Abstract: P1493

Prognostic significance of right ventricular function during exercise in patients with non-obstructive hypertrophic cardiomyopathy.

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Background: Hypertrophic cardiomyopathy (HCM) is a heterogeneous condition that may present crucial complication including life-threatening arrhythmia and sudden cardiac death. However, the risk stratification of HCM without left ventricular outflow tract (LVOT) obstruction had not been fully elucidated. Moreover, although recent studies have revealed the right ventricle (RV) involvement of HCM, the prognostic importance of RV function during exercise is unclear.

Purpose: To investigate the prognostic significance of RV function in patients with non-obstructive HCM using exercise stress echocardiography (ESE).

Methods and Results: This study conducted on 100 HCM patients (age 62.9±13.6 years, 63% men) with preserved left ventricular ejection fraction who underwent ESE using semi-supine bicycle ergometer. Ten patients with significant LVOT obstruction (=30mmHg) were excluded and 9 were also excluded because of the inadequate imaging quality or insufficiency of data. Among remaining 81 non-obstructive HCM patients, 9 patients suffered from HCM related cardiac events including cardiac death, unexpected hospitalization, life-threatening arrhythmias, and new-onset of syncope during the mean follow up period of 2.6±1.6 years. A multivariate Cox Hazard analysis revealed that low tricuspid annular plane systolic excursion during exercise (Ex-TAPSE, cut-off: 24mm) was an independent predictor of cardiac events. (hazard ratio: 18.66, 95% confidence interval: 3.66-338.46, P<0.001) The estimated cumulative cardiac event free survival using the Kaplan-Meier method was significantly lower in patients with reduced Ex-TAPSE (<24mm) than those with preserved Ex-TAPSE (Log-rank, P<0.01).

Conclusion: Ex-TAPSE had a strong predictive value of clinical outcomes in non-obstructive HCM patients. Right ventricular function during exercise may have crucial role in the risk stratification of non-obstructive HCM.
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