

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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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.

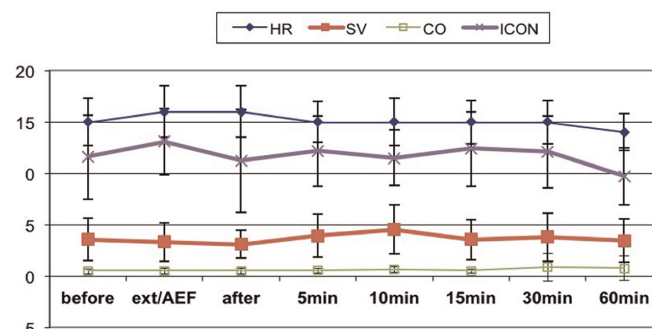
Conclusions The hPDA of the “ligation-group” was haemodynamically more relevant and preterms were more morbid than in the “non-ligation group”. The observed differences reflect our policy of constraining the need for ligating a hPDA on echocardiography to selective ligation subject to both the severity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