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(Research Article)
Evaluation of strain and strain rate parameters using two-dimensional speckle-tracking echocardiography in patients with coronary artery disease

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Abstract

The study aimed was to measure left ventricular (LV) strain using speckle tracking echocardiography (STE) for assessment of LV function. Eighty-two subjects (mean age 57±9 years) with suspected chest pain underwent two-dimensional (2D)-echocardiography before coronary angiography. Conventional echocardiographic parameters were used for the assessment of LV function. Longitudinal strain and its strain rate (SR) and circumferential strain, and its SR with 2D-STE were calculated for the assessment of myocardial function. According to the angiography results, patients were divided into two groups: CAD patients (n=60) and healthy group (n=22). There was a significant decrease in longitudinal and circumferential strain and strain rate in patients with CAD compared to healthy individuals (longitudinal strain in patients -16.2±2.4 vs -19.5±2.1 for a healthy group) (P-value<0.05). Discriminate analysis of longitudinal and circumferential strain with values of 78% and 83% indicated the highest sensitivity respectively. ST as a non-invasive method for measurement of strain and strain rate parameters is proposed in the early diagnosis of LV dysfunction in patients with CAD.

Keywords: Strain, Left ventricular function, Speckle tracking echocardiography.

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