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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
Historical perspective of RHD

Rheumatic fever ‘licks at the joints, but bites at the heart’

Ernest-Charles Lasègue
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).
Map showing reported worldwide incidence of ARF from 1970 through 1990
Map showing reported worldwide incidence of RHD from 1991 through present
Risk of progression and prophylaxis

Strep throat
Rheumatic Fever
Rheumatic Heart Disease

Mohammed R. Essop, and Ferande Peters. Circulation. 2014; 130 : 2181-2188
The best treatment is “prevention”

Primary prevention

Secondary prevention

<table>
<thead>
<tr>
<th>Agent</th>
<th>Dosage</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penicillin G benzathine</td>
<td>Patients weighing 27 Kg or less 600 000 units IM every 3-4 weeks</td>
<td>IA</td>
</tr>
<tr>
<td>Penicillin V potassium</td>
<td>250 mg orally twice daily</td>
<td>IB</td>
</tr>
<tr>
<td>Sulfadiazine</td>
<td>Patients weighing 27 Kg or less 0.5 g orally once daily</td>
<td>IB</td>
</tr>
<tr>
<td></td>
<td>Patients weighing more than 27 Kg 1 g orally once daily</td>
<td></td>
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<tr>
<td>Macrolide or azalide ab</td>
<td>Varies</td>
<td>IC</td>
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<tr>
<td>Allergic to penicillin and sulfadiazine</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Adherence to secondary prophylaxis with penicillin in low-income, low-middle-income, and upper-middle-income countries.

Liesl Zühlke et al. Eur Heart J 2015;36:1115-1122
Global burden of Rheumatic Heart Disease

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

Mohammed R. Essop, and Ferande Peters. Contemporary Issues in Rheumatic Fever and Chronic Rheumatic Heart Disease. Circulation 2014; 130 : 2181-2188
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.
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 \( \leq 1.5 \, \text{cm}^2 \), 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


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.