

# Value of Global and Regional Strain Imaging in Prediction of Left Ventricular Function Recovery After Elective Stenting of Proximal LAD Lesion

*Rana Elhelf*

## **OBJECTIVE:**

To assess global and regional left ventricular strain, in patients with significant proximal left anterior descending coronary artery stenosis, before and one month after PCI, and relating that to one year patient mortality and morbidity. Aiming at evaluation of the safety and efficacy of PCI as a revascularization strategy for proximal LAD stenosis.

## **METHODS AND RESULTS:**

A total of 53 patients admitted to Mansoura University Specialized Internal Medicine Hospital between December 2017 and November 2018 for elective proximal LAD stenting. 2D echocardiography, and speckle tracking were done to study cases before and one month after PCI, assessing EF, GLS and mean LAD territorial strain LV function recovery was defined as  $\geq 10\%$  improvement from the original value. Clinical follow-up was done one year after PCI. Number and percentage of recovered cases were calculated and their relations to patient morbidity and mortality were assessed. We found that the pre-stenting GLS was affected significantly even with normal EF (-13.5 as median), the LAD strain was lower (-11.9). The global longitudinal strain

(GLS) was found to improve significantly one month after PCI ( $p < 0.01$ ). The mean LAD territorial strain showed a more significant improvement one month after PCI than GLS with  $p$  value  $< 0.001$ . 66% of studied cases were considered recovered according to GLS, while the remarkable recovery result was that of the mean LAD territorial strain, reaching about 77.4%. However, GLS recovery was found to be a predictor for occurrence of MACE one year follow up ( $p$  value: 0.019) in contrast to mean LAD territorial strain recovery that showed no significant correlation to occurrence of MACE.

## **CONCLUSION:**

PCI to proximal LAD is a safe, efficient revascularization strategy with high procedural success rate, global and regional recovery of LV function and freedom from MACE. Echocardiographic strain imaging by digital speckle tracking analysis has provided a more precise objective quantification of myocardial function and sensitive detection of subclinical impact of both ischemia and revascularization on global and regional myocardial function.