ACUTE RHEUMATIC FERVER AND RHD

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EMERGENCY MEDICINE

MAKCHS

OBJCTIVES

Over th next 20 minutes, we are going to discuss; Focus is going on ARF

- Key epidemiological trends for ARF.
- Understand the basic pathophysiology and clinical manifstations of ARF
- Discuss the key prevention strategies for ARF that can be scaled at a national level.

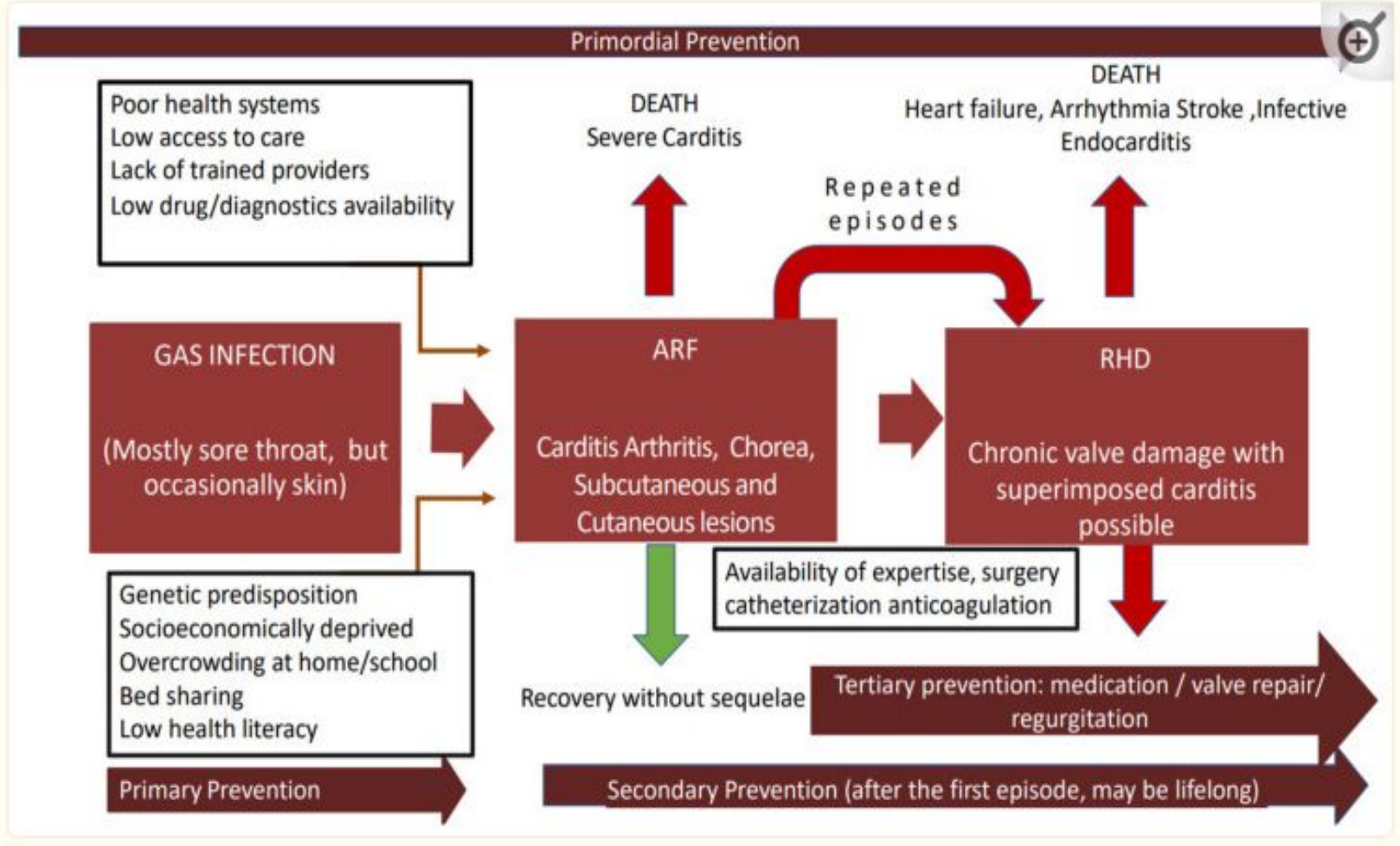
DEFINITION

- A systemic connective tissue disease which follows a streptococcal upper respiratory tract infection.
- It may involve the heart, joints, skin, subcutaneous tissue, and CNS.
- The first attack usually occurs between ages of 5 –15 years.

EPIDEMIOLOGY

- Remains of concern in LMICS
- Predominantly affects children, adolescents, and young adults.
- More recent estimates put the global burden of RHD at 33.4 million and annual mortality around 639,000.
- Bimerwe et al in EA 17.9 per 1000 children.
- Uganda ARF among children aged 5-14 years as 25/100 000 person-years in Lira and 13/100 000 person-years in Mbarara - **Okello (Lancet)**

NATURAL HISTORY & PATHOGENESIS



- Adhesion and internalization (M-Protein) – pharynx or skin

- Molecular mimicry (cross reacts with tissues in the heart, joints, brain, skin, and subcutaneous tissues of the susceptible host)

CLINICAL FEATURES

- GAS pharyngitis can be difficult to differentiate from viral infections
- Multiorgan disease

- Pancarditis (50-80%)
- Arthritis and arthralgia (60–80%)
- Sydenham's chorea (10–30%)
- Erythema marginatum <6%
- Subcutaneous nodules (0–10%)

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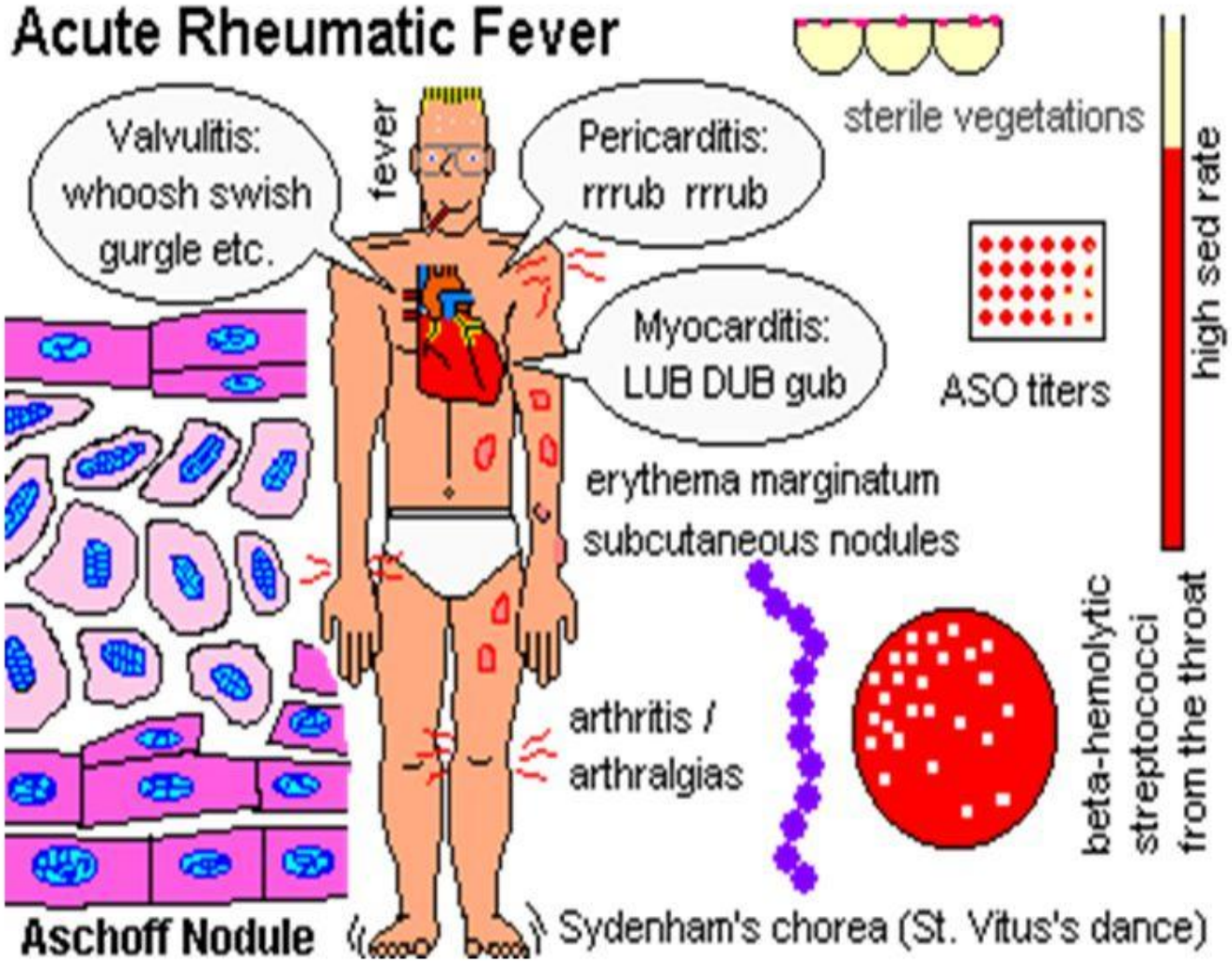
RHD (regurgitation & stenosis)
- Heart failure
- Arrhythmias
- Infective endocarditis
- Thromboembolic phenomena.

Clinical Manifestations



DIAGNOSIS

- Based on a combination of clinical and laboratory criteria;
- Anti-Streptolysin-O (ASO) titre - most used test to confirm antecedent streptococcal infection - > 200
- Anti-DNase B or anti-hyaluronidase assays can be used to establish antecedent infection if ASO titres are low.

The modified Jones criteria (2015)

LR populations

Major criteria	Minor criteria
1. Carditis Clinical and/or subclinical 2. Arthritis Polyarthritis only 3. Chorea 4. Subcutaneous nodules 5. Erythema marginatum	1. Polyarthalgia 2. Fever (≥38.5°C) 3. ESR ≥ 60 mm/h and/or CRP ≥3.0 mg/dL 4. Prolonged PR interval after accounting for age variability

Moderate risk to HR populations

Major criteria	Minor criteria
1. Carditis Clinical and/or subclinical 2. Arthritis Monoarthritis or polyarthritis Polyarthralgia 3. Chorea 4. Subcutaneous nodules 5. Erythema marginatum	1. Monoarthralgia 2. Fever (≥38°C) 3. ESR ≥30 mm/h and/or CRP ≥3.0 mg/dL 4. Prolonged PR interval after accounting for age variability

CRP, C-reactive protein; *ESR*, erythrocyte sedimentation rate.
For all patient populations with evidence of preceding Group A streptococcal infection.
Diagnosis of initial ARF: 2 major manifestations or 1 major plus 2 minor manifestations.

MANAGEMENT

GOALS:

- Eradication of the GAS using antibiotic (penicillin or alternative in penicillin allergic individuals).
- Symptomatic relief with anti-inflammatory drugs, analgesics, and bed rest.
- Secondary prophylaxis to prevent new episodes of ARF for patients with previous ARF or established RHD patients.

- ❑ Bed rest

To eradicate any streptococci:

- ❑ Phenoxymethylpenicillin (Pen V) 250 mg every 6 hours for 10 days

Child: 125 mg per dose

- ❑ Or Benzathine benzylpenicillin dose 1.2 MU IM stat

Child < 30 kg: 0.6 MU

Child > 30 kg: 1.2 MU

To treat the inflammation

- ❑ Acetylsalicylic acid 4-8 g/day untill signs of inflammation subside (usually 4-8 weeks)

Child: 80-100 mg/kg/day in 3 doses

- ❑ Plus magnesium trisilicate compound 2-4 tablets every 8 hours

Prophylaxis

To prevent further episodes

- ❑ Pen V 500 mg 12 hourly

Child: 125-250 mg 12 hourly

- ❑ Or Benzathine benzylpenicillin 1.2 MU IM every 4 weeks

Child <30 kg: 0.6 MU

If allergic to penicillin:

- ❑ Erythromycin 250 mg 12 hourly
- ❑ Child: 10 mg/kg twice a day

Duration of prophylaxis depends on severity of disease:

- Rheumatic fever without carditis: for 5 years or until age 18 or 21 years old
- Carditis but no residual heart disease: for 10 years
- or until age 25 years old
- Carditis with residual heart disease: untill age 40-45 years or for life

TAKEAWAYS

- Have a high index of suspicion for ARF.
- Early recognition and referral of patients suspected or confirmed to have ARF or RHD is crucial to patient management.
- ARF is very preventable.
- National program for notification and decentralization of care for the GAS infection, ARF & RHD is important.

END

- THANK YOU FOR LISTENING
- I WILL TAKE QUESTIONS LATTER