Detection of Significant Coronary Artery Disease by Two-Dimensional Speckle Tracking Echocardiography in Patients with Suspected ACS and Non-Diagnostic ECG and Cardiac Biomarkers

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BACKGROUND:

The assessment of left ventricular (LV) strain using two-dimensional speckle-tracking echocardiography increases the sensitivity for detecting myocardial ischemia compared to the visual assessment with RWMA so increase the detection of patients with Acute coronary syndrome.

OBJECTIVE:

The aim of the current study is to evaluate the diagnostic accuracy of speckle tracking Echocardiography for detection of significant CAD using global & Regional longitudinal & circumferential strains in patient with suspected ACS and non-diagnostic ECG & cardiac Biomarkers.

METHODS:

The study conducted on 50 patients (32 males and 18 females) with suspected ACS and non-diagnostic ECG and normal levels of cardiac troponin, all patients underwent conventional, 2D STE and coronary angiography. We excluded all patients with RWMA at rest. The data was analyzed using MedCalc software using ROC curve and Correlation's methods.

RESULTS:

There was significant reduction in global longitudinal and circumferential strains in the patients with ACS in comparison to patients with normal coronary angiography (P value <0.0001 and 0.01) respectively with a sensitivity and a specificity of 97% and 69% for GLS and a sensitivity and a specificity of 70% and 84% respectively for GCS. The territorial longitudinal and circumferential strains at LAD, LCX and RCA territories did not differ significantly in patients with CAD whatever the coronary lesion.

CONCLUSION:

2D STE can be used as screening test for the evaluation of patients with suspected ACS with excellent sensitivity and good specificity especially the GLS in comparison to GCS. Normal GLS can exclude patients with CAD in the setting of acute chest pain care. Also, 2DSTE cannot predict the culprit artery in patients with ACS.

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