CARDIAC INFECTIONS

RHEUMATIC FEVER

Sequelae that occurs 2-4 wks following group A strep pharyngitis

Major Manifestations:

- **Arthritis**: earliest manifestation. knees, ankles → elbows, wrists
  - responds to empiric treatment of NSAIDs or steroids
- **Carditis**: presents within 3 weeks of infection
  - Pancarditis
  - Predominant manifestation → valvulitis (mitral and aortic)
    - mitral regurg → pansystolic murmur at apex radiating to left axilla
    - aortic regurg → early diastolic murmur at base of heart. Louder if sitting forward
- **Chorea**: abrupt, rhythmic, involuntary movement, muscle weakness, emotional disturbance
  - can be months after infection
- **Erythema Marginatum**: pink, nonpruritic rash of trunk/limbs (sparing face)
  - early manifestation
- **Subcutaneous Nodules**: firm, painless lesions from mm-2cm in size
  - located over bony surface or near tendons on extensor surfaces → elbows, symmetric

Minor Manifestations: arthralgia, fever, ↑acute phase reactants (ESR/CRP), prolonged PR interval

Management:

Abx → IM penicillin G

Symptomatic → NSAIDs/aspirin. 2nd line → steroids

Prevention: long acting penicillin G IM q28d as chronic antimicrobial prophylaxis

RHEUMATIC HEART DISEASE

10-20 years after original illness

Most common cause of acquired disease worldwide

Manifestations: | Management:

Pericarditis: precordial chest pain + pericardial friction rub → NSAIDs for inflammation

Vasculitis: predominant manifestation

Pathologic valvular regurgitation

- mitral > aortic

HF and LV dilation due to severe valve disease → B-blockers, diuretics, ACE
- Stabilize if hemodynamically unstable

Myocarditis → glucocorticoids if severe

VIRAL MYOCARDITIS

inflammation of cardiac muscle due to infectious or non-infectious causes

etiologies:
- Viral → CMV, EBV, hepatitis, HIV, influenza, varicella, mumps, etc
- bacterial → GC/CT, legionella, meningococcal, pneumococcal, strep, staph
- Spirochetal → Lyme disease, syphilis
- mycotic → aspergillosis, candidiasis, cryptococcosis
- Rickettsial → Q fever, RMSF
- Protozoa, helminths
- Cardiotoxins → Etoh, cocaine, radiation, cyclophosphimide
- Systemic disorders

Manifestations: diffuse OR focal inflammation → high variability
subclinical → fatigue, chest pain → HF → cardiogenic shock → arrhythmias → sudden death

Diagnosis: ECG, cardiac markers, CXR
- Labs → ↑CRP/ESR
- Clinical suspicion IF cardiac disease signs/sx but NO CVS risk factors
- definitive → endomyocardial biopsy

Management:
- Supportive - manage specific disorders
  - HF → ACE/ARB/ARNI, b-blocker, diuretics. Arrhythmias.
  - Mechanical circulatory support

ENDOCARDITIS

Infection of endothelium and valves (mitral most common)
- If IV drug use → tricuspid valve

Microbiology
- Acute → Staph, Strep, enterococci (virulent organisms)
- Subacute → Strep viridians
- IV drug use → MRSA and pseudomonas
- Prosthetic valve → Staph epidermidis
- Men > 50 → enterococci
- HACEK → haemophilus, actinobacillus, cardiobacterium, eikenella, Klingella

Diagnosis: TTE first (TEE if not diagnostic)
- Other - CBC, blood Cx x3, BMP, EKG
- Duke Criteria → 2 major OR 1 major + 3 minor OR 5 minor
  - major: ≥2 + cultures, persistantly +, +echo, new valvular regurg
  - minor: predisposed, fever, vascular, immune, +culture

Empiric: vancomycin
- Prosthetic valve → vancomycin + gentamicin + cefepime/carbapenem

Targeted:

	native valve	Prosthetic valve
MSSA	nafcillin, oxacillin	nafcillin + gentamicin + rifampin
MRSA	vancomycin	vancomycin + gentamicin + rifampin
HACEK	ceftriaxone or ciproflox	↳ stop gent after 2 wks