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Outcome of neonates with congenital heart disease born either at less than 35/40 gestation or weighing less than 2.5kg

*Rithey L., Thomson J.D.R.
Leeds General Infirmary, Leeds, England*

Introduction: Congenital heart disease (CHD) affects 8 in every 1000 babies born. Some of these neonates are born prematurely and therefore with low birth weights. In order to have the necessary intervention these neonates often have to wait until they reach an appropriate weight, generally thought of as 2.5kg. This can mean a prolonged hospital admission. The aim of this study is to gather information to help in counselling families and to identify if there are any prognostic factors that can be recognised soon after delivery.

Methods: Retrospective database analysis using the neonatal database Badgernet and the cardiac database in Leeds General Infirmary to collect data on neonates born in or treated at two tertiary neonatal units in Yorkshire between 01/01/2014 and 31/12/2016. Neonates included were born at less than 35 weeks gestation or weighing less than 2.5kg. The only exclusion was a diagnosis of patent ductus arteriosus only, neonates were included irrespective of genetic anomalies, non-cardiac comorbidity and whether or not they received intervention.

Results: 190 neonates were identified with a diagnosis of CHD and 3921 with no CHD. Neonates with CHD weighing more than 1kg are significantly more likely to die than those without CHD (29.5% v's 1.6%, $p<0.01$). There was no significant increase in mortality in the CHD group in those with a chromosomal abnormality than in those without (37.5% v's 27%, $p=0.22$) however those that died carried a huge burden of co-morbidity with 95% displaying at least 1 other significant non-cardiac system disorder (median 2, range 0-4). Neonates with CHD were significantly more likely to develop necrotising enterocolitis than those without CHD (12.6 v's 6.9%, $p<0.01$). When looking at length of stay 56% of neonates with CHD were discharged within 50 days of birth, 18% were admitted for over 100 days and 3% for over 200 days.

Conclusions: This study enables parents to have a more realistic idea of what their babies neonatal course will be from length of stay to mortality and morbidity during admission. This can be invaluable at such a stressful time.