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Factors Affecting Prognosis after Surgery for Functional Ischemic Mitral Regurgitation

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Disclosures : None

Introduction: *Gilinov AM at al . J Thoracic Cardiovasc Surg 2001; 122: 1125.*

Ischemic MR is a complication of coronary artery disease

Most cases of IMR are functional rather than structural

Pathogenesis: Annular dilatation due to LV enlargement
local LV remodeling leading to papillary muscle displacement

Course: FIMR following MI is associated with increased mortality

Prognosis:

Lamas GA et al: Circulation 1997; 96:827

194/ 303 (64%) patients with previous Q wave MI had IMR
5 year mortality of patients with significant IMR is 50%

Pellizzon GG et al , "Cadillac trial" : JACC , 2004 ; 43: 1368

1976 STEMI pts :192 (10%) mild MR, 58 (3%) sig MR : 30 days mortality (8.6%
1 year mortality (20.8 %)

Perez de I et al: Eu Heart J 2006: 27; 2655

NSTEMI: poor survival of patients with FIMR
MR was the only predictor of poor survival in multivariate analysis

Surgical approach towards FIMR

Coronary revascularization combining different varieties of MV surgery are recommended for most patients with FIMR .

However factors determining long term prognosis of these patients are missing.

Aim:

To evaluate predictors and parameters that affect long term survival of patients after operation for FIMR

Data source: Valvular heart disease data base

Period: During 10 years 58 pts with FIMR were treated surgically

Definition of FIMR:
Chronic , non reversible MR in the presence of papillary muscle displacement and different varieties of left ventricular geometry after myocardial infarction.

Excluded : Any pts with chordae or papillary muscle rupture
Any primary MV structural abnormalities.
Any pts with significant age related AS
Pts who underwent urgent surgery
Pts with previous CABG or MV surgery

Patients:38/58 (66%) had MV repair
20/ 58 (34%) underwent MV replacement

Data: Pre -OP

Demographic & Clinical assessment : Age, Sex, BSA, FC (NYHA)
Echocardiography (TTE):Grading of MR, TR, LVEF, PASP
Angiography: LVEF , Severity of CAD

Operative: Mode of surgery & Revascularization

Post- OP: F/U: At time interval of 6-12 months after surgery
Clinical assessment & FC (NYHA)
TTE
Fluoroscopy 1/ 6-12 months for mechanical replacement group

Valve Surgery:

MV replacement: Biological :14/20 :Mosaic -11, Magna Perimount-2, CE-1

Bi- leaflet Mechanical: 6/20: SJ -5 , Sorin -1

Technique: preservation of sub valvar structure

MV repair: Ring annuloplasty: Cosgrove ring 15/38

Physio ring 23/38

Varieties of leaflet & Chordae interventions

Surgical coronary revascularization: MV repair : 37/38 (97%)

MV replacement 14/20 (70%)

Maze/appendage ligation: 1/3

Pts clinical characteristics

IFMR n=58 pts	replacement n=20 (34%)	repair n=38 (66%)	p- value
Age years (range)	64.7±8.4 (43-80)	65.3±8.0 (46-80)	0.41
Angio –pre: TVD	10 (50%)	29 (76%)	0.28
Associated CABG	14 (70%)	37(97%)	0.01
MR post: mild moderate severe	0 0 0	7 (50%) 4(28.6%) 3(21.4%)	
Significant TR: pre post	9 (45%) 3 (15%)	13 (34%) 6 (16%)	0.34 0.46
LVEF (%): pre post	37.1±8.7(20-55) 35.6±13.4 (12-60)	40.9±11.9 (20-65) 44.0±16.8 (16-70)	0.19 0.86
PASP (mmHg) pre Post	55.8±22.0(30-75) 44.0±16.8(16-70)	53.9±13.5(30-75) 52.2±18.1 (24-85)	0.83 0.29
F/U: FC(NYHA) I-II Cardiac Death	5(25%) 7(35%)	12(32%) 13 (34%)	0.65 0.95

During mean period of 56± 30 months 20/58 (34%) died

9/20 (45%) occurred at the same year of the operation

Median time to death was 1 year(mean 1.4±2 years, range 0-6 years)

Factors affecting survival

predictors	Death (n=20)	Survive(n=38)	p-value
Mean age years (range)	68.8±5.6(60-77)	62.4±8.9 (43-80)	0.005
BSA m^2 (range)	1.76±0.09(1.6-1.9)	1.84±0.2(1.3-2.3)	0.05
LVEF% pre-op (range)	34±8 (20-50)	43±11 (20-65)	0.003
PASP mmHg post –op (range)	61±18 (24-85)	44±15(16-70)	0.002
Significant TR –post op	6(33%)	3/38 (7%)	0.005

Pre surgery coronary anatomy including IRA

Performance of coronary revascularization on top of MV surgery

Type of MV surgery : Repair Vs Replacement

Post surgery MR grade or EF

The presence of AF

Did not affect prognosis!

Conclusions:

Smaller , older patients with relatively low pre –op LVEF,
suffering from post -op significant PHT and TR have bad prognosis after surgery for FIMR