Background/aims  Intra-tracheal instillation of surfactant/budesonide significantly improves pulmonary status in animals. The aim is to investigate if this therapy would decrease the incidence of BPD or death.

Methods and materials  This randomised controlled trial comprised 265 VLBW infants who had: 1) severe radiographic RDS, 2) requirement of IMV (FiO₂ ≥ 0.5) shortly after birth: 131 received surfactant (S) (100 mg/kg) and budesonide (B) (0.25 mg/kg) (S+B gr.), 134 received S only (100 mg/kg) (S gr.). The sample size was determined based on the hypothesis that 60% of infants in the S group and 40% in the S+B group would die or develop BPD defined at 34 weeks postm. age.

Results  The S+B infant had lower tracheal aspirate interleukins 1, 6 and 8, lower OL, lower MAP in the early course of therapy, higher chance to wean to room air (p = 0.03). No significant immediate and long term adverse effects were observed. * NIH criteria

Conclusions  In VLBW infants with severe RDS, administration of surfactant/budesonide significantly decreases the incidence of BPD and BPD or death with no apparent adverse side effects.

**O-022**

**TREATMENT OF PRETERM (PT) INFANTS WITH LATE SURFACTANT DOES NOT INCREASE SURVIVAL WITHOUT BRONCHOPULMONARY DYPLASIA (BPD) AT 36 WK PMA**

**Abstract O-023 Table 1**

<table>
<thead>
<tr>
<th>PH measures</th>
<th>Septal TDI velocities</th>
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<tbody>
<tr>
<td>Candidate biomarker</td>
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<td>BNP</td>
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<td>PLGF</td>
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</tbody>
</table>

Numbers represent r values, significant correlations in bold (p < 0.05)

**O-023**

**CARDIAC BIOMARKERS OF PULMONARY HYPERTENSION AND CARDIAC DYSFUNCTION IN CONGENITAL DIAPHRAGMATIC HERNIA**

Cardiac Failure in Congenital Diaphragmatic Hernia: Cause or Consequence?

**Abstract O-023 Table 1**

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Background and aims  In infants with congenital diaphragmatic hernia (CDH) plasma peptides which mediate, or are produced in response to pulmonary hypertension (PH) and cardiac dysfunction may be useful clinical biomarkers of disease severity. This study investigated correlation between candidate biomarkers and existing measures of oxygenation, PH, and cardiac function in CDH.

Methods  Prospective observational study. Plasma samples were obtained for measurement of BNP, NTpro-BNP VEGF-A, PLGF, and Troponin1. Concomitant echocardiographic measures of pulmonary artery pressure (derived from TR jet velocity [PAPest]; and PDA flow ratio [PDA R:L]) and cardiac function (Tissue Doppler Imaging of systolic [S'] and diastolic [E'] velocities and tricuspid valve diastolic flow ratio [TV_E:A]) were obtained. Oxygenation index was calculated.

**Oral abstracts**
Cerebral Oxygenation

**O-025**

**DO SUSTAINED LUNG INFLATIONS DURING RESUSCITATION OF PRETERM INFANTS AFFECT CEREBRAL BLOOD VOLUME AND CEREBRAL REGIONAL OXYGEN SATURATION?**

B Schwabegger, G Pichler, C Binder, N Baik, B Urlesberger, Division of Neonatology, Medical University of Graz, Graz, Austria

10.1136/archdischild-2014-307384.95

**Background**

Sustained lung inflations (SLI) promote lung aeration and alveolar recruitment.

**Methods**

Preterm infants ≥28+0 to <34+0 gestational weeks and need for respiratory support (RS) during postnatal transition were included. Within the first 15 min of life of each subject ΔHb and cTOI were continuously detected by using 'NIRO-200-NX' (Hamamatsu, Japan).

**Results**

Do SLI during resuscitation affect CBV and cTOI?

**Conclusions**

Initialising RS immediately after birth by using SLI in preterm infants did not show significant differences in CBV and cTOI compared to control group.

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**O-024**

**OUTCOME RESEARCH IN 77 PATIENTS WITH PULMONARY ARTERIAL HYPERTENSION RECEIVING SILDENAFIL: A DOUBLE-BIND, RANDOMISED CONTROLLED STUDY**

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10.1136/archdischild-2014-307384.93

**Purpose**

PAH resulting from CHD – a major cause of postoperative morbidity and death. Sildenafil: selective inhibitor of phosphodiesterase-5 - an effective and promising pulmonary vasodilator, with minor reverse effects.

**Methods**

This monocentric, randomised placebo-controlled study evaluated the efficacy, safety, tolerability of oral Sildenafil in children with severe PAH secondary congenital shunts (simple (14 patients), mixed (35), complex (28)). 77 PAH patients (35 – repaired shunts, 31 – palliative, 11 inoperable) assigned to placebo or Sildenafil – dose of 1–2 mg/kg/day each 8h: 6–12 months. Sildenafil group - 38 (mean age 19.9 ± 5.0 months: 16 boys/22 girls); placebo – 39 (mean age 21.7 ± 7.8 months: 22 boys/17 girls). Research protocol: FC NYHA; 6-min walk test; O2 saturation; echocardiography PAPm, myocardial performance index (MPI/Tei index), right cardiac catheterisation – PVRI; questionnaire for adverse reactions was available.

**Results**

Sildenafil patients improved FC from 3.16 ± 0.1, 1–2, 15 ± 0.1 (p < 0.001); effort tolerance (+132.5 ± 17.4m – 6 months and +184.3 ± 21.2 m - 12 months of treatment), (p < 0.001); O2 saturation (+3.1 ± 0.5%) but placebo (+0.6 ± 0.3%), (p < 0.001); PAPm decreased: 22.0 ± 2.22 at 6 months with 19.03 ± 2.3 mmHg - 12 months (p < 0.001); PVRI decreased: 2.45 ± 0.19 Uwood·m² (p < 0.001); Tei index with 0.15 ± 0.01(+31%) to initial (p < 0.001). In placebo group only PVRI diminished from 6.4 ± 0.1 to 5.7 ± 0.3 UW/m² (p < 0.05). No death in the Sildenafil group, but 5 in placebo.

**Conclusions**

Sildenafil – efficient in treating severe PAH secondary to congenital shunts, but even more effective in children after cardiac surgery. Sildenafil improves FC, effort tolerability, O2 saturation, RV global function, diminishing PAPm and PVRI compared with placebo. Sildenafil has good safety, tolerability, favourable impact on life quality – insignificant adverse reactions.