

## **Abstract:**

**OBJECTIVE:** We sought to assess the left ventricular function before and after coronary artery bypass grafting

**Background:** After coronary artery bypass, it is important to clearly assess residual ischemia and ventricular ejection fraction, as it has been described as a prognostic value in patients with coronary artery bypass graft. It is well recognized that surgical revascularization improves left ventricular functions in patients with coronary artery disease. Echocardiographic evaluation before and after coronary artery bypass grafting is a non-invasive technique that provides quantitative analysis of regional myocardial function, systolic and diastolic function.

**Methods:** We studied 30 patients off-pump and 10 patients on-pump. Echocardiography was performed one week before CABG and 1 month, 2 months and 3 months after CABG. The following parameters were measured at the apical 4-chamber view: Left ventricular End diastolic diameter (LVEDD); Left ventricular End systolic diameter (LVESD); Left ventricular Ejection fraction (LVEF); Left ventricular diastolic function (by pulsed tissue Doppler).

**Results:** Echocardiographic study of LV function showed that significant improvement in ejection fraction after one week of CABG  $59.6 \pm 4.3$  versus  $52.9 \pm 6.3$  before CABG  $P < 0.05$  (*significant difference*) which persisted significantly at different follow-up periods. TDI showed that significant improvement in Em velocity, Em/Am ratio post-operative CABG  $71.4 \pm 7.7$ ;  $1.55 \pm 0.3$  versus  $64.8 \pm 9.7$ ;  $1.3 \pm 0.4$  before CABG respectively  $P < 0.05$  (*significant difference*). Comparison between two groups (off-pump and on-pump CABG) showed that significant differences regarding post-operative complications according to **Days on mechanical ventilation (> 24 hours)** 1 (10%) versus 5 (16.7%) respectively  $P < 0.05$  (*significant difference*). According to **Overall complications** 4 (40%) versus 16 (53.3%) respectively  $P < 0.05$  (*significant difference*).

**Conclusion:** Echocardiography showed marked improvement in systolic LV functions. TDI showed that marked improvement in LV diastolic function.

**Keywords:** CABG, Coronary artery disease, echocardiographic measurements technique, TDI.