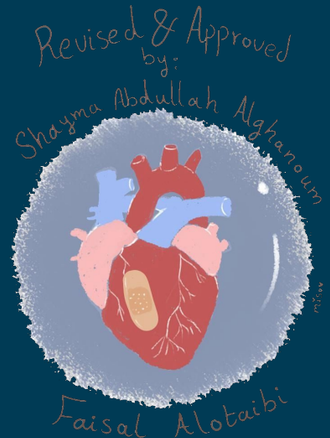
CVS - Summary

TEAM 439

MICROBIOLOGY



1. Infective Endocarditis

Classification	Acute	Subacute	Native	Prosthetic	IVDU
Common organism	Staph. aureus	Strept. viridans	Staph. aureus Strept. viridans	Staph. Epidermidis Strept. viridans	Staph. aureus
Pathophysiology	Endothelial injury → Bacteremia → Adherence → invasion & disease.				
Risk Factors	Cardiac abnormalities (High: Previous IE & Aortic valve disease) (Moderate: other valves), IV drug use, Rheumatic heart disease, and others.				
Diagnosis Remember : know the involved side of the heart (Right → Lung) (Left → Other sites)	○ Microbiology: minimum of 3 blood cultures. (Negative culture? Maybe fastidious or previous antibiotics) ○ Echocardiography: see vegetations & abscess (TEE is better than TTE) ○ Non-specific lab tests, ECG, and Urinalysis.				
	○ New regurgitation heart murmurs and signs of CHF (worsening murmur). ○ Continuous fever. ○ Specific signs: Osler's Nodes, Janeway lesions, and Roth Spots ○ Nonspecific signs: petechiae, splinter hemorrhages				

Clinical Presentation	Acute	Subacute
	Few days, Very sick Normal heart is affected, rapid destruction Usually fatal within 6 weeks High grade fever and chills.	1-2 weeks, mildly sick Damaged heart is affected, slow destruction Usually fatal by one year Low grade fever

Complications	**Embolic:** a part of the vegetation travels somewhere else and embolize & causes infection. E.g. brain → stroke, Heart → myocardial infarction, Eye → retinal embolus, Lung → pulmonary emboli. **Local spread:** infection inside the heart. (heart failure, paravalvular abscess, pericarditis) **Metastatic spread:** bacteria spreads through bacteremia e.g. osteomyelitis.		
Treatment	Valve	**Native**	**Prosthetic**
	MSSA / MRSA	Cloxacillin (or vancomycin in case of MRSA)	Cloxacillin (or vancomycin in case of MRSA) In addition to Gentamicin & Rifampin
	Streptococcus (strept.viridans)	If MIC is low (<0.1), we need to use one antibiotic. (Penicillin alone or Cephalosporin alone) If MIC is intermediate (>0.1-0.5), we need to use 2 antibiotics (Penicillin in addition to Gentamicin) If MIC is high (>0.5), we need to use 2 antibiotics but for longer time (Ampicillin in addition to Gentamicin)	

	2. Myocarditis	3. Pericarditis
Prognosis	Mild & Self limiting	Mild & Self limiting in case of acute pericarditis
Cause	- Viruses: Coxsackievirus B or Coxsackie virus A, Echoviruses. - Bacterial: Corynebacterium diphtheriae, Syphilis, Lyme disease.	Infectious: - Viruses: Coxsackievirus B or Coxsackie virus A, Echoviruses - Bacterial: Strept. pneumoniae..,M. Tuberculosis - Parasitic infections:toxoplasmosis Non-infectious: SLE, Uremia
Clinical Presentation	- Chest pain - Arrhythmias (Palpitations) - Sweating - Fatigue - Congestive heart failure	Acute: - Chest pain which is relieved when sitting forward. (Positional retrosternal) - Pericardial rub on examination Chronic: - Tuberculosis pericarditis has insidious onset. - Incidence of pericarditis in patients with pulmonary TB
Diagnosis	- Elevated Troponin or Elevated CK-MB. (cardiac enzymes) - ECG (**Nonspecific** ST-T changes and conduction delays are common). - Blood culture - Muscle biopsy in extreme cases	- ECG will show **specific** changes: ST elevation, PR depression and T-wave inversion may occur later. - CT scan show pericardial thickening - Chest x-ray may show enlarged calcified cardiac shadow.
Management	- Supportive therapy	- Supportive for cases of idiopathic and viral pericarditis - Specific antibiotics must include activity against S. Aureus and respiratory bacteria.
Other	Remember that Viral infection is the most common cause, reaches the heart through viremia. Coxsackievirus B is the most common viral cause of myocarditis, and that the symptoms are not specific for the heart except: chest pain, arrhythmia, and sweating.	**It reaches the heart by:** - Contiguous Spread - Traumatic or Irradiation - Lymphangitic Spread - Hematogenous Spread **Types of Pericarditis:** - Caseous Pericarditis ⟶ TB - Serous Pericarditis ⟶ viral infection or autoimmune disease - Fibrinous Pericarditis ⟶ myocardial infarction - Purulent/Suppurative pericarditis ⟶ bacterial infection - Hemorrhagic pericarditis ⟶ TB & malignancy Some patients develop cardiac tamponade and the therapeutic procedure is Pericardiocentesis