Two dimensional speckle tracking echocardiography assessment of left ventricular remodeling in patients after myocardial infarction.

Thesis

Submitted in Partial Fulfillment of
The MD Degree in Cardiology

By

Moustafa Kamal Eldin Ibrahim Khalil Saad

MBBCH, MSc

Assistant lecturer of cardiovascular medicine
Faculty of medicine
Fayoum university

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Cardiovascular medicine Department

Faculty of Medicine

Fayoum University

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Moustafa Kamal Eldeen Ibrahim Khalil Saad

MBBCH, MSc

Under supervision of

Prof. Dr. Khalied Ahmad Emam Elkashab

Professor of cardiovascular medicine

Faculty of Medicine , Fayoum University

Dr. Tamer Mosaad Elsaeed Ragab, MD

Lecturer of cardiovascular medicine

Faculty of Medicine, Fayoum University

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Abstract

BACKGROUND: Adverse left ventricular remodeling (LVR) begins in some patients with acute myocardial infarction (AMI) even after successful percutaneous coronary intervention (PCI). LVR comprises progressive ventricular dilatation, distortion of chamber shape, myocardial hypertrophy, and deteriorating function, which if uninterrupted leads to congestive heart failure (CHF) and a poor clinical outcome. **AIMS:** This study aims at evaluating the value of speckle tracking echocardiography in predicting LVR after successful PCI in AMI patients. **MATERIALS AND METHODS:** eighty-four acute myocardial infarction patients (group I) and twenty-seven stable ischemic heart disease patients (group II) were included. A thorough physical examination, ECG and a complete echocardiographic assessment, including speckle tracking study, was performed two days after PCI and then a follow up echocardiography with speckle tracking study was done two months afterwards. Patients of group I were then divided into two subgroups based on the presence of remodeling (I R+, I R-). **RESULTS:** at baseline study global longitudinal strain (-11.14±0.5 VS -16.78±0.4, P<0.0001), longitudinal strain rate (-1.01±0.05 VS -1.07±0.04, P<0.0001), culprit longitudinal strain (-9.74±0.59 VS -15.68±0.49, P<0.0001), culprit longitudinal strain rate (-0.95±0.05 VS -1.02±0.04, P<0.0001) were all lower in subgroup I R+ than in I R-. In the follow up study all of the strain parameters studied were significantly lower in the I R+ subgroup than I R-. The most sensitive and specific parameters were the GLS and CulLS (sensitivities of 91.7% and 95.8% respectively) and (specificities of 95% and 96.7% respectively). **CONCLUSION:** Our findings show that impaired indices LV deformation detected two days after successful PCI for AMI may provide predictive value in detecting LV remodeling.

Keywords: Left ventricular remodeling, acute myocardial infarction, speckle tracking echocardiography.