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STUDY THE LEFT VENTRICULAR FUNCTION WITH SPECKLE TRACKING IMAGING IN PATIENTS WITH DILATED CARDIOMYOPATHY AFTER TREATMENT WITH PHOSPHODIESTERASE INHIBITORS-OLPRINONE

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Chen Liping, Chen Liping. *Department of Echocardiography, Cardiovascular Disease Center, 1st Bethun Hospital of Jilin University, 71# Xinmin Street, Changchun 130021 China*

Objectives The aim of this study is to compare the left ventricular systolic and diastolic function with spackle tracking imaging (STI) in patients with chronic congestive heart failure due to primary dilated cardiomyopathy (DCM) and the controls, and the left ventricular function changes in these patients before and after intaking phosphodiesterase inhibitors-olprinone.

Methods 30 patients with DCM within 24 h before and after intaking phosphodiesterase inhibitors-olprinone for 5 days and 30 healthy persons were examined using conventional echocardiography. The left atrial anterior-posterior dimension and left ventricular internal diastolic dimension were measured on M-mode echocardiography on parasternal left ventricular long axis view, the left atrial superior-inferior dimension and medial-lateral dimension were measured on two-dimensional echocardiography on apical four-chamber view in systole. Left ventricular ejection fraction (LVEF) was calculated by bi-plane Simpson's method. The peak velocity during early diastole (Ve) and late diastole (Va) of mitral valve were measured through transmitral flow by pulse-waved Doppler, and the ratio Ve/Va was calculated. The peak mitral annulus velocity during early diastole (Ve′) and late diastole (Va′) of anterior mitral valve were measured by tissue Doppler echocardiography. The ratio Ve/Ve′ was calculated. Two-dimensional echocardiographic images were recorded from the left ventricular short-axis views at the basal level and apical level of the left ventricle. The left ventricular global peak rotation and rotation rate were measured using QLAB 6.0 workstation. Statistical analysis was used to find the difference between the dilated cardiomyopathy patients and the controls, and patients before and after medication.

Results The atrial and ventricular dimensions in patients were bigger than that of the controls; moreover, atrial dimension was decreased significantly after medication than that of the ventricular dimension. The peak rotation, rotation rate and global torsion were decrease significantly in DCM. Left ventricular global torsion inversely correlated with left ventricular and systolic and diastolic volume, and positively with left ventricular ejection fraction. Ratio of Ve/Ve′ was significantly lower in patients than that of the controls.

Conclusions Left ventricular systolic torsion, diastolic function in patients with dilated cardiomyopathy were significantly impaired. Short time medication can improve the systolic function. The structural changes in left ventricle was not significant, however, atrial dimension could decrease significantly.