

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 27³ (2²) weeks and had a mean (SD) birth weight of 1032 (315) grams. 46 (79.3%) infants had a PDA with a mean (SD) PDA diameter of 3.2 (0.9) mm. Median (IQR) BNP levels: 486.5 (219–1316) pg/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.

0-032 SEROTONIN IS A SELECTIVE VASOCONSTRICTOR OF CHICKEN EMBRYO DUCTUS ARTERIOSUS

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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 DA. 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-HT_{1B/D} receptor agonist sumatriptan, the 5-HT_{2A/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.

Abstract 0-033 Table 1 Clinical outcomes

		Rate (%)	p-value*	OR (CI95%)
Survival-without-morbidity	P2	53.4	NS	1.34(0.70–2.57)†
	P1	46		
Mortality	P2	18.2	NS	1.05(0.45–2.45)
	P1	17.5		
Chronic lung disease	P2	12.5	<0.05	0.39(0.15–0.98)
	P1	26.9		
Retinopathy (≥3)	P2	12	NS	1.31(0.41–4.15)
	P1	9.4		
Necrotizing enterocolitis	P2	5.1	<0.05	0.28(0.08–0.96)
	P1	16.1		
Intraventricular haemorrhage (≥3)	P2	25	NS	0.90(0.43–1.88)
	P1	27		

P1 aggressive, P2 conservative

*Chi-square

†Adjusted for gestational age, sepsis and days on mechanical ventilation (logistic regression).

0-033 CONSERVATIVE APPROACH TO PATENT DUCTUS ARTERIOSUS IN VERY LOW BIRTH WEIGHT INFANTS

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Background and aims Management of patent ductus arteriosus (PDA) is still a dilemma. We aimed to prove that a more conservative approach of PDA is equally effective without increasing morbidity-mortality in preterm infants.

Methods From January 2009 to December 2013 clinical charts of preterm <31 weeks admitted into two NICUs with clinical/echocardiographic PDA were analysed. In January 2011 management was changed. In the first period (P1), patients who failed medical treatment underwent surgical ligation; in the second (P2), only those with cardiopulmonary compromise (mainly those that could not be weaned from ventilator). We compared survival-without-morbidity, defined as patients discharged without chronic lung disease, severe retinopathy, necrotizing enterocolitis or severe intraventricular haemorrhage.

Results Patients in P1 (n = 63) and P2 (n = 88) had similar clinical characteristics. Significant lower rates of medical (85.7% vs 56.8%) and surgical treatment (33.9% vs 14.3%) were observed in P2. No differences in survival-without-morbidity were observed (Table 1). In P2, 19.4% patients showed PDA at discharge.

Conclusions A conservative approach in preterm with PDA can avoid medical/surgical treatment and its side effects, without changes in survival-without-morbidity.

0-034 HALF SYSTOLIC DECAY TIME (½SDT) OF DUCTAL FLOW MEASURED BY ECHOCARDIOGRAPHY WOULD PREDICT NEED FOR TREATMENT OF PATENT DUCTUS ARTERIOSUS (PDA) IN EXTREMELY PREMATURE NEONATE

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