Aims & Objectives

- Management of "MODERATE CIMR" – YET A MYSTERY!!!
- Comparison of results of concomitant mitral valve repair and coronary artery bypass grafting with Off-pump coronary artery bypass grafting alone in patients with moderate chronic ischemic mitral regurgitation.
- Does OPCAB (as compared to On-pump CABG and MV Repair) offer a mortality benefit, significant reduction in MACCE and improvement in quality of life to patients of ischemic heart disease with moderate CIMR?
- Does the MR jet direction correlate with spontaneous correction of MR with revascularization alone?
- Identify the patient sub-group which would have the highest chances of LV reverse remodeling and propose a new objective surrogate for defining myocardial reserve.

Materials & Methods

- N = 210 (randomized prospective study)
- Group-I (n = 106) patients: Off-pump CABG alone
- Group-II (n = 104) patients: CABG + MV repair
- Primary end points: Mortality
- Secondary end points
  - MACCE
  - Improvement in LVEFSI and MR-grade*
  - Improvement in Functional class

*Serial clinical and echocardiographic evaluations at 6, 12 and 18 months were performed

The statistical calculations were performed using SPSS software v 20.0 (Chicago, IL, USA). Continuous data were expressed as mean ± SD. Univariate analysis of continuous data was performed using student’s t test, whereas chi-square test was used for the categorical data. Patient survival rates were calculated using Kaplan Meier. Multivariate logistic regression was used for estimation of independent risk factors for the factors with significant ‘p’ value (< 0.05) on univariate analysis. The statistical calculations were performed using SPSS software v 20.0 (Chicago, IL, USA). The sample size was calculated as 110 patients per group based on our previous study according to which in CABG group 2% mortality is expected as compared to 13% of CABG with MVR group. The alpha of 0.05 with a drop out rate of 15% was taken.

Results

- We thus conclude that the analysis of our primary end point – mortality indicates that there is a significantly lower early and mid-term mortality in patients undergoing OPCAB only as compared to those undergoing CABC with MV repair. This evaluation reached its 90% power of the study and hence can be considered a significant evidence for the same.
- On evaluating our secondary end points, the following inference have been derived:
  - There was significantly lower MACCE in the patients undergoing OPCAB alone.
  - A significant LV reverse remodeling was recorded in both groups, however the CABC with MV repair group had a significantly higher improvement.
- The direction of jet can be considered an indirect indicator of the cause of CIMR and can be reliably considered as a predictor of resolution of MR.
  - "RFEF" can act as a credible surrogate to identify the patients with myocardial reserve and those who would benefit from either procedure.
- Hence we have been able to classify our patients with a more simplistic approach towards the procedure applied. We can also prognosticate the patients based on this classification.

Limitations: The study model was designed to evaluate the efficacy of both procedures in comparisons. However, the intra-group analysis based on patient characteristics and further sub grouping was not performed. Evaluation of the sub-groups on the basis of patient characteristic is expected to further substantiate our study and would yield a clarity on the extremes of our patient population.