Early Fetal Echo Detects Most Cardiac Lesions

BY ROBERT FINN
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RENO, NEV. — Fetal echocardiography before 16 weeks of gestation is feasible and can detect a substantial proportion of cardiac lesions, investigators reported in a poster presentation at the annual meeting of the Society for Maternal-Fetal Medicine.

The technique does have limitations regarding accurate visualization of the great artery relationship and the crux of the heart. It may therefore be best to reserve early echocardiography for cases at the greatest risk for cardiac defects. Second-trimester echocardiograms remain the gold standard, concluded Fionnuala McAuliffe, M.D., of University College Dublin (Ireland) and colleagues.

The study involved 160 fetal echocardiograms performed before the 16th week, with an average gestation time of 13.5 weeks. Investigators used the transabdominal approach for 100 cases, and the transvaginal approach in 60 cases in which the transabdominal approach yielded poor visualization.

Of the 160 patients, 100 were referred because of nuchal translucency greater than the 95th percentile, 51 because of a family history of congenital cardiac defects, and 9 because of the presence of extracardiac lesions.

Adequate cardiac examinations were possible in 152 cases, and pregnancy outcome was available in 137 cases. Of those, there were 20 cardiac defects. Fourteen (70%) showed an abnormality on the early echocardiogram, and six (30%) were passed as normal.

The early echocardiogram identified two cases of ectopia cordis, two cases of atrioventricular septal defect, two of hypoplastic left heart syndrome, two of ventricular septal defect, two of left atrial isomerism, two of hypoplastic right ventricle, and one case each of double outlet right ventricle and cardiac diverticulum.

However, the early echocardiogram failed to detect three cases of ventricular septal defect, two cases of dextro-looped transposition of the great arteries, and one case of hypertrophic cardiomyopathy.

A four-chamber view of the heart was obtained in all of the cases. The atrioventricular valves could be visualized 96% of the time, the aorta and pulmonary artery 95% of the time, and the inferior and superior vena cava 76% of the time.

Early fetal echocardiography was less effective in visualizing the aortic and ductal arches (45% of the time), branch pulmonary arteries (37% of the time), and pulmonary veins (19% of the time). ■

CV Score Predicts Survival in High-Risk Fetuses

RENO, NEV. — A less-than-perfect score on a five-item, 10-point cardiovascular profile predicts a poorer outcome for a fetus with heart failure, according to a poster presented by Aleksandra Roczek, M.D., at the annual meeting of the Society for Maternal-Fetal Medicine.

Fetuses in this high-risk group warrant closer follow-up and management from both the obstetric and prenatal cardiology point of view, concluded Dr. Roczek, of the University of South Florida, Tampa.

Poor scores on three of the five items—cardiomegaly, hydrops, and venous Doppler measurements—were especially predictive of mortality, she noted.

Dr. Roczek and her colleagues conducted a retrospective examination of 92 pregnancies where fetuses were judged to be at risk for heart failure on the basis of echocardiography and Doppler velocimetry. Of those fetuses, 53 (57%) survived and 39 (43%) did not.

The cardiovascular profile score awards two points each for absence of hydrops, normal venous Doppler, heart function, arterial Doppler, and heart size. The score in each domain is decreased by two points for severe signs and by one point for intermediate signs.

Fetuses with abnormal venous Doppler had a mortality rate of 64%. Mortality was 62.5% in fetuses with hydrops, and 60% in fetuses with cardiomegaly.

The other two factors were less predictive of mortality. Fetuses with abnormal heart function had a 33% mortality, and those with abnormal arterial Doppler had a 17% mortality.

—Robert Finn