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Performance of antenatal diagnosis to detect postnatal coarctation of the aorta

Joly H., Sassolas F., Ducreux C., Veyrier M., Bakloul M., Gouton M., Bozio A., Di Filippo S.
Pediatric and Fetal Cardiology, Hopital Cardiovasculaire Louis Pradel, Lyon, France

The aim of this study is to assess the postnatal outcomes of fetuses diagnosed with potential aortic coarctation.
Material and methods: the records of all neonates with antenatal suspicion of coarctation of the aorta were reviewed retrospectively for clinical, echocardiographic data and treatment.
Results: Among 78 fetuses diagnosed with abnormal asymetric ventricles, 35 (44.9%) developed coarctation of the aorta, 42 did not (52.5%) and 2 had hypoplastic left heart (2.6%).
All patients were hospitalized from birth until closure of the ductus arteriosus (2 to days) or Crafoord surgery. The antenatal RV to LV ratio was 1.74 in patients with coarctation of the aorta compared to 1.39 in those without (p= 0.018), and the pulmonary artery to ascending aorta ratio was respectively 1.69 versus 1.30 (p= 0.0001). The frequency of left superior vena cava was not different between patients with and without postnatal coarctation (29.7 versus 25%). The 2 cases with hypoplastic left heart died postnatally. All the other patient were asymptomatic, and had no symptom of heart failure. Mean postnatal LV diameter was 15.7mm, ascending aorta 7.2mm. None of the patients required prostaglandin infusion or preoperative mechanical ventilation. Crafoord operation was performed at median age of 11.5 days. Median hospital stay was 21.4days for operated patients.
Conclusion: The performance of antenatal diagnosis to detect postnatal coarctation of the aorta remains low. However RV to LV and PA to AO ratios may help to ameliorate sepecificity. Despite high rate of false positive, antenatal diagnosis allows to avoid postnatal acute heart failure and improve early prognosis.