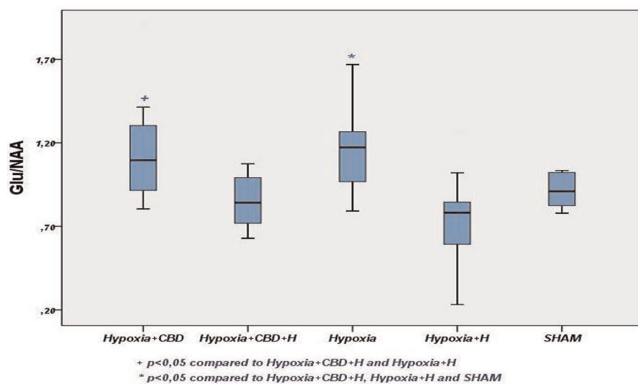


Abstract PO-0483d Figure 1



Abstract PO-0483d Figure 2

neuroprotective agent. The aim of this study was to explore the neuroprotective properties of CBD after hypoxia ischemia in newborn piglets.

Materials and method 54 anaesthetised piglets (age 12–36 h) were randomised to either undergo global hypoxia (n = 48) until the base excess reached -20 mmol/L or the mean arterial blood pressure dropped below 20 mm Hg or to the SHAM group (n = 6). After hypoxia piglets were randomised to the different study groups: Hypoxia+CBD (1 mg/kg) (n = 12), Hypoxia+CBD(1 mg/kg)+hypothermia (n = 12), hypoxia (n = 12) or hypoxia+hypothermia (n = 12). 9.5 h after end of hypoxia the piglets were euthanized and samples from hippocampus were snap frozen in liquid nitrogen. Levels of lactate (lac), n-acetylaspartate (NAA) and glutamate (glu) were measured by proton-magnetic-resonance-spectroscopy ($^1\text{H}^+$ -MRS)- and ratios predictive of neurodevelopmental outcome after hypoxic-ischaemic encephalopathy in newborns were calculated (lac/NAA and glu/NAA). Outliers > 2.5 SD away from mean were removed before analysis.

Results

Discussion Hypoxia significantly increased both Lac/NAA and Glu/NAA ratios. Hypothermia groups were comparable to SHAM while there were no significant effects of CBD on these MRS biomarkers. The difference in the way of inducing and the severity of hypoxia-ischemia in our model might explain this lack of effect compared to previously published studies.

Neonatal Cardiovascular

PO-0484 NEONATAL THYROTOXICOSIS WITH SEVERE SUPRAVENTRICULAR TACHYCARDIA: CASE REPORT AND REVIEW OF THE LITERATURE

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Background and aims Neonatal thyrotoxicosis is a rare condition caused by the transplacental passage of thyroid stimulating immunoglobulins from mothers with Graves' disease. We report a case of neonatal thyrotoxicosis with concurrent supraventricular tachycardia.

Case Report The female infant, who was born by caesarean section due to breech delivery and meconium in the amniotic fluid at 36 weeks of gestation, presented with tachycardia on day 7. Her heart rate was between 260–300 beats/minute, and electrocardiogram revealed ongoing supraventricular tachycardia. Sotalol was effective after two cardioversions in maintaining sinus rhythm. Our patient was diagnosed to have thyroid storm due to thyrotoxicosis. Intensive medical therapy was started with 10 mg/kg/day of propylthiouracil, 1 drop of Lugol's iodine solution three times per day, 2 mg/kg/day propranolol, and 2 mg/kg/day of oral prednisolone. After the diagnosis of neonatal thyrotoxicosis, the mother in our case was found out to have hyperthyroidism with TSH: 0.035 $\mu\text{IU/mL}$ (normal: 0.35–4.94). She was immediately started methimazole treatment.

Conclusions The purpose of presenting this patient is to emphasise the importance of prenatal care and follow-ups. Obstetricians, endocrinologists, and paediatricians need to work together for better management of Graves' disease associated pregnancies.

PO-0485 CEREBRAL BLOOD FLOW AND OXYGENATION CHANGES FOLLOWING BLOOD TRANSFUSION IN PRETERM INFANTS

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Background and aims We have shown blood transfusion (BT) significantly reduces cerebral blood flow and improves cerebral tissue oxygenation in preterm infants during the first week of life.¹

Aim To study the effect of BT on cerebral blood flow and oxygenation during the 2nd to 4th week of life in preterm infants.

Methods Pre and post-BT Anterior Cerebral Artery (ACA) peak systolic velocity, mean velocity, resistance index (RI) and pulsatility index (PI), and Superior Vena Cava (SVC) flow were measured using Doppler USS. Pre, during and post-BT cerebral oxygenation were measured using Near Infra-Red Spectroscopy (NIRO 300).

Pre and post-BT measurements were compared by paired t-test using SPSS 22.0.

Results 21 preterm infants with median (range) gestational age of 25(23–30) weeks, birth weight 805(630–1250) grams, chronological age 14(8–27) days and pre-BT Haemoglobin 10.3(7.7–12.2) g/dl were studied.

Pre-BT ACA peak systolic (0.37 m/s) and mean velocity (0.19 m/s) decreased significantly post-BT (0.32 and 0.16 respectively; $p < 0.01$). There was no significant change in RI ($p = 0.57$) and PI ($p = 0.53$) in the ACA and SVC flow ($p = 0.16$) post-BT.

The cerebral HbO₂ increased significantly (mean difference 12.53 μ M; $p < 0.001$) post-BT. The pre-BT mean cerebral tissue oxygenation index (TOI) (66.5%) increased significantly post-BT (73.6%; $p < 0.001$).

Conclusion The cerebral blood flow velocity decreased but there was no change in SVC flow volume; cerebral tissue oxygenation improved following BT during the 2nd to 4th week of life in preterm infants.

REFERENCE

1 Banerjee J et al. PAS conference May 2014

PO-0486 CEREBRAL HAEMODYNAMIC RESPONSE TO BLOOD TRANSFUSION VARIES WITH CHRONOLOGICAL AGE IN PRETERM INFANTS

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10.1136/archdischild-2014-307384.1131

Background and aims We have shown that cerebral blood flow decreases following blood transfusion (BT) in extreme preterm infants during the first week of life.¹

Aim To investigate the cerebral blood flow changes following BT in relation to the chronological age of preterm infants.

Methods Preterm infants who received BT during the first 10 weeks of life were included. Pre and post-BT Anterior Cerebral artery (ACA) mean velocity, resistance index (RI) and pulsatility index (PI), and Superior Vena Cava (SVC) flow were measured using Doppler USS. Pre and post BT measurements were compared by paired t-test using SPSS 22.0.

Results 59 BT events were studied, 20 received BT during 1st week (Group 1), 21 during the 2nd to 4th week (Group 2) and 18 during >4th week (Group 3) of age. The median age (range) at BT was 5 (1–7), 14 (8–27) and 45 (29–68) days for group 1, 2 and 3 respectively. In all 3 groups the pre-BT ACA mean velocity decreased significantly post-BT ($p < 0.03$) and there was no significant change in RI and PI in the ACA. The pre-BT mean SVC flow decreased significantly post-BT in Group 1 and Group 3 ($p = 0.03$ and <0.001 respectively), but this was not significant in the Group 2 infants ($p = 0.16$).

Conclusion The effect of BT on cerebral haemodynamics was more prominent during the first week and after 4th week of age in preterm infants.

REFERENCE

1 Banerjee J et al. PAS Conference May 2014

PO-0487 CONSTRAINING THE NEED FOR LIGATING A SIGNIFICANT PATENT DUCTUS ARTERIOSUS AFTER IBUPROFEN THERAPY IN PRETERMS. A RETROSPECTIVE ANALYSIS FROM 10/2009–12/2013

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Background and aim The need for ligation of a patent ductus arteriosus with a haemodynamically significant left to right shunt (hPDA) on echocardiography remains controversial. Aim was to determine echocardiographic and clinical differences of preterms with hPDA after ibuprofen therapy who underwent ligation and those who had no further intervention.

Methods Echocardiographic and clinical parameters of preterms with hPDA (< 30 weeks of gestation) were retrieved for the “ligation group” before surgical ligation and for the “non-ligation group” after the last ibuprofen cycle. Recruitment criteria for hPDA were an enddiastolic maximal velocity of the left pulmonary artery (LPAdia) $\geq 0,2$ m/s and/or a ratio of the left atrium/aorta (LA/Ao-ratio) $\geq 1,4$. Preterms who died before ligation/ductal closure were excluded.

Results In 53 of 461 preterms a hPDA was still present after ibuprofen. Thirty-nine preterms were included to the “ligation-group”, 14 to the “non-ligation group”. Significant differences were detected for diastolic and systolic blood pressure, LPAdia, LA/Ao-ratio, stroke volume, backward flow in the aorta abdominalis and the period until total enteral nutrition. Further differences were detected in airway support, hPDA flow patterns, gestational age, intraventricular haemorrhage and necrotising enterocolitis before and after ductal closure.

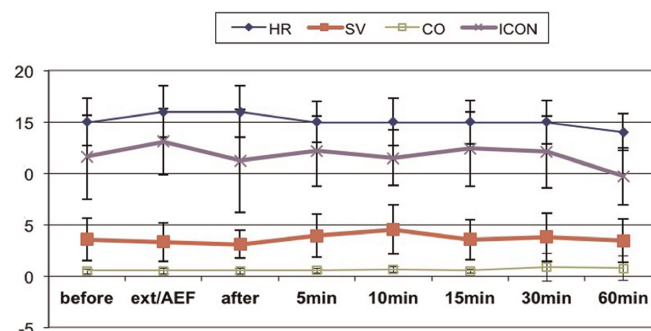
Conclusions The hPDA of the “ligation-group” was haemodynamically more relevant and preterms were more morbid than in the “non-ligation group”. The observed differences reflect our policy of constraining the need for ligating a hPDA on echocardiography to selective ligation subject to both the severity of echocardiographic findings and the hPDA’s clinical impact.

PO-0488 NON-INVASIVE HAEMODYNAMIC MONITORING USING ELECTRICAL CARDIOMETRY IN NEONATES DURING RESPIRATORY PROCEDURES

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Background Electrical cardiometry (EC: Osypka Medical, Berlin, Germany and La Jolla, California, USA) is a new non-invasive technique for haemodynamic monitoring of neonates. No data are available for preterm babies during respiratory procedures, such as elective extubation or chest physiotherapy. We designed this study to clarify if these procedures have any haemodynamic consequences.



Abstract PO-0488 Figure 1