newborn: 3(30%) prenatally, 4(40%) by physical examination before discharge and 3(30%) after hospital discharge. Since pulsoximetry screening (May 2013), there have been 4 patients (out of 3068 deliveries) with CCHD, all of them diagnosed before hospital discharge (2 prenatally, 2 by physical examination and pulsoximetry). There were 2 false positives (0,06%), one of them was diagnosed of sinus inversus totalis, probably related to Kartagener syndrome.

Conclusion Conventional screening for congenital heart disease can lead to a significant rate of unrecognised CCHD. Pulsoximetry may be a useful screening test, false-positive rate was particularly low (<0,1%).

More studies are needed to assess its long-term real value and economic impact in our health system.

### PO-0509

**FUNCTIONAL ECHOCARDIOGRAPHY AND MULTISITE TISSUE OXYGENATION MONITORING IN PRETERM INFANTS WITH CLINICAL SEPSIS**

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10.1136/archdischild-2014-307384.1153

**Background** Diagnosing circulatory failure in preterm infants with sepsis is challenging. Multisite Near-infrared spectroscopy (NIRS) monitoring and functional echocardiography are non-invasive tools to assess micro- and macrocirculation. Our aim was to assess the correlation between both monitoring methods in preterm infants with clinical sepsis.

**Methods** Prospective exploratory cohort study. We included preterm infants with clinical sepsis. Functional echocardiography was performed twice, once within 48 h of sepsis work-up and once at least 24 h later. We measured cerebral, renal, and intestinal tissue oxygen saturation using NIRS during an hour of stable measurement and pulseoximetry. There were 2 false positives (0,06%), one of them was diagnosed of sinus inversus totalis, probably related to Kartagener syndrome.

**Results** We included 24 infants (median GA=27.7 wks, BW=928g, PNA=11.8d). In seven infants only the first echocardiography was performed. Correlation coefficients between (changes in) NIRS-measurements and (changes in) functional echocardiography measurements are displayed in Table 1.

**Conclusion** RVO-PFO and LVO-DA flow, indicators of systemic blood flow in preterm infants with shunts, were negatively associated with intestinal FTOE, but not with renal and cerebral FTOE. This indicates that a compromised macro circulation in preterm infants with clinical sepsis is associated with low intestinal but not cerebral or renal perfusion. Furthermore, our results suggest that macro circulatory changes during sepsis do not co-occur with changes in microcirculatory indices in various organs.

### PO-0510

**INHIBITION OF PENTOSE PHOSPHATE PATHWAY AND NADPH OXIDASE IMPAIRED THE RESPONSE OF CHICKEN DUCTUS ARTERIOSUS TO OXYGEN**

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10.1136/archdischild-2014-307384.1154

**Introduction** NADPH derived from the pentose phosphate pathway (PPP) is a key system involved in maintaining the function of several important redox and antioxidant defense mechanisms. NADPH oxidases contain a catalytic NOX subunit that transfers electrons from NADPH to oxygen, thereby forming reactive oxygen species (ROS). Normoxic contraction of the ductus arteriosus (DA), such as occurs at birth, appears to be dependent upon the increase of ROS in DA smooth muscle cells. We hypothesised a role for NOX-derived ROS in the signalling pathway of oxygen-induced contraction of the DA.

**Methods** We investigated the effects of the inhibition of PPP or NOX in the ex vivo response of chicken DA to oxygen. Experiments were performed in myograph-mounted DA rings (pulmonary and aortic sides) isolated from chicken embryos incubated for 19 days (total incubation: 21-d).

**Results** Exposure to oxygen (21%) induced a sustained contractile response in the pulmonary but relaxation in the aortic side of 19-d DA. Incubation with the PPP inhibitor epiaandrosterone or with the NOX inhibitors GKT-136901, VAS2870 and VAS3947 elicited a partial or complete impairment of oxygen-induced contraction. Phenylenephrine- and KCl-induced contractions of chicken DA were impaired by epiaandrosterone and VAS3947 but not by the other NOX inhibitors. Moreover, VAS3947 evoked an irreversible impairment of the contractility of the vessel. Oxygen-induced relaxation in the aortic part of the DA was not affected by NOX inhibitors.

**Conclusions** Our data indicate that PPP and NADPH oxidase activation are events involved in the signalling cascade of normoxic contraction of chicken DA.
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Arch Dis Child 2014 99: A415
doi: 10.1136/archdischild-2014-307384.1153

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