Myocarditis

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Etiology:-

- infections (viral, rickettsial, bacterial, protozoal, metazoal)
- autoimmune disease (eg. SLE, vasculitis)
- injury to heart including ischemia, trauma, genetic cardiomyopathies, toxins, drugs etc.

Pathophysiology:-

Viral phase → immunological response phase (innate and acquired immunity) releasing cytokines, metaloproteinases → heart remodeling (leading to heart failure)

Symptoms:-

- from asymptomatic to fatal heart failure (diffuse myocarditis) and sudden death
- non-specific symptoms = fatigue, dyspnea, palpitation, tachycardia, chest discomfort
- chest pain may resemble myocardial infarction (with increased muscle enzymes and regional wall motion abnormality)
- electrocardiogram = STTC changes
- cardiac arrhythmias and heart block

Dallas criteria for diagnosis of myocarditis:-

- *Category 1: Clinical symptoms*

  eg.clinical heart failure, fever, viral prodrome, fatigue, exertional dyspnea, chest pain, palpitation, syncope etc.

- *Category 2: cardiac damage without coronary ischemia*

  eg. echocardiographic, regional wall motion abnormalities, heart dilatation or hypertrophy, troponin release

- *Category 3: cardiac magnetic resonance imaging*
- *Category 4: myocardial biopsy*

  - pathology with Dallas criteria (=inflammatory infiltrate with myocyte necrosis or damage not due to ischemic events)
  - molecular detection techniques for viral genome

2 categories → suspicious for myocarditis

≥3 categories → compatible with myocarditis

Treatment:-

- supportive therapy
- immunosuppression eg. Steroid, azathioprine, cyclosporine
- interferon
- intravenous immunoglobulin
- immune adsorption therapy by plasmapheresis
- hemodynamic support eg. IABP, VAD