

Right ventricular function as a predictor of appropriate therapy of implantable cardioverter defibrillator

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Aim: The purpose of this study was to evaluate the association of RV function and appropriate therapy of ICD. **Methods:** This study was a single-center retrospective cohort study. Consecutive patients who underwent ICD implantation for any diseases were enrolled except for non-dilated phase hypertrophic cardiomyopathy and channelopathy. Transthoracic echocardiographic parameters including left ventricular ejection fraction (LVEF), RV basal diameter, RV end-diastolic area, and right ventricular fractional area change (RVFAC) were evaluated. RV systolic dysfunction was defined as RVFAC <35%. Cox regression analysis was used to analyze the effects of those parameters on appropriate ICD therapy after the implantation.

Results: In total, 151 patients (60.9 ± 13.6 years, 117 males) consisting of 67 old myocardial infarction, 34 dilated cardiomyopathy, 19 cardiac sarcoidosis, and 31 others were enrolled. Eighty patients received an ICD as a secondary prophylaxis. Mean LVEF and RVFAC were 37.8 ± 13.9% and 33.2 ± 10.8%, respectively. RV systolic dysfunction was present in 86 (57.0%) patients, which was significantly associated with ICD therapy (odds ratio 2.313; 95% confidence interval 1.067-5.014; P = 0.034) according to a univariate analysis. There was no correlation between RVFAC and LVEF (correlation coefficient = 0.064). Regarding the subjects LVEF > 35%, RV systolic dysfunction was an independent predictor of ICD therapy in a multivariate analysis.

Conclusion: RV systolic dysfunction was independently associated with increased ICD therapy despite of relatively preserved LVEF.