

Outcome Of Critical Chd: Comparison Between Prenatal And Post-Natal Diagnosis In 548 Neonates

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INTRODUCTION. Critical congenital heart diseases (CHD) account for 2 - 3 /1000 of birth malformations and about 50% of CHD. Data from literature report that prenatal diagnosis may improve outcome of neonates with transposition of great arteries (TGA) and left-heart side obstructions. Report the outcome of patients with critical CHD admitted in our Division (Pediatric Cardiology/Cardiosurgery) in eleven years of activity (Jan 2000-2011), comparing when they were diagnosed in utero and in post-natal life.

METHODS. We reviewed 548 neonates with CHD (TGA: 112/548, 20.4%, AoCo: 128/548, 23.3%, PAIVS 85/548, 15.5%, HLHS 54/548, 9.8%). Mean age at admission was 3.0+2.1 days (range 0-30 days): Among them, 240/548 (43.8 %) received prenatal diagnosis of critical CHD: 48.2% systemic ductal-dependent CHD, 44.8% pulmonary ductal-dependent CHD and 42.8% of transposition of great arteries.

RESULTS. As first treatment, 323/548 neonates (59.0%) were submitted to a percutaneous procedure, 225/548 neonates (41.0%) were submitted to cardiothoracic intervention. Overall mortality was: 100/548 (18.0%). If we exclude neonates with HLHS, this data drop to 12,5% (64/512). At a mean follow-up of 5,8 + 1,4 y (range 0-11 y), we recorded a mean overall survival of 74.2%. We divided neonates which received prenatal diagnosis (G1) from those which didn't receive it (G2). G1 pts were admitted in 1st day of life (P=0.03,<0.05). We report a pre-surgical mortality of 2.0% in G1 and 9.0% in G2, P = 0.02 (<0.05). We report early survival of 90.0% in G1 and 80.0 % in G2, P 0.04 (< 0.05)

CONCLUSIONS. Prenatal diagnosis of critical CHD allows to plan the delivery, the 3rd level centre admission, early-starting PGE2 infusion, to prevent metabolic and respiratory acidosis, so improving clinical pre-surgical conditions. We report an overall survival of 75 % at 5 yrs (included complex CHD) of patient with critical CHD, if diagnosed and treated in a 3rd level pediatric cardiology and cardiosurgery centre. Early survival of neonates with prenatal diagnosis in our series is about 90%. In conclusions, prenatal diagnosis of critical CHD statistically improve the outcome of affected neonates.