

P75. Preoperative Predictor Of Left Ventricular Reverse Remodeling After Mitral Valve Repair In Ischemic Cardiomyopathy

Naoto Morimoto; Nobuhiko Mukohara; Yoshihisa Morimoto; Keitaro Nakagiri; Masato Yoshida; Tsutomu Shida
Himeji Cardiovascular Center, Division of Cardiovascular Surgery, Himeji, Hyogo, Japan

OBJECTIVES: The aim of this study was to investigate the predictor of left ventricular (LV) reverse remodeling after isolated undersized mitral annuloplasty in ischemic cardiomyopathy.

METHODS: From May 1999 to September 2007, 103 patients (mean age= 70±8 years) underwent undersized mitral annuloplasty for ischemic mitral regurgitation (MR). Out of these patients, 87 patients with no or trivial MR at discharge were enrolled into this study. Preoperative echocardiography showed in Table. Mean MR degree was 3.0±0.7. Tethering angle of mitral leaflets in apical four-chamber view was 86±28°in anterior leaflet, and 51±13°in posterior leaflet. Coronary artery bypass grafting was performed in all patients.

RESULTS: At a mean follow up of 3.8±13 years, LV reverse remodeling was demonstrated in 40 patients (46%). A rate of recurrent MR was 18%. On multivariate analysis, posterior leaflet tethering angle was a sole predictor of LV reverse remodeling (p= 0.02) and recurrent MR (p< 0.001). ROC analysis showed that recurrent MR was associated with preoperative posterior leaflet tethering angle > 55°(sensitivity= 93%, specificity= 93%). At 6 years, freedom from recurrence of MR more than grade 2 was 94±4% in patients with reverse remodeling and 55±10% in patients without reverse remodeling (p= 0.002). Although, there was significant difference, freedom from major adverse cardiac event at 6 years was lower in patients with reverse remodeling (85±6% vs. 73±8%, p=0.19).

CONCLUSIONS: Reverse remodeling following the repair of ischemic MR was associated with longer repair durability and better clinical outcome. Preoperative posterior leaflet tethering angle predicted the efficacy of isolated undersized annuloplasty.

Preoperative echocardiographic profiles

	Reverse remodeling (n=40)	Non-reverse remodeling (n=47)	p-value
MR degree	2.5±0.6	2.5±0.7	0.81
Tethering height, mm	9.7±1.9	10.0±2.6	0.63
Anterior leaflet tethering angle, °	78±30	94±26	0.04
Posterior leaflet tethering angle, °	47±8	55±15	0.01
LV end-diastolic dimension, mm	61±7	60±7	0.83
LV end-systolic dimension, mm	51±8	50±8	0.32
LV ejection fraction, %	30±6	30±8	0.71
Sphericity index	1.7±0.2	1.6±0.3	0.04
Anterior old myocardial infarction	17 (43%)	17 (36%)	0.55
Lateral myocardial infarction	8 (20%)	12 (26%)	0.55
Inferior old myocardial infarction	12 (30%)	22 (47%)	0.11

Freedom from recurrent MR

