

The Value of Speckle Tracking Echocardiography in Assessment of Myocardial Viability in Comparison with Thallium-201 Scintigraphy

Alyaa Elsayed Hussein, Amr Kamal Bahgat, Gehan Magdy Youssef, Sahar Hamdy Azab

OBJECTIVE

is to assess the value of Left Ventricular Longitudinal Strain in assessment of myocardial viability using Speckle Tracking Echocardiography in comparison with Rest-Redistribution Thallium – 201 Scintigraphy.

MATERIALS AND METHODS

The study included 25 patients who had a history of myocardial infarction and had regional wall motion abnormality by echocardiography requiring viability study before revascularization. Each of these patients underwent Transthoracic echocardiography measurements with the use of a 17-segment paradigm for the division of the LV, as proposed by the American society of echocardiography (ASE), they also underwent Thallium scintigraphy, as well as Speckle tracking Echocardiography to analyze the deformation by the percent of wall lengthening and shortening representing longitudinal strain for each segment along with a global strain value for the LV.

RESULTS

Of the 425 segments studied, 307 segments were viable representing 72.2% of the segments while 118 segments were non-viable representing 27.8% of the segments according to Thallium – 201 Scintigraphy. Comparing these viable and non-viable segments regarding longitudinal strain value during baseline STE, low dose dobutamine STE revealed a cut off value at baseline STE to detect viable myocardium of ≥ -10.00 (Sensitivity: 65.0%, Specificity of 70.0%), a cut off value at low dose dobutamine STE of ≥ -13.00 (Sensitivity: 75.0%, Specificity: 70.0%) and a cut off difference value of ≥ -2.00 (Sensitivity: 81.1%, Specificity:80.5%).

CONCLUSION

2D speckle tracking echocardiography can assess myocardial viability with good sensitivity and specificity compared to SPECT. The change in longitudinal strain value is the most sensitive parameter to detect viable myocardium by low dose dobutamine 2D STE