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عنوان البحث

**Strain and strain rate echocardiographic imaging predict occurrence of atrial fibrillation in post-coronary artery bypass grafting patients**

الملخص الانجليزي

**Background:** Atrial fibrillation (AF) occurs very frequently after coronary artery bypass grafting (CABG); it occurs in about 20% - 40% of patients. It is associated with several adverse events. **Aim** of the study: to extrapolate a predictor for postoperative atrial fibrillation (POAF) occurrence which is reproducible and simple to be a part of routine echocardiography screening before CABG. **Methods:** This study included 89 patients scheduled for isolated coronary artery bypass surgery. History, clinical examination, and complete 2D echocardiography with LA speckle tracking analysis were done preoperatively. Patients were then followed up postsurgery for incidence of AF till discharge from the hospital. The patients were divided into 2 groups according to POAF occurrence. **Results:** Patients who developed postoperative AF had older age (P = 0.0032) and longer hospital stay (P = 0.021) and higher stroke incidence but statistically non-significant (14.3% vs 3.3%). The POAF patients showed less peak atrial longitudinal strain (PALS) value than non-POAF patients. The left atrial strain rate values showed a significant difference with the lower left atrial systolic strain rate and less negative (higher) early diastolic strain rate and late diastolic strain rate. After multivariate logistic regression analysis, the independent predictors for POAF were PALS (OR 0.770, 95% CI 0.627–0.946), late LA diastolic strain rate (LASRa) (OR 3.476, 95% CI 1.207–12.186), and age (OR 1.181, 95% CI 1.011–1.379). **Conclusion:** Preoperative LA global strain assessed by 2D speckle tracking analysis could be helpful as a predictor for AF post-CABG surgery, and identification of these patients may reduce its morbidity and mortality. The study suggested PALS value less than 29.8 to be a predictor for the occurrence of POAF.