Two-dimensional left atrial and left ventricular function in asymptomatic diabetic patients

Echocardiography, MSCT, MRI

Extended Abstract

KEYWORDS: echocardiography, diabetes, left ventricular function.

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Introduction: The aim of the paper is the detection of changes in function of the left atrium (LA) and left ventricle (LV) in asymptomatic diabetic patients, distinguished by the control group, using two-dimensional (2D) speckle tracking echocardiography.

Methods: 50 asymptomatic patients with diabetes mellitus were analyzed (28 males and 22 females) with an average age of 56.4 years (56±20 years). In control group without verified disease, 50 individuals have been chosen randomly, 26 males and 24 females, with an average age of 55.3 years (55.3±17).

Results and Conclusions: 1. Decrease of 2D strain of left ventricle is registered in patients with diabetes, starting from the global longitudinal strain (GLS) (-21.79 vs. 16.7%), myocardial longitudinal strain (LS) (17.69 vs 13.89 %) and global radial strain of LV (GRS) (51 vs 42.9%) (Figure 1).
2. Minimal value from -17% is registered of LS values at control group and from -14.2% at diabetic group where registered extension of T2P (time to peak) longitudinal and transversal strain values in patients with diabetes is registered.
3. Increased value of LV mass at patients with diabetes is registered in our study (133 gr vs 123 gr).
4. Insignificant increase of LA volume is registered in diabetic group (21,82 vs 20,66 ml/m²).
5. EF of LA is decreased in diabetic patient (55.69 vs 50.58%) together with decrease fractional area contraction (FAC) of LA (69.56 vs 41.23%)
6. Decrease in values of end diastolic longitudinal strain (LS) of LA is registered in diabetic patients (48,78 vs 37.33%)
7. Decreased strain parameters of LV also decrease and LV compliance, which decrease the passive E wave SR and increase active A SR phase of LA function.

LITERATURE

Figure 1. Left ventricular function assessment by two-dimensional echocardiography.

Figure 2. Left atrial function assessment by two-dimensional echocardiography.