

Mitral Regurgitation Improvement after Conversion of Atrial Fibrillation to Sinus Rhythm
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Background: Presently there is limited data on the effect of atrial fibrillation (AF) on the severity of mitral regurgitation (MR). **Objective:** To determine whether in pts with significant MR, conversion of AF to sinus rhythm might reduce the severity of MR.

Methods: Between 1992-2011, 446 pts (52% females, mean age 74.0±12.3 yrs) with significant MR and AF underwent cardioversion to sinus rhythm. All had follow up echocardiography within 6 months. We compared the severity of MR during AF to that during sinus rhythm. Improvement was regarded if MR was reduced by at least 2 grades.

Results: After 6 months, 278 (62.3%) pts remained in sinus rhythm (group 1) and 168 (37.7%) were in AF (group 2). There was no difference between the groups with regard to hypertension, diabetes, stable or unstable coronary artery disease. In 122 (27.4%) pts, MR severity improved by more than two grades and it was more pronounced in males 32.5% vs females 22.6% (p=0.019). Significant MR improvement was seen group 1 compared to group 2 (32.4% vs 19%, p=0.002). Left ventricular diameter improved significantly (left ventricular end diastolic (LVEDD) from 5.13 cm to 4.98cm, p=0.036, left ventricular end systolic (LVESD) from 3.62cm to 3.40cm, p=0.0314) compared to group 2 (LVEDD 5.18cm to 5.25cm, p=0.3410, LVESD 3.69cm to 3.71cm, p=0.2995). In univariate analysis, sinus rhythm (OR 1.73, p=0.024), male gender (OR 1.55, p=0.046) and time interval between echo test less than 42 days (OR 1.52, p=0.059) were predictors for significant MR improvement. In multivariate analysis, sinus rhythm remained independent factor for significant MR improvement (OR 1.9, p=0.007).

Conclusions: In 27% of pts with paroxysmal AF, MR improves significantly after cardioversion to sinus rhythm. Final assessment of MR severity should be based on echocardiographic data when the patient is in sinus rhythm.