Tricuspid regurgitation in ischemic mitral regurgitation patients – prevalence, predictors for outcome and long-term follow-up

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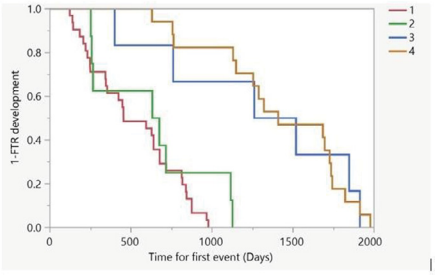
Background: Functional tricuspid regurgitation (FTR) is common in left-sided heart pathology involving the mitral valve. The incidence, clinical impact, risk factors, and natural history of FTR in the setting of ischemic mitral regurgitation (IMR) are less known.
Method: We conducted a cohort study based on data collected from January 2012 to December 2014. Patients diagnosed with IMR were eligible for the study. The median follow-up was five years. The primary outcome is defined as FTR developing at any stage.
Results: Among the 134 IMR patients eligible for the study, FTR was detected in 29.9% (N=40, 20.0% mild, 62.5% moderate, and 17.5% severe). In the FTR group, the average age was 60.7±9.2 years (25% females), the mean LV ejection fraction (LVEF) was 37.3±6.45 [%], LA area 46.4±8.06 [mm^2], LV internal diastolic diameter (LVIDD) 59.6±3.94 [mm], RV fractional area change (RVFAC) 22.3±4.36 [%], systolic pulmonary artery pressure (SPAP) 48.4±9.45 [mmHg]. Independent variables associated with FTR development were age ≥65y [OR 1.2], failed revascularization, LA area ≥42.5 [mm^2] [OR 17.1], LVEF ≤24% [OR 32.5], MR of moderate and severe grade [OR 419.4], moderate RV dysfunction [OR 91.6] and pulmonary artery pressure of a moderate or severe grade [OR 33.6]. During follow-up, FTR progressed in 39 (97.5%) patients. Covariates independently associated with FTR progression were lower LVEF, RV dysfunction, and PHT of moderate severity. LA area and LVIDD were at the margin of statistical significance (p=0.06 and p=0.05, respectively).
Conclusion: In our cohort study, FTR development and progression due to IMR was a common finding. Elderly patients with ischemic MR following unsuccessful PCI are at higher risk. FTR development and severity are directly proportional to LV ejection fraction, to the extent of mitral regurgitation, and SPAP. FTR tends to deteriorate in the majority of patients over a mean of 5-y follow-up.

Figure 3. K-M progression curve for FTR development of the study population by four different echocardiographic groups (see Table S1 for reference)



p<.0001 for the difference between groups (Log-rank and Wilcoxon tests)

Table F3. Echocardiographic parameters according to Groups (reference for Figure 3).

Echocardiographic parameters	Group 1 (n=23)	Group 2 (n=9)	Group 3 (n=14)	Group 4 (n=79)
MR Grade≥2	+[a]	+	+[e]	-
LVEF≤ 24%	+[b]	+	-	-
RVD grade≥ 2	+	-	-[f]	-[k]
sPAP≥ 38 mmHg	+[c]	+[d]	-[g]	-[i]