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Rheumatic Heart Disease in Latin America



Epidemiology & Advances in the Treatment of Rheumatic Heart Disease

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Disclosure: None



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Historical perspective of RHD

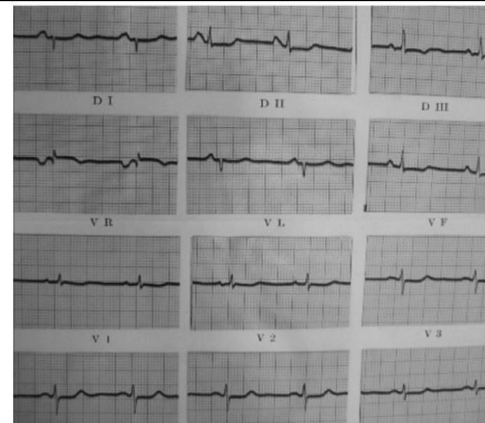


Figura 1 Electrocardiograma de un paciente del maestro Ignacio Chávez Sánchez, con estenosis mitral pura. Nótese la excelente calidad del trazado. (Cortesía del doctor Ignacio Chávez Rivera).

Rheumatic fever 'licks at the joints, but bites at the heart'

Ernest-Charles Lasègue



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Overview

Rheumatic Heart Disease (RHD) is one of the leading non-communicable diseases in low and middle-income countries and accounts for up to 1.4 million deaths per year.

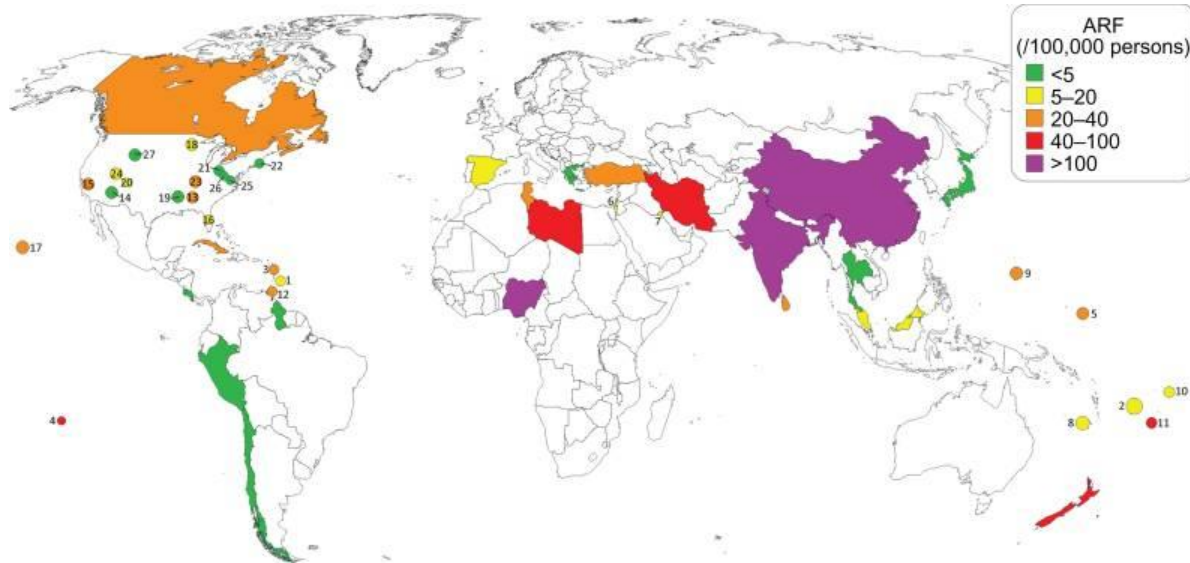
Acute rheumatic fever and rheumatic heart disease can be regarded as physical manifestations of **poverty and social inequality**

Patients with RHD also suffer from complications related to atrial fibrillation, infective endocarditis, and during pregnancy.

Despite the magnitude of the problem, **there are few systematically collected contemporary data on disease (Low and middle-income countries)**



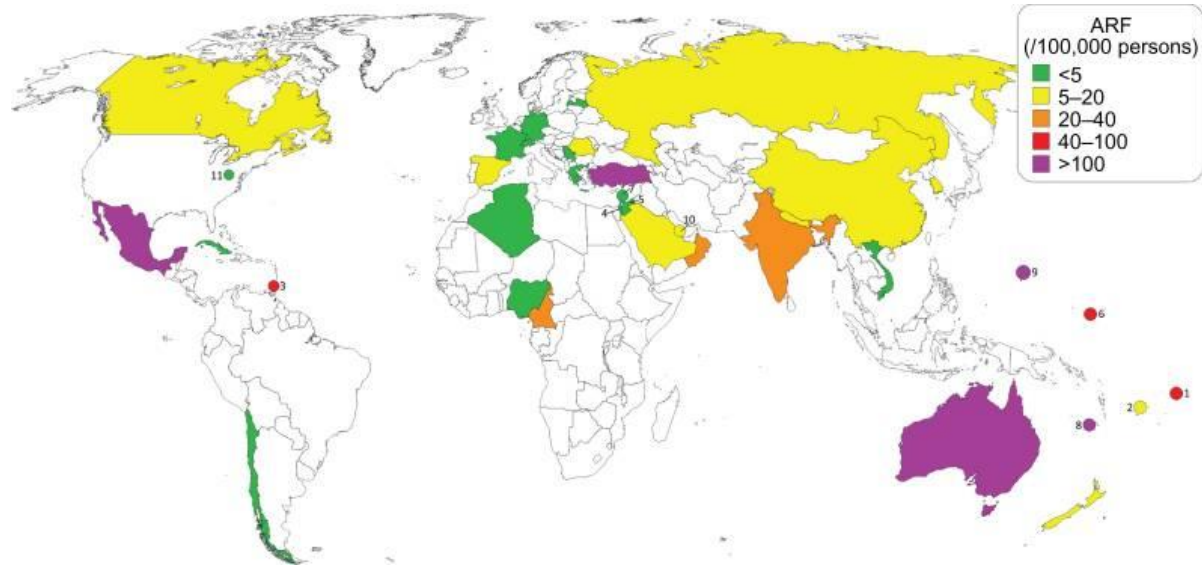
ARF worldwide epidemiology



Map showing reported worldwide incidence of ARF from 1970 through 1990



ARF worldwide epidemiology

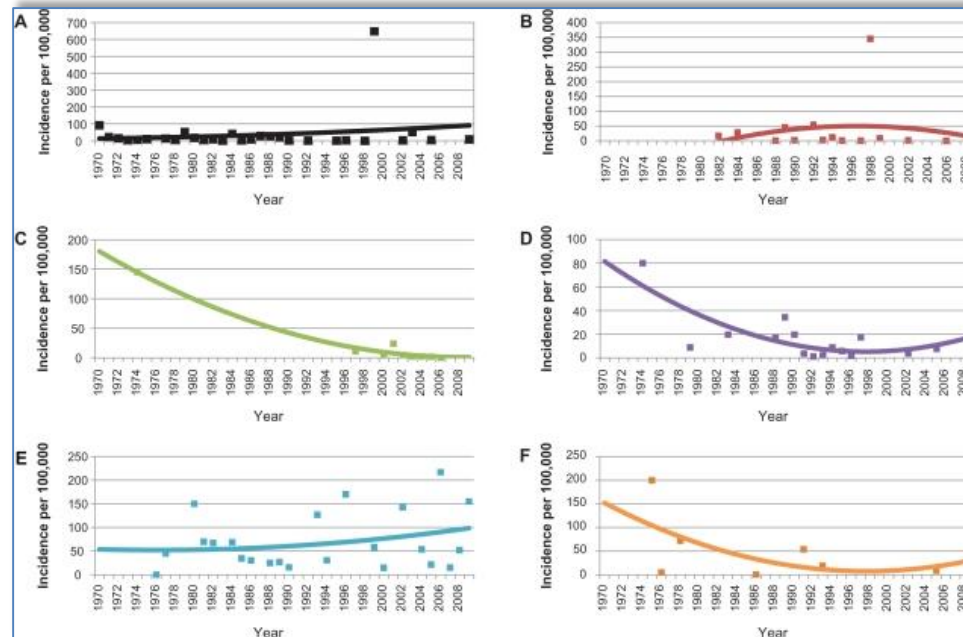


Map showing reported worldwide incidence of RHD from 1991 through present



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ARF worldwide incidence

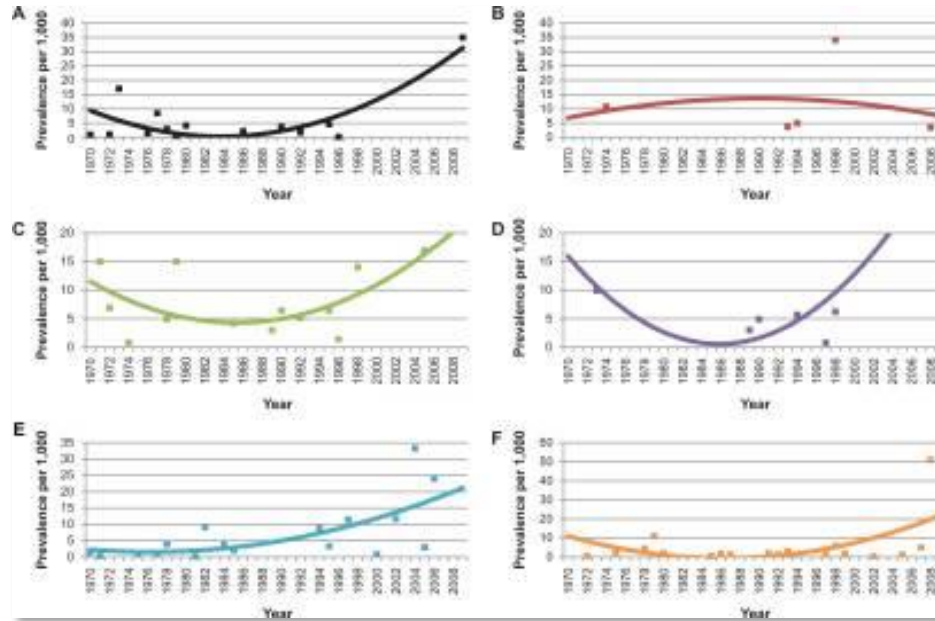


Trends of acute rheumatic fever incidence per 100,000 persons for each WHO region, **A)** The Americas, **B)** Europe, **C)** Africa, **D)** Eastern Mediterranean, **E)** Western Pacific, and **F)** Southeast Asia. Points represent reported incidence from the literature.



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RHD worldwide incidence

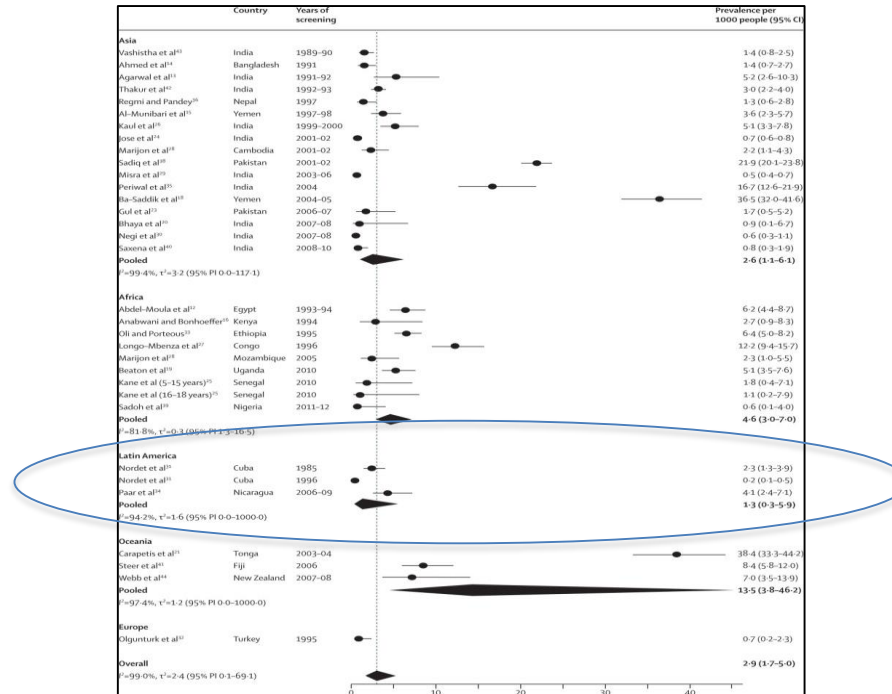


Trends of rheumatic heart disease prevalence per 1000 persons for each WHO region, **A)** The Americas, **B)** Europe, **C)** Africa, **D)** Eastern Mediterranean, **E)** Western Pacific, and **F)** Southeast Asia. Points represent reported prevalence from the literature.



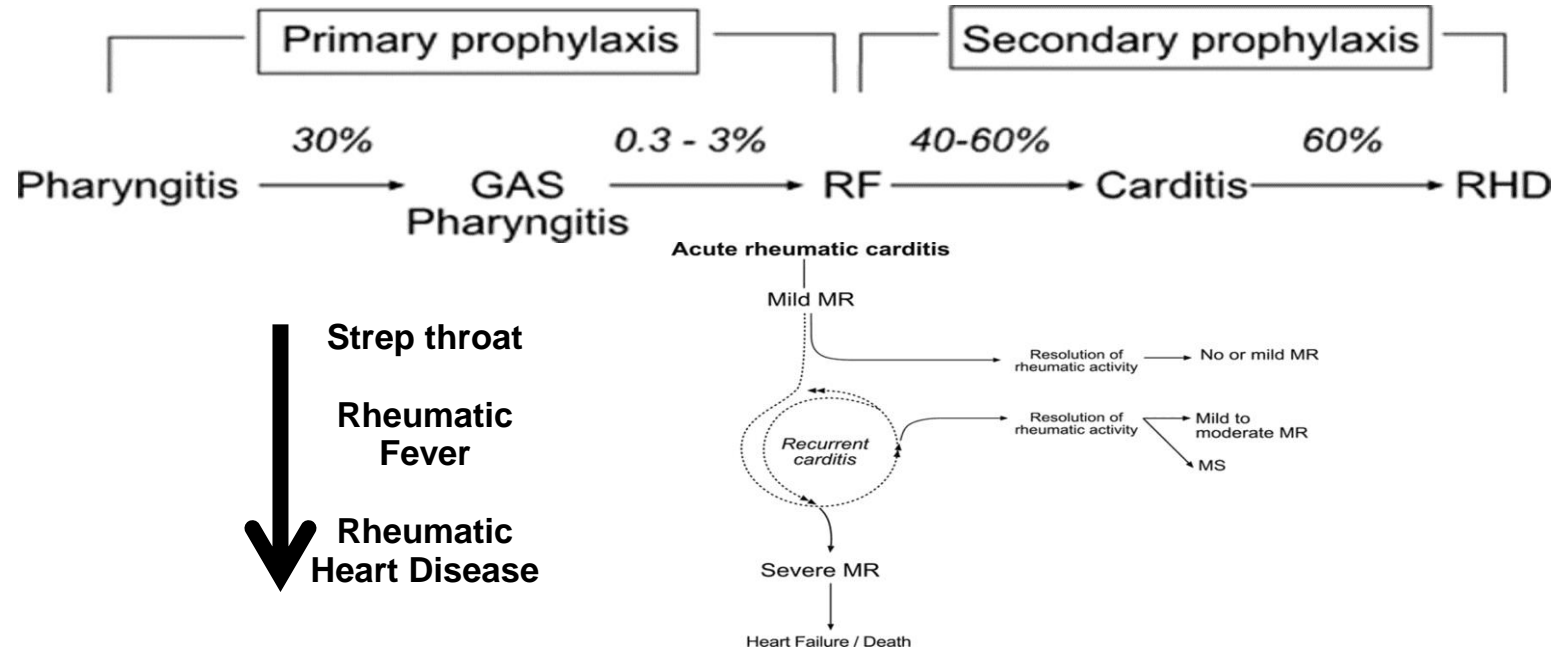
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RHD in Latin America



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Risk of progression and prophylaxis



Mohammed R. Essop, and Ferande Peters . Circulation. 2014; 130 : 2181-2188



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The best treatment is “prevention”

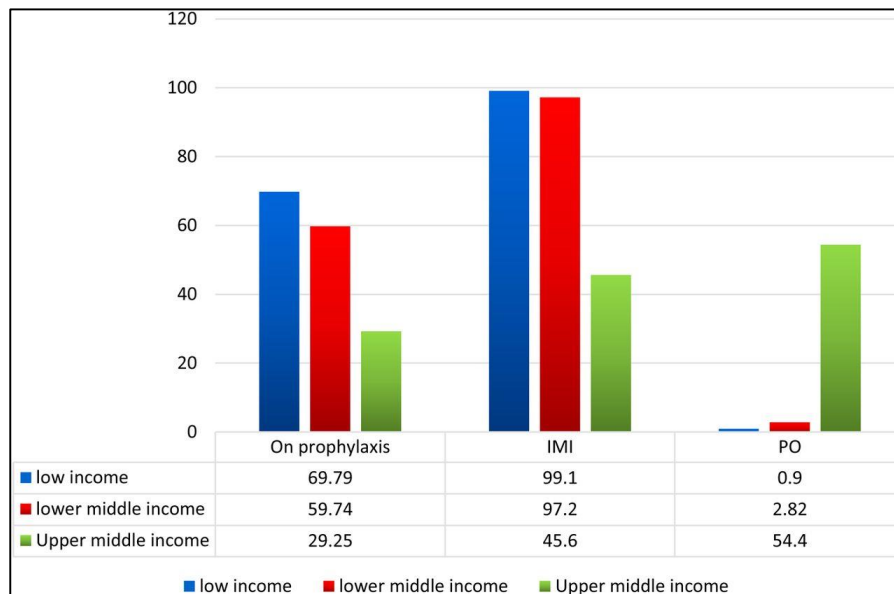
Primary prevention

Secondary prevention

Agent	Dosage	Evidence
Penicillin G benzathine	Patients weighing 27 Kg or less 600 000 units IM every 3-4 weeks	IA
Penicillin V potassium	250 mg orally twice daily	IB
Sulfadiazine	Patients weighing 27 Kg. or less 0.5 g orally once daily Patients weighing more than 27 Kg 1 g orally once daily	IB
Macrolide or azalide ab Allergic to penicillin and sulfadiazine	Varies	IC



REMEDY the Global Rheumatic Heart Disease Registry



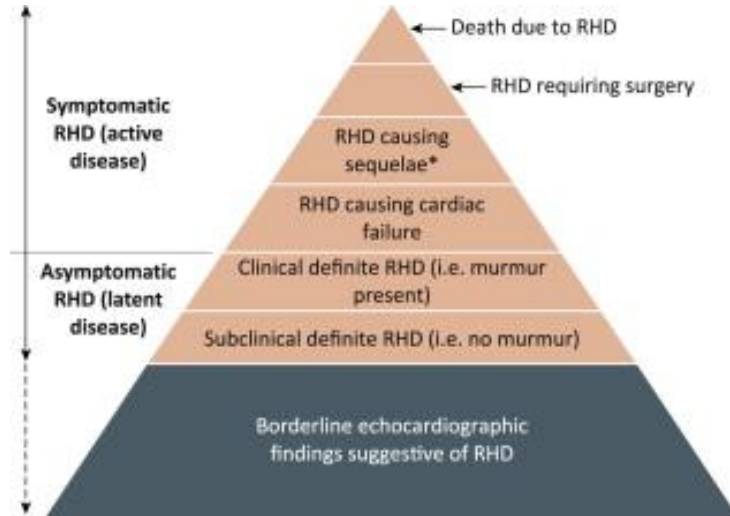
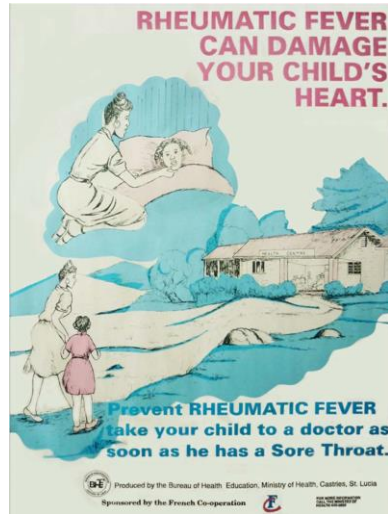
Liesl Zühlke et al. Eur Heart J 2015;36:1115-1122

Adherence to secondary prophylaxis with penicillin in low-income, low-middle-income, and upper-middle-income countries.



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Global burden of Rheumatic Heart Disease



Would Any Intervention Significantly Alter the Natural Progression of Subclinical Rheumatic Heart Disease?

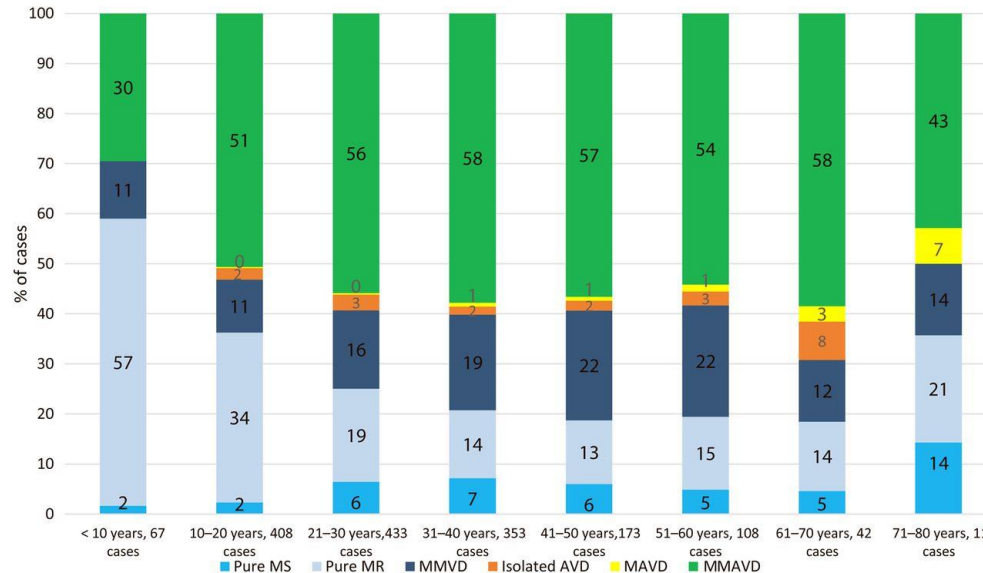
Zühlke LJ, Steer AC. Estimates of the Global Burden of Rheumatic Heart Disease Global Heart 2013; 189-195.
Mohammed R. Essop, and Ferande Peters . Contemporary Issues in Rheumatic Fever and Chronic Rheumatic Heart Disease. Circulation 2014; 130 : 2181-2188



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REMEDY the Global Rheumatic Heart Disease Registry

The pattern of native rheumatic valve disease in 2475 children and adults with no percutaneous or surgical interventions



AVD, aortic valve disease; MAVD, mixed aortic valve disease; MMAVD, mixed aortic and mitral valve disease; MMVD, mixed mitral valve disease; MR, mitral regurgitation; MS, mitral stenosis.



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Treatment of Rheumatic Heart Disease

Treatment depends on the severity of rheumatic heart disease, but may include:

- *Hospital admission to treat heart failure*
- *Antibiotics for infection (especially of the heart valves)*
- *Blood-thinning medicine to prevent stroke or thin blood for replacement valves*
- *Balloons inserted through a vein to open up stuck valves*
- *Heart valve surgery to repair or replace damaged heart valves.*
- *In special considerations: Pregnancy*



Intervention on rheumatic heart disease

CLASS I

Percutaneous mitral balloon commissurotomy is recommended for symptomatic patients with severe MS (mitral valve area ≤ 1.5 cm², stage D) and favorable valve morphology in the absence of left atrial thrombus or moderate-to-severe MR. (Level of Evidence: A)

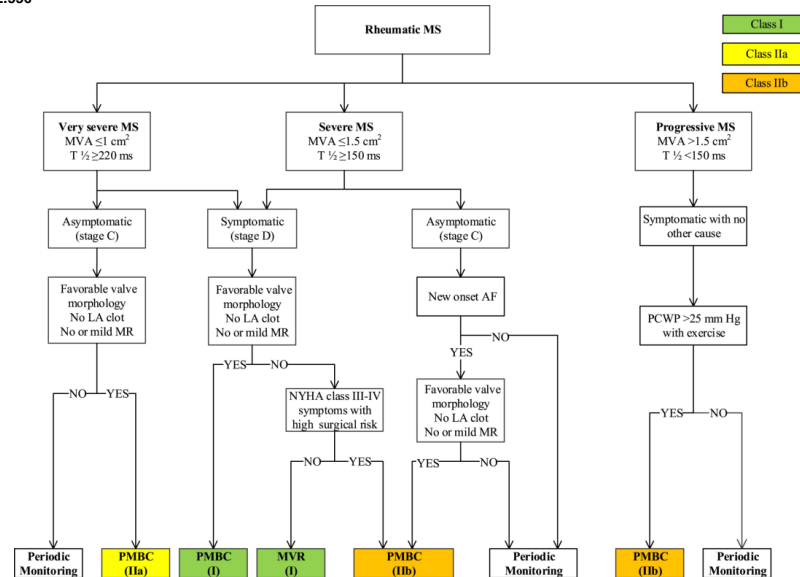
Percutaneous mitral balloon commissurotomy is recommended for asymptomatic patients with moderate or severe MS and valve morphology that is favorable for percutaneous mitral balloon valvotomy who have pulmonary hypertension (pulmonary artery systolic pressure > 50 mm Hg at rest or > 60 mm Hg with exercise) in the absence of left atrial thrombus or moderate to severe MR (level of evidence: C)



Surgery in rheumatic heart disease

From: 2014 AHA/ACC Guideline for the Management of Patients With Valvular Heart Disease: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines

J Am Coll Cardiol. 2014;63(22):e57-e185. doi:10.1016/j.jacc.2014.02.536



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Conclusions

On a worldwide basis, Rheumatic Fever remains the primary cause of Valvular Heart Disease.

Surgery or catheter based interventional procedures are palliative and often scarce in resource-poor settings.

Effective prevention is possible through early detection, public education and antibiotic prophylaxis.

REMEDY demonstrates that there are gaps in the implementation of medical and surgical interventions of proven effectiveness for RHD in low- and middle-income countries.

