Impact of antenatal echocardiography on outcome of neonates with coarctation of the aorta

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The objective of this study was to analyse the impact of antenatal echocardiography on outcome of neonates with coarctation of aorta (COA).

Methods: single-center analysis of clinical and echocardiographic data of foetus with suspicion of, and neonates and infants <1 year of age with COA. Groups DAN (antenatal diagnosis) and DPN (postnatal diagnosis) were compared.

Results: 286 cases were included, 106 in DAN group and 180 in DPN. Among 106 antenatal suspected COA, 11 were not confirmed after birth (sensitivity = 34.5%). Antenatal ascending aorta diameter (AAO) and AO/PA ratio were predictors of postnatal COA. Heart failure (HF) was the main symptom in DPN group, absent in DAN (p< 0.0001). Antenatal echocardiography was associated with lower diameter of isthmus (AOI), transverse arch (TrAO ) and AAO. DPN had lower LV systolic fraction (LVSF) than DAN. PGE was administered in 53% preoperatively and mechanical ventilation in 39%. Among 275 confirmed COA (95 DAN and 180 DPN), 272 underwent Crafoord operation, at mean age 29days (median 12days) and mean time after admission 3.4days. Age at surgery was lower and time to surgery longer in DAN than DPN group. Survival was 98.5%. Restenosis occurred in 20cases(7%). Postoperative morbidity, survival and restenosis were not different between the two groups.

Conclusion: Antenatal diagnosis helps to detect severe postnatal COAO but sensitivity is still low. Antenatal diagnosis impacts on early outcomes of neonates with COA but not on late outcomes and restenosis.