups. Relative expression of Mrna in two groups were compared by ΔCt method of relative quantification.

The results showed that:

1. There was a larger number of neutrophil infiltration, red blood cells leakage, viscous liquid and inflammatory cell exudation in fetal lung tissues of study group.
2. Study group displayed higher expression of PTX3-mRNA than in control group (5.77±0.68 vs. 4.71±0.40, p=0.002).

Conclusions The expression of PTX3-mRNA was significantly increased in fetal lung tissues with intrauterine infection related with PROM, which can be regarded as a sensitive index for the early diagnosis of fetal intrauterine infection when PROM exists.

1787 MEASURING EXHALED CO_2 DURING MASK VENTILATION OF PRETERM INFANTS AT BIRTH; A NOVEL TOOL FOR ASSESSING LUNG AERATION?

doi:10.1136/archdischild-2012-302724.1787

[1,2,3]G Schmölzer, [3,4]O Kamlin, [3,4]P Davis, [5]S Hooper. *[1]Department of Pediatrics, University of Alberta, Edmonton, AB, Canada; [2]Dept. of Pediatrics, Medical University of Graz, Graz, Austria; [3]Neonatal Services, The Royal Women's Hospital; [4]Dept. of Obstetrics & Gynaecology, The University of Melbourne; [5]The Ritchie Centre, Monash Institute for Medical Research, Monash University, Melbourne, VIC, Australia*

Background Positive pressure ventilation (PPV) remains the cornerstone of respiratory support after birth. Although, gas going in and out of the lung can be measured with a respiratory function monitor, gas exchange (or effective ventilation) may only be determined by presence of exhaled CO_2.
Aim To identify non-invasive clinical tools to assess lung aeration in infants receiving PPV after birth.
Methods Deliveries of preterm infants < 32 weeks gestation were attended. During PPV we measured airway pressures, gas flow and tidal volume (V_T), exhaled CO_2, heart rate and oxygen saturation. We compared delivered V_T and heart rate before and after exhaled CO_2 was measured.
Results In 10 preterm infants exhaled CO_2 and respiratory functions were recorded; their mean (SD) birth weight and gestational age was 27 (2) weeks and 902 (287) grams, respectively. A median (IQR) of 23 (17–43) inflations was delivered with no exhaled CO_2. The median (IQR) V_T when no CO_2 was measured was 1.9 (1.0–3.8) mL/kg compared to 8.3 (2.1–10.3) mL/kg when exhaled CO_2 was measured (p<0.0025) 1). The mean (SD) heart rate while no CO_2 was exhaled was 61 (6) beats per minute compared to 104 (41) beats per minute 60 seconds after CO_2 was measured.
Conclusion Delivered V_T and heart rate was significantly lower when no CO_2 was exhaled. The presence of exhaled CO_2 was accompanied by increases in HR. Combined V_T measurements, changes in heart rate and detection of exhaled CO_2 may provide information on lung aeration of infants transitioning after birth.