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عنوان البحث

**Correlation between global longitudinal strain and SYNTAX score in coronary artery disease evaluation**

الملخص الانجليزي

**Background:** Speckle tracking echocardiography may allow the evaluation of myocardial systolic and diastolic dynamics across different physiologic and pathologic conditions beyond traditional echocardiographic techniques. The use of STE longitudinal strain in identification and risk stratification of CAD has good reproducibility and accuracy. **Aim:** The study aims to detect the relationship between SYNTAX score and global longitudinal peak systolic strain (GLPSS) in patients undergoing coronary angiography, with no history of myocardial infarction. **Methods:** The study included 70 symptomatic patients suspected to have chronic coronary syndrome aging 20–80 years (excluding those with significant structural heart disease). All patients underwent clinical evaluation, surface ECG, laboratory assessment, transthoracic echocardiographic (TTE), color TDI tracings, two-dimensional speckle tracking, and conventional coronary angiography with SYNTAX score calculation. Patients were divided into 3 groups based on the results of the coronary angiogram: normal CAD on angiogram (n = 10, control group), low SS (n = 25, SS < 22), and high SS (n = 35, SS ≥ 22). **Results:** The mean age was 55 ± 9.6 years; 54% were males; two third of patients were hypertensive; 52% were diabetic; high percentage of high syntax score were noticed among males, diabetic patients, and smokers; and also low mean of GLS was noticed among diabetic patients and smokers. There was a statistically significant positive correlation between syntax score and each of LVEDD and LVESD and, on the other hand, statistically significant negative correlation between syntax score and each of E/A, GLS, AP2LS, AP3LS, and AP4LS was noticed. Peak GLS cutoff value of 17.8 and 16.5 showed 84% and 93% sensitivity and 70% and 91% specificity to detect high and low syntax score, respectively. **Conclusion:** 2D longitudinal strain analysis has incremental diagnostic value over visual assessment during echocardiography in predicting significant coronary artery disease; GLS may offer a potential sensitive tool to detect significant CAD.