Implementing Formal Mitral Heart Team Improves Multidisciplinary Evaluation Rate and Survival of Patients with Severe Primary Mitral Regurgitation

Objective: Heart team evaluation is recommended for patients with severe primary mitral regurgitation (PMR) to optimize treatment decisions. However, its impact on patient outcomes remains unknown. We evaluated the impact of implementing mitral HT (mHT) on survival in patients with severe PMR.

Methods: We conducted a retrospective cohort study of patients with new diagnoses of severe PMR in the echocardiogram database in a large healthcare network between 2016-2020. Among 70,510 echos performed, 391 had severe PMR. We compared the incidence of multidisciplinary evaluation by structural cardiology and cardiac surgery and 2-year survival before and after mHT was implemented in January 2019. The mHT consisted of structural cardiology, cardiac surgery, structural echo teams, and coordinators. 1:1 propensity-score matching between pre- and post-mHT was performed using STS predicted 30-day mortality for mitral repair, age, sex, race, heart failure symptoms, inpatient setting, history of MI, and dementia as covariates. A logistic regression model identified predictors of undergoing multidisciplinary evaluation.

Results: Among 391 patients with severe PMR (median age 77 years [IQR 65, 85]; 46% (n=180/391) female), the rate of multidisciplinary evaluation increased from 29% (n=37/126) to 89% (n=235/265) after implementation of mHT (p<0.001). Before mHT implementation, 24% (n=30/126) of severe PMR patients underwent intervention (n=26 surgery, n=4 TEER), which increased to 75% (n=198/265) after mHT implementation (n=166 surgery, n=32 TEER, p<0.001). The median STS predicted 30-day mortality was 2.9% (1.1%, 9.3%) and 1.9% (0.8%, 4.6%) before and after mHT, respectively (p=0.004). Among the 180 propensity-score matched patients, the mortality rate was lower in the post-mHT group at 2 years (19% (n=17/90) vs. 32% (n=29/90), p=0.04). On multivariable model, implementation of mHT and heart failure symptoms were associated with higher odds of undergoing multidisciplinary evaluation (OR: 18.7, 95% CI 10.0-36.4 and OR: 2.72, 95% CI 1.37-5.42, respectively). Female sex and older age were associated with lower odds (OR: 0.39, 95% CI 0.21-0.71 and OR: 0.93, 95% CI 0.91-0.96, respectively).

Conclusions: Implementation of mHT was associated with a drastic improvement in the multidisciplinary evaluation rate for patients with severe PMR. This coincided with higher proportions of patients undergoing mechanical correction of MR and improved overall survival.

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Additional Resources