**NEURODEVELOPMENTAL PROFILE OF CHILDREN UNDERGOING BYPASS SURGERY FOR CONGENITAL HEART DEFECT USING A PARENT COMPLETED AGES AND STAGES QUESTIONNAIRE**

**Introduction:** Children with congenital heart disease (CHD) are at high risk for poor neurodevelopmental outcomes. The NITRIC study is a multisite randomised controlled trial evaluating the role of nitric oxide during cardiopulmonary bypass; with neurodevelopment as an important secondary outcome at 12 months. There is limited description of neurodevelopmental status prior to surgery and few interventional studies that report neurodevelopmental outcomes.

**Objective:** To assess the pre-intervention neurodevelopmental profile of children recruited to the NITRIC study and explore risk factors contributing to neurodevelopment.

**Methods:** 167 infants, aged ≥1 month-24 months, were evaluated on recruitment to the NITRIC study using the standardised parent completed Ages and Stages Questionnaire (ASQ). Sixty-nine neonates <1month were unable to be assessed using the ASQ. Descriptive and univariate statistics were used to describe the sample. Binary logistic regression was performed to assess the impact of factors on the likelihood that infants would have delay on a minimum of 2 scales.

**Results:** The percentage of infants with delayed scores (>2SD below mean) was 18.8% for the Communication Scale, 43.6% for the Gross Motor, 25.5% for the Fine Motor, 25.0% for the Problem-Solving and 25.5% for the Personal-Social Scale. Delay was detected in a minimum of two scales for 37.7% of the cohort. Gestational age and weight, and congenital syndrome were significantly associated with delay, χ2 (3, N=141) =14.53, *p*=.002. Infants that completed the ASQ did not different significantly from neonatal group with respect to gestational age and birthweight, congenital syndrome, non-cardiac structural anomalies, and cardiac pathophysiology.

**Conclusions:** Neurodevelopmental deficits are present in up to 40% of infants in this pre-interventional NITRIC cohort. Baseline neurodevelopmental screening is important in the NITRIC study and knowledge of this and risk factors can inform power calculations for future more meaningful follow-up assessment and analysis at school-age for this high-risk population.