

FROM THE FAMILY PRACTICE INQUIRIES NETWORK

How should patients with mitral regurgitation be followed?

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■ EVIDENCE-BASED ANSWER

Patients with mild to moderate mitral regurgitation should be assessed periodically for a worsening condition; those with severe mitral regurgitation should be monitored for development of congestive heart failure, atrial fibrillation, and decline in left ventricular ejection fraction or increase in left ventricular end-diastolic diameter (strength of recommendation [SOR]=B).¹⁻³

Cardiologists and general internists perform equally well in identifying severe mitral regurgitation among patients with known mitral regurgitation.⁴ Grade I or II murmurs indicate mild or moderate mitral regurgitation; grade IV or greater murmurs indicate severe mitral regurgitation, and grade III murmurs are indeterminate (SOR=B).⁴

The optimal frequency of evaluation is uncertain. Patients with severe regurgitation should be followed more frequently, with a combination of physical examination and echocardiography (SOR=B).

■ EVIDENCE SUMMARY

A well-done, prospective cohort study enrolled 229 patients (mean age, 66; 70% male) diagnosed with severe mitral regurgitation. Overall 10-year mortality was 43%. Older patients, those with New York Heart Association (NYHA) class III or IV heart failure, or those with left ventricular ejection fraction <60% had higher mortality. Eighty-two percent of patients had surgery within 10 years. Mortality among patients undergoing surgery was equivalent to that of the age-matched US population and significantly less than patients managed without surgery.¹

A second report from the same cohort compared the outcomes of patients undergoing early surgery (within 1 month of diagnosis) with those initially treated medically. Eight patients were excluded from this study because they were unsuitable candidates for surgery. The remaining 221 patients were followed based on their original group assignment of early surgery (63 patients) or medical management (158 patients).

Patients undergoing early surgery were more likely to have symptoms at enrollment than those managed

medically. Patients in the early surgery group had better 5-year (89% vs 78%) and 10-year (78% vs 65%; $P < .05$ for both comparisons) survival and were less likely to develop congestive heart failure or atrial fibrillation. These differences remained significant after multivariate adjustment for potential confounders.²

Another cohort study of patients undergoing surgery for severe mitral regurgitation compared the outcomes of 199 patients with NYHA class I/II symptoms with those of 279 patients with NYHA class III/IV symptoms. Patients with NYHA class I/II had better operative outcomes (0.5% vs 5.4%) and better 5-year (90% vs 73%) and 10-year (76% vs 48%) survival than patients with more severe symptoms. In multivariate analysis, NYHA functional class remained inversely associated with survival.³

In a prospective study testing the ability of physical examination to identify severe mitral regurgitation, 170 consecutive patients with mitral regurgitation assessed by echocardiography underwent a clinical examination by internists or cardiologists blinded to the echocardiogram findings. The negative predictive value for absence of severe mitral regurgitation with a murmur less than grade III ranged from 88% to 100%. Murmurs greater than grade III had a predictive value of 91% for severe mitral regurgitation. Grade III murmurs were not predictive of severity.⁴

This study found no difference in the performance of internists and cardiologists. A systematic review found that cardiologists were able to accurately determine the presence or absence of mitral regurgitation by physical exam, but that trainees (internal medicine house staff and students) were much less accurate in their assessment.⁵

■ RECOMMENDATIONS FROM OTHERS

The American College of Cardiology and the American Heart Association recommend that patients with murmurs consistent with mitral regurgitation (holosystolic or late systolic murmurs) undergo echocardiography. Severity of regurgitation determined echocardiographically should dictate subsequent follow-up.

Patients with mild mitral regurgitation should undergo annual physical examination. Patients with moderate mitral regurgitation should undergo annual clinical evaluation and echocardiographic examination. Asymptomatic patients with severe mitral regurgitation should have a clinical and echocardiographic evaluation every 6 to 12 months. Patients with symptoms of heart failure or with mild left ventricular dysfunction (ejection fraction 50%-60% or end-diastolic dimension 45-50 mm) should be referred for surgery. Surgery should be considered in patients with severe mitral regurgitation and atrial fibrillation (SOR=D).⁶

CLINICAL COMMENTARY

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This question is best answered with the following assumptions:

- The mitral regurgitation is not acute (eg, following acute ischemia or frank myocardial infarction) and does not require immediate intervention

- If no other associated valve disease is found, care should be individualized
- Mitral regurgitation is clearly differentiated from mitral valve prolapse (although in reality they may lie on a continuum).

Given these assumptions, stratifying patients into mild, moderate, and severe categories makes the most sense. These recommendations accurately reflect a literature that has few randomized controlled trials to guide us.

As echocardiography and other technology for assessing the cardiovascular system have become readily available, physicians' ability to accurately auscultate the heart has diminished. Given this, echocardiograms are an increasingly important way to identify and follow patients with all stages of mitral regurgitation.

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