

## **Evaluation of the performance of the fetal heart morphological screening test**

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### **Objective**

To evaluate the performance of the application of a protocol of fetal heart morphological screening test. The specific objectives are (1) to describe the follow-up of screening tests for congenital heart defects and (2) to estimate the accuracy of the fetal heart morphological screening test for the detection of fetal heart abnormalities.

### **Methods**

It was a prospective, observational, and analytical cohort performed between July 2014 and August 2015. The eligible population of the study was composed of the patients under prenatal care at the institution, who began the same until the second trimester of gestation. We included single fetus pregnancies that performed morphological obstetric ultrasonography with an extended protocol of the fetal heart planes and excluded cases of fetal death and neonatal death before 24 hours of life. Data collection consisted of verifying the the medical records regarding the characteristics of the pregnant women, descriptions of the fetal heart morphological screening exams and the outcomes of their newborns. Flowchart was presented with the quantitative of the screening tests performed and the follow up of the cases from the findings, until the interest endpoint of the study, which is the presence or not of congenital heart disease. For this, we consider, among the cases included in the sample, the performance of fetal echocardiography, of the postnatal screening, which consists of the "heart" test, and / or neonatal echocardiography. The results were classified as altered or normal according to the occurrence or not of the heart disease. To determine the accuracy of the screening test, the sensitivity and specificity of the screening test were verified in the study population. A total of 518 fetal heart morphological screenings were performed.

### **Results**

There were 2 fetal deaths, 1 neonatal and 58 follow-up losses, which resulted in a final sample of 457 cases, of which 444 (97.15%) had complete follow-up. There were five cases of congenital heart disease, with one true positive case of total atrioventricular septal defect and four false negative cases. From these values we calculated the sensitivity of our screening test of 40% and specificity of 77.6% and overall accuracy of 77.2%. The sample had few cases of heart diseases and only one was classified as complex, due to the small sample size and its randomness. Probably the extension of the period studied will increase the number of cases and the evaluation of the performance of the method will be magnified.

### **Conclusion**

The follow-up for screening / diagnosis of congenital heart disease was complete in 97.15% of the final sample and a observed sensitivity was 40%, specificity 77% and overall accuracy 77%.