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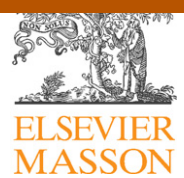

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Antenatal echocardiographic parameters to predict postnatal outcome of neonates with Ebstein anomaly

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Ebstein tricuspide valve anomaly is a rare CHD with uncertain postnatal prognosis. Criteria to predict outcome are still a matter of debate. The aim of this study was to determine antenatal echocardiographic predictive parameters.

Methods Retrospective multicentric analysis of fetus with diagnosis of Ebstein anomaly. Echocardiographic measurements of ventricles, atria, great vessels and tricuspid regurgitation were collected. Comparisons were made between group I (poor outcome = death occurred in utero or within the first 3 months of life) and group II (favorable outcome: postnatal survival > 3 months).

Results 16 fetuses were included in the study: 10 in group I (62.5%: 2 TOP, 2 fetal deaths, 6 postnatal deaths) and 6 in group II (37.5%). Mean gestational age at diagnosis was 29 weeks (22 to 38). The mean number of echocardiographic records per patient was 2 (1 to 6). LV to RV ratio, tricuspid valve regurgitation grade and retrograde or anterograde ductal flow did not differ between the 2 groups. Significative differences were found between groups I and II regarding the presence of pulmonary flow (none or mild RV to PA flow: 8 of 9 cases died = 89%), AO to PA ratio (75% death if > 97 p vs. 25% if 3—97 p), RA diameter (77.3% death if > 97 p vs. 0%), PA diameter (100% death if < 3 p) and pericardial effusion (80% death vs. 0%). Only 1 case had arrhythmia and died.

Conclusion This small sample size study showed that the absence of RV to PA flow and/or pulmonary valve opening, increased AO to PA ratio, RA and decreased PA diameter and the presence of pericardial effusion might represent prognosis factors in fetus with Ebstein anomaly. These results should be confirmed by large-scale prospective study.

Disclosure of interest The authors have not supplied their declaration of conflict of interest.

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Could all coarctation of the aorta be identified at prenatal ultrasound?

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Background Screening for coarctation of the aorta (CoA) during fetal ultrasound (US) in a low-risk population is based on the great vessels asymmetry (GVA) with small aorta. Over the last ten years, our screening rate was 49%. Some of the undetected CoA, that we had in care, seemed to us, to the view of the postnatal US, identifiable during pregnancy. We sought to assess the possible performance of fetal cardiac screening of CoA in an unselected population by the evaluation of aortic valve size measurement.

Methods We retrospectively analysed data from 199 neonates born after 32 weeks of gestation between January 2003 and December 2012: 77 were diagnosed for CoA among them 38 were prenatally considered at risk, 122 were referred in utero due to GVA to evaluate during pregnancy the risk of CoA after birth, but did not developed CoA. We compared them to a control group of 166 patients without significant congenital heart disease. US aortic annulus valve (AVA) sizes were measured (as we did prenatally) in parasternal long axis view between hinge points during systole and normalized to body size with Pettersen's Z-score equation.

Results Mean AVA Z-scores were −0,05 in the controls, −1 in the GVA and −2,4 in the CoA group. AVA Z-scores were significantly smaller in the CoA group than in the control ($P < 0.05$) and in the GVA group ($P < 0.05$). The best cut-off point for Coa discrimination with ROC analysis was a Z-score of −1,84. Among the 39/77 CoA not identified prenatally, 19 had a Z-score < −2 and should probably have been identified. Five had a Z-score > −0,05 and could not be diagnosed.

Discussion This study confirms that aortic annulus of newborns with CoA are significantly smaller than those with normal or even asymmetric in late pregnancy hearts. Although, on that basis alone,

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