Long-term Outcomes of Patients with Moderate Ischemic Mitral Regurgitation Undergoing Isolated Coronary Artery Bypass Surgery Versus Coronary Artery Bypass Surgery with Mitral Valve Surgery

Background: Ischemic MR is common in patients undergoing CABG but the decision to perform additional mitral valve surgery remains controversial

General objective: Compare the outcomes of patients with moderate IMR who underwent CABG with those who underwent CABG plus mitral valve surgery

Methods: This is a retrospective, single center cohort study conducted at a tertiary hospital using data from patients 19 years old and above with Ischemic MR undergoing CABG from January 2012 to December 2022. Those with concomitant procedures aside from MVR were excluded. Preoperative 2D echo LVEF, LVEDD, RegVol, RegFrc, MVA were compared at 6 months and latest follow-up with data collected from electronic health records. Consecutive criterion-based sampling was used. Sample size was based on incidence of postoperative acute renal failure among CABG versus CABG+RMA. Missing data were neither replaced nor estimated. Wilcoxon signed rank test was used to determine the difference of mean, rank and frequency within groups and Mann–Whitney U test for comparison between groups

Results: n=153 patients were included in this study. Mean age 68 years(+/-7.7) Mean follow up 55 months(+/-27.2). Subjects were predominantly male(130/153,85%). 60/153(39.2%) underwent isolated CABG, 73/153(47.7%) CABG+RMA, 9/153(5.88%) CABG+MVR. Mean Pre-operative LVEF 45.05%(+/-11.44). At 6-months Mean LVEF improved to 46.56%(+/-8.45) and by the latest follow-up Mean LVEF increased to 50.04%(+/-8.10). At latest follow-up CABG shows significant increase in LVEF vs CABG+RMA(+8.48%vs+3.45%,p=<0.001). CABG+RMA have significant recurrence of MR(p=<0.001) at latest follow-up. CABG+MVR showed long-term decline in LVEF (-7.44%,p=0.03). Significant in-hospital morbidity in CABG+MVR vs CABG (p=<0.001,HR 5.5)

Conclusion: There is significant long-term improvement in LVEF in patients undergoing isolated CABG. Isolated CABG is non-inferior to CABG+RMA for MR but patients undergoing CABG+RMA experience recurrent MR over time. CABG+MVR negatively impacts long-term LV function and increases in-hospital morbidity

Keywords: Echocardiography, Mitral Valve Insufficiency, Myocardial Ischemia