CARDIAC ARRHYTHMIAS

RIGHT VENTRICULAR MECHANICAL DISPERSION PREDICTS MALIGNANT ARRHYTHMIAS IN PATIENTS WITH ARRHYTHMOGENIC RIGHT VENTRICULAR CARDIOMYOPATHY

ACC Oral Contributions
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Background: Mechanical dispersion (heterogeneous contraction) can be assessed by strain echocardiography and may reflect electrical dispersion. We hypothesized that mechanical dispersion by myocardial strain can predict risk for ventricular arrhythmia in patients with ARVC.

Methods: We included 50 patients with ARVC diagnosis based on clinical criteria proposed by the European Society of Cardiology or genetic mutation criteria. ARVC related mutations (27 PKP2 & 5 DSP) were confirmed in 32 patients, 18 were mutation negative. Ventricular arrhythmia was documented in 37 patients. Strain was assessed by speckle tracking echocardiography.

Contraction duration (CD) was measured as time from onset R on ECG to maximum right ventricular (RV) shortening by strain. Standard deviation (SD) of CD was calculated as a parameter of mechanical dispersion, in a 3 RV segment model.

Results: Patients with arrhythmias showed increased RV mechanical dispersion compared to those without (45±33ms vs 14±9ms, p=0.004). RV mechanical dispersion was a predictor of arrhythmias in a multivariate regression analysis with OR 2.7 (95% CI 1.2-6.0), p=0.01. RV strain was -20±6% vs -24±5%, p=0.12.

Fig. shows increased mechanical dispersion in an ARVC patient with arrhythmias.

Conclusion: RV mechanical dispersion assessed by strain was increased in ARVC patients with arrhythmias. Increased RV mechanical dispersion was a powerful predictor of ventricular arrhythmias in ARVC patients independently of RV function.