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SESSION TITLE: ECHOCARDIOGRAPHY ADVANCES FROM STRAIN, SPECKLE TRACKING TO AI

Abstract 10970: Added Predictive Value of Right Ventricular Ejection Fraction Compared with Conventional Echocardiographic Measurements in Patients Who Underwent Diverse Cardiovascular Procedures

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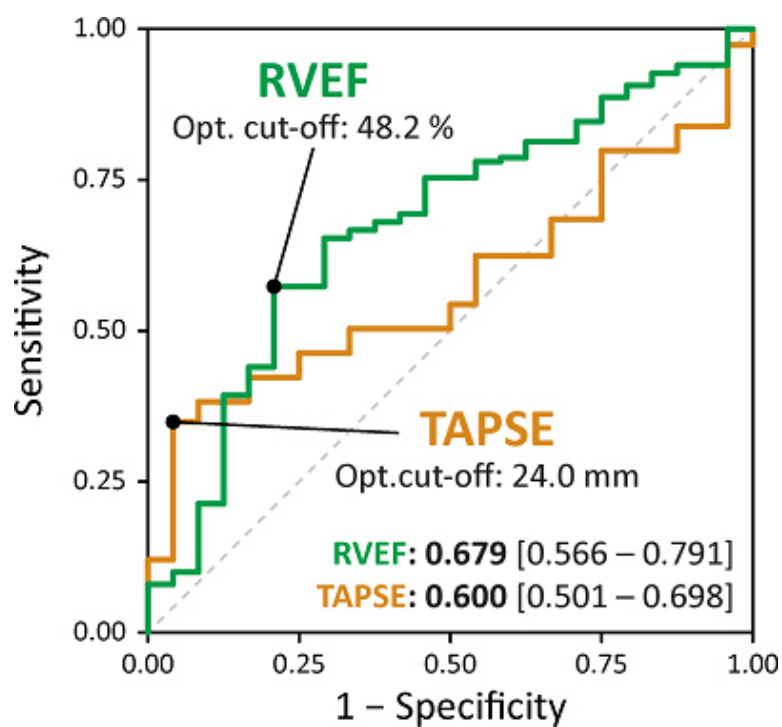
Abstract

Introduction: Right ventricular (RV) ejection fraction (EF) assessed by 3D echocardiography is a powerful measure to detect RV dysfunction. However, its prognostic value in routine clinical practice has been scarcely explored. Accordingly, we aimed at investigating whether RVEF is associated with 2-year all-cause mortality in patients who underwent diverse cardiovascular procedures and to test whether RVEF can overcome conventional echocardiographic parameters in terms of outcome prediction.

Methods: One hundred and seventy-four patients were retrospectively identified who underwent clinically indicated transthoracic echocardiography comprising 3D acquisitions. The patient population consisted of heart failure with reduced ejection fraction patients (44%), heart transplanted patients (16%), and severe valvular heart disease patients (39%). Beyond conventional echocardiographic measurements, RVEF was quantified by 3D echocardiography. The primary endpoint of our study was all-cause mortality at two years.

Results: Twenty-four patients (14%) met the primary endpoint. Patients with adverse outcomes had significantly lower RVEF (alive vs. dead; 48 ± 9 vs. $42 \pm 9\%$, $p < 0.01$). However, tricuspid annular plane systolic excursion (21 ± 7 vs. 18 ± 4 mm), and RV systolic pressure (36 ± 15 vs. 39 ± 15 mmHg) were similar. By Cox analysis, RVEF was found to be associated with adverse outcomes (HR [95% CI]: 0.945 [0.908 - 0.984], $p < 0.01$). By receiver-operator characteristic analysis, RVEF exhibited the highest AUC value compared with the other RV functional measures (0.679; 95% CI: 0.566 - 0.791).

Conclusions: Conventional echocardiographic measurements may be inadequate to support granular risk stratification in patients who underwent different cardiac procedures. RVEF may be a robust clinical parameter, which is significantly associated with adverse outcomes.



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