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 5min 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 caesarian section and without any...