

[gw22-e0376]

LEFT ATRIAL FUNCTION IN HYPERTENSIVE PATIENTS WITH DIFFERENT LEFT VENTRICULAR GEOMETRICS BY REAL-TIME THREE DIMENSIONAL ECHOCARDIOGRAPHY

Zhang Li *Department Of Ultrasound, Union Hospital, Tong Ji Medical College, Huazhong University of Science and Technology, Wuhan, China*

10.1136/heartjnl-2011-300867.358

Objective To estimate left atrial mechanical function in hypertensive patients with different left ventricular geometries by the three dimensional echocardiography.

Methods The subjects of this study were 94 patients with hypertension and 35 normal adults (N group). Patients with

hypertension were divided into 4 groups: normal left ventricular geometry (A group), concentric remodeling (B group), concentric hypertrophy (C group) and eccentric hypertrophy (D group). All subjects were collected full volume imaging at apical four-chamber view with real-time three dimensional imaging. Left atrial volume curve, LAVmax, LAVmin and LAVpre were acquired from QLAB work station. Parameters were calculated as follows: LAVp, LAVpEF, CV, LAVa, LAVaEF, LAVt, LAVtEF, LVEF. All volumes were indexed for body surface area.

Results Hypertension groups had higher LAVmax, Vmin, Vpre, AVa, LVmax and lower LAVpEF than in controls ($p < 0.05$). Compared with N group, LAVmax, LAVmin, LAVpre were increased in C, D group; LAVa was reduced in C group; LVmax was increased in D group; LAVpEF was decreased in D group. CV was reduced in C, D group; Vmin was increased in B, C, D group, especially in D group. LAVt, SV were increased in C group. LVEF was reduced in D group. There were no difference in LAVtEF, LAVaEF, LAVp in all groups ($p > 0.05$). The parameters of left atrial volume, LAVt, LAVa were positively correlated with systolic blood pressure, diastolic blood pressure, IVST, PWT, LVMI and RWT, and obviously with LVMI; LAVpEF, CV, PE were negatively correlated with systolic blood pressure, diastolic blood pressure, IVST, PWT, LVMI, RWT and LAVpEF.

Conclusions Left atrial function changes with left ventricular geometry. In normal left ventricular geometry and concentric remodeling, left ventricular diastolic function is damaged. Left atrial enhanced atrial reservoir and booster pump function to ensure left ventricular filling, but left ventricular filled mainly from left ventricular diastole. In concentric hypertrophy and eccentric hypertrophy, left ventricular diastolic function is severely damaged, left ventricular filling relied mainly on the left atrial reservoir and booster pump function. When left ventricular appeared decompensated, left atrial function did not appear decompensated.