

DOPPLER TISSUE IMAGING ASSESSMENT OF THE RIGHT AND LEFT VENTRICLES IN PRETERM NEONATES - PRELIMINARY STUDY

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Objectives: To define age-related changes in left and right ventricular function using pulse tissue Doppler echocardiography in preterm infants.

Materials and methods: 25 children were selected from preterm neonates with mean g.a. 26 weeks (+2 wks), mean birth weight 942 g (+333 g). Pulse tissue Doppler images of the lateral tricuspid and mitral annular motion were recorded using 4-chamber apical view. Ventricular peak myocardial velocities during early diastole (wave-Em), during atrial contraction (wave-Am) and during systole (wave-Sm) were measured. The first measurement was taken as soon as possible after birth, the second one was taken on the 3rd day of life, and the third one after first month of life.

Results: The higher myocardial velocities (peak Em, Am, Sm) were obtained from tricuspid lateral annulus than the mitral lateral annulus. We do not observed the conversion of the ratio of Em/Am waves in both ventricles between the first and the third day of life. Even after 30 days there was no conversion of the ratio of Em/Am waves. Among newborns with PDA, the Em/Am ratio also remained < 1 during our study.

Conclusion: The diastolic myocardial velocities of the right ventricle were higher than those measured in the left ventricle. Absence of changing in mean value ratio of Em/Am in both ventricles might be reflecting the „premature” fetal status of this ventricles in the first 30 days of life. Further investigations are needed in a greater population of neonates during the whole neonatal period. Grant from the MNiSW No. 407414336