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Myocardial Tissue Doppler Echocardiographic evaluation of preterm infants with bronchopulmonary dysplasia at 2 to 4 year of age

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Objective: To investigate the role of myocardial tissue Doppler echocardiography in detecting cardiac pathology in BPD patients at 2 to 4 year of age and to find out possible risk factors related to cardiovascular sequela.

Study design: Infants born prematurely with BPD (N=21, 4 severe BPD, 3 moderate BPD and 14 mild BPD) and without BPD (N=20) were evaluated with conventional and myocardial tissue Doppler echocardiography at 2 to 4 year of age.

Results: In conventional echocardiography; right ventricular fractional shortening, tricuspid E/A ratio and mitral late diastolic inflow velocity, pulmonary acceleration time was decreased; mitral E/A ratio, left and right ventricular myocardial performance indexes were increased in BPD group compared to controls.

Early – to- late tissue Doppler velocity ratio (E'/A') was decreased at the tricuspid annulus and systolic velocity was increased at the interventricular septum with myocardial tissue doppler measurements in BPD group. Birth weight, disease severity and cumulative steroid dosage were related with echocardiographic changes.

Conclusion: BPD affects global cardiac performances at 2 to 4 years of age with regard to birth weight, disease severity and cumulative steroid dosage. Myocardial tissue Doppler examination did not have additional value in demonstration of these changes with conventional echocardiography.