Results It is established that the nephroblastoma increases blood flow to the main artery of the affected kidney compared with the contralateral (p=0.00003). According to our data the volume of the affected organ with nephroblastoma correlated with blood flow in its main artery (r=0.45; p<0.05). Such dependence can reflect the pathological circulation of the affected kidney. It also reflects the need to change the absolute amount of blood flow in tumor growth. At the same time in a healthy kidney specific blood flow much higher than that of the affected (p=0.00001). Indices of relative blood flow affected and contralateral kidneys were 1.32 (1.04–2.13) ml/cm²/min and 5.46 (3.73–6.78) ml/cm²/min, respectively.

Conclusions Thus, the hemodynamic characteristics of the affected nephroblastoma kidney were studied. Specific blood flow of affected organ with a continuous functional activity is significantly less with respect to the contralateral (not affected). These data may prove useful in the development of differential diagnostic criteria for distinguishing nephroblastoma and adrenal neuroblastoma at the stage of diagnosis.

BLOOD PRESSURE AND HEART RATE DO NOT REFLECT CARDIAC OUTPUT IN CRITICALLY ILL CHILDREN

doi:10.1136/archdischild-2012-302724.0779

779

A Nusmeier, PJ Goossens, JG van der Hoeven, J Lemson. Intensive Care, Radboud University Nijmegen Medical Center, Nijmegen; Technical Medicine, University of Twente, Enschede, The Netherlands

Introduction Treatment to support the circulatory state is often based on the interpretation of clinical parameters while advanced hemodynamic monitoring is not always available or applied in children. Cardiac output(CO) measurement using the transpulmonary thermodilution(TPTD) technique is the gold standard in pediatric patients. We studied the predictive value of clinical parameters of (changes in) CO by comparing the blood pressure and heart rate values with intermittent CO TPTD measurements.

Methods A retrospective observational study was performed in a heterogenic critically ill pediatric patient population. Doses of inotropics, if administered, was registered to study their influence on cardiac output using the Qp/Qs value can lead to hypoxia, brain injury, for Qp/Qs < 1.0 to insufficient tissue perfusion and lung edema for Qp/Qs > 1. The aim of the study was to develop routine method for Qp/Qs measurement to identify PPS cannot be replaced by clinical assessment solely.

Disclaimer Supported by the Spanish Health Ministry and the SAMID network.

NEW DILUTION METHOD FOR QP/QS MEASUREMENT IN PATIENTS WITH SINGLE VENTRICLE (SV) ANATOMY

doi:10.1136/archdischild-2012-302724.0782

N Krivitski, V Kisluhkin, N Thuramalla, A Kriksunov. Transonic Systems Inc., Ithaca, NY, USA

Background and Aims Major challenge for treatment of Hypoplastic left heart syndrome by Norwood procedure is in achieving the adequate Qp/Qs value. The absence of routine method of assessing the Qp/Qs value can lead to hypoxia, brain injury, for Qp/Qs < 1.0 or to insufficient tissue perfusion and lung edema for Qp/Qs > 1. The aim of the study was to develop routine method for Qp/Qs assessment for PICU and NICU patients.

Method development: A mathematical model of indicator movement for SV anatomy was developed. After intravenous injection and mixing in SV the first portion of the indicator enters systemic
Background and Aims PTBI is the leading cause of death and long-term morbidity. Current recommendations for the management of severe PTBI (Glasgow Coma [GCS] score ≤8) indicate that ICP monitoring is appropriate in infants and children (Option). The most reliable methods of ICP monitoring are ventricular catheters and intra parenchymal systems. The aim of this study is to evaluate the management of PTBI based on continuous monitoring of intraparenchymal ICP in a PICU in Algeria.

Methods Between January 2005 and December 2009 we collected 308 PTBI, 57 patients had intraparenchymal ICP monitoring. The consensus is to treat ICP exceeding the 20 mmHg threshold, and to optimize cerebral perfusion pressure (CPP).

Results The mean age was 8 years, hypoxia and hypotension were frequent at admission, median GCS after resuscitation = 6, ICP monitoring was set up by the intensivist in the PICU after an average age of 13 hours after trauma. Intracranial hypertension was detected and treated (mannitol, hyperventilation and thiopental) in more than 90% of cases. The average time of ICP monitoring was 5 days. No complications (infection, hemorrhage) with this technique were detected.

Conclusion The etiology and the pathophysiology of raised ICP in PTBI is a complex challenge for the intensivist. CPP and ICP were the first brain-specific targets for goal-directed therapies enacted in PTBI. In this study, ICP monitoring allows to detect intracranial hypertension and guide treatment better than when this technique is absent even if it is not a standard of the recommendations.

784 SEEKING FOR DEFINITIONS OF POOR PERFUSION STATES (PPS) IN LOW BIRTH WEIGHT INFANTS (LBWI) (PART I)

doi:10.1136/archdischild-2012-302724.0784

MC Bravo, P López-Ortego, L Sánchez, J Riera, F Cabañas, E Pérez-Fernández, J Quero, A Pellicer. La Paz University Hospital, Department of Neonatology; Bio-Engineer and Nanotechnology Department, Politecnic University of Madrid; Division of Statistics, La Paz University Hospital, Madrid, Spain

Background and Aims Echocardiography-derived low superior vena cava flow (SVCF) associates intraventricular haemorrhage, neurodisability and death. The weaknesses of the method relate to its variability. We aim to explore the relationship between two SVCF cut-off values to define PPS in LBWI and the patients’ short-term neonatal co-morbidities.

Methods One hundred LBWI [27.4 (2) wks; 1014 (316) g] who reached illness score below threshold, underwent early (<12h) and serial echocardiography for the first 96hs after birth. The primary outcome was low SVCF prevalence according to two thresholds: <41 ml/k/min and [<41 ml/k/min + SVCF repeatability index (RI)] (RI is twice the standard deviation of the differences divided by the mean of all the measures). Secondary outcomes were short-term neonatal clinical outcomes in relation to SVCF status.

Results SVCF<41 ml/k/min prevalence was 30% and was associated with immaturity (p=0.02), caroamino-arthritis (0.007), advanced resuscitation at birth (0.004), lower Apgar scores (p<0.01) and postnatal ischemic events (bowel perforation or arterial vasospasm) (p=0.002). At SVCF <51 ml/k/min (41 ml/k/min + repeatability index) cut-off value, the PPS prevalence was 50%; in addition to the above-mentioned co-morbidities trends showed an association between PPS and combined adverse outcome (death or intracranial haemorrhage).

Conclusions Low SVCF is highly prevalent in the sick LBWI during the early postnatal period. The association of low SVCF with ischemic events and adverse outcome supports this biomarker as an indicator of PPS.

Disclaimer No conflict of interest. Study supported by the Spanish Health Ministry, SAS/2481/2009, the SAMID network (RD08/0072/0018).