Oral poster abstracts

OP01: SCREENING FOR CONGENITAL HEART DISEASE

OP01.01
The functional single ventricle heart in the fetus: accuracy of prenatal diagnosis and outcome

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Objectives: The purpose of this study was to determine the diagnostic accuracy of fetal Echocardiography in evaluating anatomic details of the functional single ventricle heart and the outcome of fetuses diagnosed with this anomaly.
Methods: This is a retrospective study of 128 fetuses with single ventricle of our database (from January 2004 to March 2011): Double inlet single ventricle (DISV) ($n = 16$), tricuspid valve atresia (TA) ($n = 18$), Mitral valve atresia and hypoplastic left heart syndrome (HLHS) ($n = 75$), hypoplastic right-heart syndrome (HRHS) ($n = 16$) and heteroataxy syndrome with common auriculo-ventricular valve (HS) ($n = 3$). The results of fetal echocardiography were compared with the diagnoses at postnatal echocardiography or anatomopatologic findings. Postnatal surgical outcome of survival patients was reviewed.
Results: We had 81 terminations of pregnancy (TOP) (63.1%: 50% DISV; 50% TA; 69% HLHS; 50% HRHS and 100% HS) and 2 intrauterine fetal death. Anatomical findings were correlated in 91% of cases. In 7 morphology of the predominant ventricle was not identified. Diagnostic accuracy was present in visceral situs, presence of pulmonary or aortic outflow tract obstruction and presence of obstructed pulmonary venous outflow (sensitivity 100%). However, the ability to predict a ductal dependent pulmonary circulation was poor (sensitivity 63%). Of the 45 newborns, intervention was elected in 40 (88%), nonintervention in 5, and 9 died after intervention (6 after Norwood procedure). Of the cohort of operated newborns 71% are presently alive after various stages of intervention.
Conclusions: Accurate diagnosis of the fetal single ventricle heart is possible, and outcome is improving. The rate of TOP is high in single ventricle anomalies. Caution must be taken in judging ventricular morphology and in predicting ductal dependent pulmonary circulation.

OP01.02
Right ventricle dilatation: an alert sign in the fetal heart

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Objectives: Right ventricle dilatation can be detected in prenatal sonography at any moment of pregnancy. It may be found in the presence of various congenital heart defects, associated to non cardiac diseases, or even as an isolated anomaly in a healthy baby. We present a series of cases with right ventricle dilatation detected in two tertiary health care centers in a 10-year period.
Methods: We reviewed the medical records of 2437 fetal echocardiograms performed at Hospital Italiano de Buenos Aires and Fundación Hospitalaria between January 2000 and December 2010 and studied those in which right ventricle dilatation (ratio of right-to-left ventricular width greater than 1.5 : 1) was observed.
Results: 110 fetuses had right ventricle dilatation. From these 97 fetuses had congenital heart defects, 2 had restrictive foramen ovale, 1 had restrictive ductus arteriosus, and 10 had normal hearts. In the group with congenital heart defects 5 fetuses also had chromosomal or genetic abnormalities, and 8 also had non cardiac malformations (being congenital diaphragmatic hernia the most frequent anomaly). In the group without congenital heart defects one fetus had 21 trisomy and another had congenital diaphragmatic hernia.
Conclusions: Right ventricle dilatation is an important sign that should alert the obstetric echographist and pediatric cardiologist when performing prenatal echocardiography given its association with several congenital heart defects and other non cardiac diseases, yet bearing in mind that in some cases it is an isolated and transitory finding.

OP01.03
Fetal PR interval in pregnant women with positive anti SSA/Ro and anti SSA/La antibodies, and risk of developing fetal heart block

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Objectives: Our aim was to describe, the utility of fetal PR interval measurement in pregnant women with positive anti SSA/Ro and anti SSB/La antibodies during pregnancy, and the risk of developing fetal heart block.
Methods: Mechanical fetal PR interval was measured in 30 patients with positive anti SSA/Ro or anti SSB/La antibodies. Fetal echocardiography was performed according ISUOG guidelines. Mechanical fetal PR was measured using Doppler waveform of left in – out flow tracts. Measurement was started at 16 weeks and repeated every one or two weeks until 34 weeks of pregnancy. First second and third degree AV block was defined according ACC's criteria and PR > 150 mseg were considered prolonged. For statistical analysis mean and range were used as position measurement.
Results: The mean maternal age was 29.6 years (19–40 years). Lupus, Sjoegren and other autoimmune diseases were present in 68, 12 and 16%, respectively. Two patients have a previous child with complete AV block. The mean gestational age to start the measurement was 20.6 weeks (16–34 weeks). Two cases of first, two second and none third degree AV block were found. Dexamethasone was administrated to these mothers. Patients with first degree and one with second-degree AV block reversed. Preterm birth was present in 25% of the patients. One patient remains with second degree AV block at birth, and required pacemaker.
Conclusions: Mechanical PR interval measurement in patients at risk of fetal congenital AV block is feasible. First and second degree AV block can be detected and successfully treated with transplacental steroids. No third degree AV block was found in our group. RCT are necessary to confirm utility of PR and steroids in prevention of fetal congenital AV block.