Results 480 biomarker assays were performed in 80 samples from ten infants. Of correlated positively with BNP, NTproBNP, and VEGF-A, and negatively with PLGF (Table 1). PH measures correlated negatively with PLGF and positively with NTproBNP and Troponin1. Measures of diastolic function correlated negatively with Troponin1 and VEGF-A, and positively with PLGF.

Conclusions 1) Plasma biomarker analysis is feasible in infants with PH in CDH.

2) Worsening disease status (impaired oxygenation, PH, diastolic dysfunction) was associated with elevated BNP, NTproBNP, Troponin1 and VEGF-A, and reduced PLGF.

3) The utility of these peptides as disease biomarkers, prognostic indicators, and their role in disease pathogenesis merits further investigation.

Cerebral Oxygenation

O-025 DO SUSTAINED LUNG INFLATIONS DURING RESUSCITATION OF PRETERM INFANTS AFFECT CEREBRAL BLOOD VOLUME AND CEREBRAL REGIONAL OXYGEN SATURATION?

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Background and aim Sustained lung inflations (SLI) promote lung aeration and alveolar recruitment. Changes in total haemoglobin (ΔHb) and cerebral tissue oxygenation index (cTOI) measured by near-infrared spectroscopy (NIRS) give information on changes in cerebral blood volume (CBV) and regional oxygen saturation, respectively.

Do SLI during resuscitation affect CBV and cTOI?

Methods Preterm infants ≥28+0 and <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).

Two groups were compared based on RS: SLI group: RS was started by applying 1–2 SLI for 15sec at 25 cmH2O and continued by continuous positive airway pressure (CPAP) or positive pressure ventilation (PPV).

Control group: CPAP/PPV depending on respiratory insufficiency.

Results 40 preterm infants (23 female) with mean gestational age of 32+1 weeks (±3 days) and mean birth weight of 1707 g (±470) were included. Demographic data did not show significant differences between groups.

Median ΔHb was in SLI/control group -0.38/0.20 μM 30 sec after initialising RS, -1.33/-0.43 μM after 60 sec, 3.37/2.30 μM after 2 min, -0.19/-0.46 μM after 3 min, 2.52/1.05 μM after 5 min and 2.93/-4.78 μM after 10 min.

Median cTOI increased in SLI/control group from 49/47% 30 sec after initialising RS to 54/50% after 60 sec, to 56/51% after 2 min, to 56/58% after 3 min, to 61/61% after 5 min, and to 65/69% after 10 min.

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

O-026 INFLUENCE OF PATENT FORAMEN OVALE (PFO) ON REGIONAL CEREBRAL OXYGEN SATURATION DURING IMMEDIATE NEONATAL TRANSITION

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Background During postnatal transition there is a significant association between regional cerebral oxygen saturation of the brain and the shunt via the ductus arteriosus (DA). The influence of the patent foramen ovale (PFO) on the cerebral regional saturation remains as a question.

Aim The aim of the study was to investigate the influence of the PFO on the cerebral oxygen saturation, measured by near-infrared spectroscopy (NIRS) after 15 min of neonatal transition.

Methods Observational study. Term neonates (>37 weeks of gestational age) after elective caesarean section and without any
Background and aims Microcirculation is important to ensure adequate tissue oxygenation and nutrient delivery. Clinical findings, perfusion index (PI) measurements are used to assess microcirculation. Side stream dark field (SDF) imaging is a noninvasive method of assessing microcirculation by means of a videomicroscope.

This study aimed to assess microcirculation in healthy term newborns born either by spontaneous vaginal delivery (SVD) or caesarean section (C/S).

Methods The assessments were done within the first 30 min of life (T0) and repeated at the 24th hour of life (T1). Microcirculation was assessed from axillary skin by using SDF technique with Microscan device where total and perfused vessel density (TVD, PVD) and microvascular flow index (MFI) were calculated, as well as by using microcirculation score (MS) based on capillary refill time, skin colour and warmth and PI measured by Masimo Radial7 pulse oximeter. Vital signs were also recorded. Nonparametric tests were used for statistical analysis.

Results Twelve newborns born by SVD and 25 newborns born C/S were included. The mean, SD, median values for temperature, TVD, PVD, MFI, MS, and PI at T0 and T1 are as follows:

T0: Temp: 36 ± 0.46(36.1), TVD: 18.79 ± 4.19(18,81), PVD: 18.73 ± 1.5(18,81), MFI: 3.07 ± 0.25(3), MS: 2.14 ± 1.36(2), PI: 1.84 ± 0.97(1.75),

T1: Temp: 37.1 ± 0.26(37.1), TVD: 18.93 ± 1.18(18,73), PVD: 18.9 ± 2.13(18,73), MFI: 3.17 ± 0.32(3.1), MS: 1.65 ± 0.48(2), PI: 1.9 ± 0.82(2).

Temperature was significantly and MFI was slightly higher at T1 compared to T0 (p = 0.001 and p = 0.04).

No difference was observed between SVD or C/S groups or at different times within the same group.

Conclusions Peripheral microcirculation in general is not affected by mode of delivery in term healthy newborns and doesn’t seem to change significantly within the first 24 h of life.