**PREDICTION OF RECURRENT VENTRICULAR ARRHYTHMIAS AFTER MYOCARDIAL INFARCTION BY SPECKLE TRACKING ECHOCARDIOGRAPHY**

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Background: A myocardial strain reduction by echocardiography can potentially be a direct indicator of non-viable myocardium, and SCD risk. We aimed to compare strain data of patients with structural heart disease with and without ventricular tachycardia (VT) regardless of EF.

Methods: We studied 72 patients (age, 61±13 years) with previous myocardial infarction scheduled for cardioverter-defibrillator (ICD) implantation. Thirty-six pts had documented VT and 36 pts presented with no VT. Left ventricular function and volumes and score index were determined by two-dimensional echocardiography. Radial and circumferential strain were measured by speckle tracking echocardiography and EchoPAC software (GE). Global strain was obtained by averaging the maximum systolic shortening in a 16-segment model.

Results: EF and LV volumes were equal in both groups, and those with recurrent ventricular arrhythmias and those without could not be differentiated. Multivariate analysis revealed that global (p=0.016) and posterior wall circumferential strain (p=0.007) were strong and independent predictors of the occurrence of arrhythmic events. Analysis of ROC curves showed that the optimal cutoff value for posterior wall circumferential strain was -6.2% for a sensitivity of 67% and a specificity of 89% in predicting arrhythmic events.

Conclusions: In patients with previous myocardial infarction circumferential strain is the strongest predictor of spontaneous ventricular arrhythmia with subsequent ICD therapy (as surrogate of sudden cardiac death) among other clinical and echocardiographic variables, that is, score index and left ventricular function and volumes.