



2017 Update to the AHA/ACC Guideline for Management of Mitral Valve Disease

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Disclosures

- NHLBI CTSN Co-chair
- Medtronic Apollo Exec Cmte

2017 Valvular Heart Disease Guideline Writing Committee

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*Focused Update writing group members are required to recuse themselves from voting on sections to which their specific relationships with industry may apply; see Appendix 1 for detailed information. †ACC/AHA Representative. ‡ACC/AHA Task Force on Clinical Practice Guidelines Liaison. § SCAI Representative. **||**STS Representative. ¶ASE Representative. #AATS Representative. **SCA Representative..



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The MV Apparatus



Otto CM. NEJM 2001; 345:740

- Leaflets
- Annulus
- [LA endocardium]
- Chordae tendineae
- Papillary muscles, LV

Chronic Mitral Regurgitation Etiology

Primary

- Myxomatous
- Endocarditis
- MAC, RHD, XRT
- Other

Secondary

- Ischemic
- DCM
- HOCM*
- Other

Leaflet/Chordal Disease

Ventricular Disease

Which of the following anti-thrombotic strategies can reasonably be employed for patients with AF and native VHD other than moderate or severe rheumatic MS?

ASA 81 mg daily + clopidogrel 75 mg daily
 Rivaroxaban 30 mg daily
 Warfarin to INR 1.5-2.0 + aspirin 81 mg daily
 Apixaban 5 mg twice daily
 Dabigatran 110 mg twice daily





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Anticoagulation for Atrial Fibrillation in Patients With VHD (New Section)

Recommendations	COR	LOE
New: Anticoagulation with a VKA is indicated for patients with rheumatic mitral stenosis and AF	I	B-NR
New: Anticoagulation is indicated in patients with AF and a CHA ₂ DS ₂ -VASc score of 2 or greater with native aortic valve disease, tricuspid valve disease, or MR		C-LD
New: It is reasonable to use a DOAC as an alternative to a VKA in patients with AF and native aortic valve disease, tricuspid valve disease, or MR and a CHA_2DS_2 -VASc score of 2 or greater	lla	C-LD





Primary (Degenerative) MR



For which of the following findings would MV repair be considered reasonable (Class IIa) in a patient with severe primary MR?

- 1. Symptoms and EF < 0.30
- 2. Asymptomatic, normal LV (EF >0.60, ESD <4.0cm) with progressive decrease in EF or increase in LV size on serial echo's.
- 3. Asymptomatic, normal LV, Barlow's deformity, likelihood of successful repair 80%
- 4. Asymptomatic, normal LV, bileaflet pathology, likelihood of successful repair 85%





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Asymptomatic Severe Primary MR



Primary MR





Suri R et al. J Am Coll Cardiol 2016;67:488-98

Chronic Primary Mitral Regurgitation Intervention

Recommendation	COR	LOE
Percutaneous MV repair may be considered for severely symptomatic patients (NYHA class III-IV) with chronic severe primary MR (stage D) who have a reasonable life expectancy, but a prohibitive surgical risk because of severe comorbidities	llb	В



Ischemic MR



- Which of the following interventions is reasonable (Class IIa) for patients with secondary (functional) MR?
- 1. Transcatheter edge-to-edge repair for severe MR with NYHA Class III symptoms
- 2. Down-sized annuloplasty for moderate ischemic MR without need for CABG
- 3. Chord-sparing MVR for NYHA Class III/IV with severe ischemic MR
- 4. MV surgery before trial of CRT in patient with wide LBBB and severe functional MR





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Chronic Severe Secondary Mitral Regurgitation: Intervention

Recommendation	COR	LOE
It is reasonable to choose chord-sparing MVR over down-sized annuloplasty repair if operation is considered for NYHA Class III/IV patients with chronic severe ischemic MR and persistent symptoms despite GDMT for HF	lla	B-R

New 2017



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Recurrent MR over 12 Months Repair vs. Replacement for Severe IMR





Severe Ischemic MR 2-Year Outcomes



Goldstein D et al. NEJM 2016; 374:344-53



Moderate Ischemic MR 2-Year Outcomes

1^o EP= LVESVI (no difference) Lower prevalence of mod or severe MR in repair patients but higher rates of neurologic events and SVT



Michler RE, Smith PK et al. NEJM April 3, 2016

Chronic Severe Secondary Mitral Regurgitation: Intervention

Recommendation	COR	LOE
The usefulness of mitral valve repair in patients with moderate ischemic MR undergoing CABG is uncertain	llb	B-R





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- Improved knowledge of natural history
- Better patient selection & timing of valve intervention
- Multi-modality imaging (echo, CT)
- Surgical & transcatheter techniques
- Peri-procedural management; e.g., "minimalist TAVR"

Indications for Intervention for Rheumatic Mitral Stenosis



TMVRp in US

Timeline of FDA Approval of Mitral Repair Devices, Procedure Volume, and Mortality



Grover, F.L. et al. J Am Coll Cardiol. 2017;69(10):1215-30.



Stages of Chronic VHD



Asymptomatic *Primary* Mitral Regurgitation: Intervention (cont.)

Recommendations	COR	LOE
MV repair is reasonable for asymptomatic patients with chronic severe nonrheumatic primary MR (stage C1) and preserved LV function in whom there is a high likelihood of a successful and durable repair with 1) new onset of AF or 2) resting pulmonary hypertension (PA systolic arterial pressure >50 mm Hg)	lla	В





Complications after MV Repair



Recurrent MR

Asymptomatic *Primary* Mitral Regurgitation: Intervention

Recommendations	COR	LOE
MV surgery is recommended for asymptomatic patients with chronic severe primary MR and LV dysfunction (LVEF \leq 60% and/or LVESD \geq 40 mm, stage C2)	I	В
MV repair is reasonable in asymptomatic patients with chronic severe primary MR (stage C1) with preserved LV function (LVEF >60% and LVESD <40 mm) in whom the likelihood of a successful and durable repair without residual MR is >95% with an expected mortality <1% when performed at a Heart Valve Center of Excellence	lla	В
New: Mitral valve surgery is reasonable for asymptomatic patients with chronic severe primary MR (stage C1) and preserved LV function (LVEF >60% and LVESD <40 mm) with a progressive increase in LV size or decrease in EF on serial imaging studies	lla	C-LD
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