Background and aims B-type natriuretic peptide (BNP) and N-terminal-pro-BNP (NTproBNP) have been shown to correlate with the size of patent ductus arteriosus (PDA) in preterm infants. We investigated whether BNP or NTproBNP is more accurate for assessment of a PDA.

Methods Prospective observational study. Preterm infants born.

Results 60 infants were recruited, 58 had complete datasets. The cohort’s mean (SD) gestational age was 27.3 (2.5) weeks and had a mean (SD) birth weight of 1032 (315) grams. 46 ml for infants with PDA, 190 (95.5 – 514.5) pg/ml for infants without PDA. Median (IQR) NTproBNP levels: 10858.5 (6319 – 42108) pg/ml for infants with PDA, and 7488 (3363 – 14227.5) pg/ml for infants without PDA. Both BNP and NTproBNP showed a significant correlation with PDA size in this cohort; BNP R = 0.35 (p = 0.0066); NTproBNP R = 0.31 (p = 0.018).

Conclusion BNP and NTproBNP were closely correlated to PDA size. Both markers were useful for assessment of PDA size in this cohort of very preterm infants.

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O-032 SEROTONIN IS A SELECTIVE VASOCONSTRICTOR OF CHICKEN EMBRYO DUCTUS ARTERIOSUS

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10.1136/archdischild-2014-307384.101

Introduction Decreased platelet number and/or function have been related to patent ductus arteriosus (DA). Activated platelets release vasoactive products, including serotonin (5-HT) that might be relevant for DA homeostasis. The chicken embryo has emerged as a suitable model for the study of DA vascular biology. In the present study, we investigated the possible vasoactive role of 5-HT in the chicken DA.

Methods Rings of the DA of 15- to 20-d-old chicken embryos (total incubation time 21-d) were studied in a wire myograph. The response to 5-HT was investigated under different O2 tensions (3, 7, and 74 kPa). The responses to the 5-HT1B receptor agonist sumatriptan, the 5-HT2A/B/C receptor agonist DOI and the selective serotonin reuptake inhibitors fluoxetine and sertraline were also investigated.

Results 5-HT (10 nM-0.3 mM) contracted the pulmonary side of the DA (PulmDA) in a concentration-dependent manner. By contrast, 5-HT induced negligible contractions in the vessels that surround the PulmDA (i.e., the pre- and post-ductal pulmonary arteries, and the aortic side of the DA). 5-HT-induced contraction increased with development (15-d >17-d >19-d >20-d). O2 tension did not affect 5-HT-induced contraction but elimination of extracellular calcium completely abolished it. Sumatriptan and DOI also contracted the PulmDA in a concentration-dependent manner. By contrast, fluoxetine and sertraline evoked contractions at very high concentrations (>0.1 mM).

Conclusions Our data indicate that 5-HT receptors are functionally present in the chicken DA and suggest that platelet-derived 5-HT may play a pivotal role in the postnatal closure of the DA.