

Myocardial infarction(Pathology)

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- Acute myocardial infarction is the most important and feared consequence of coronary artery disease.

- Etiopathogenesis

- 1) Myocardial ischemia

myocardial ischemia is brought about by

- Diminished coronary blood flow
- Increased myocardial demand
- Hypertrophy of the heart without simultaneous increase in coronary blood flow
eg. hypertension, valvular heart disease

2. Role of platelets

Rupture of atherosclerotic plaque exposes the endothelial collagen to platelets



These events contribute to build up of platelet mass that may give rise to emboli or initiate thrombosis

3. Acute plaque rupture

4. Non atherosclerotic causes

coronary vasospasm, arteritis, embolism,
thrombotic disease

- **Types of infarcts**

1. According to anatomic region of the left ventricle involved they are called

-anterior

-posterior

-lateral

-septal

-circumferential

-combinations like

anterolateral, posterolateral, anteroseptal

2. According to the degree of thickness of the ventricular wall involved

-full thickness or transmural

-subendocardial or laminar (when they occupy inner subendocardial half of myocardium)

3. According to the age of infarcts

1. Newly formed infarcts called as acute , recent or fresh
2. Advanced infarcts called as old, healed or organized

- **DIAGNOSIS**
- **Clinical features**
- **ECG changes**
- **Serum cardiac markers**

- Clinical features

- ✓ Pain

- ✓ Indigestion

- ✓ Apprehension

- ✓ Shock

- ✓ Oliguria

- ✓ Low grade fever

- ✓ Acute pulmonary edema

- ECG changes

The ECG changes are one of the most important parameter

- ST segment elevation
- T wave inversion

- **Serum Cardiac markers**

Certain proteins and enzymes are released into the blood from necrotic heart muscle after acute MI

1. Creatine phosphokinase

CK-MM derived from skeletal muscle

CK-BB derived from brain and lungs

CK-MB derived from cardiac muscle

2.Lactic dehydrogenase (LDH)

3.Cardiac Specific triponins

- Cardiac triponin T

- Cardiac triponin I

4.Myoglobin

- **Complications**

- Arrhythmias
- Cardiogenic shock
- Mural thrombosis and thromboembolism
- Rupture
- Cardiac aneurysm
- Pericarditis
- Post myocardial infarction (1-6 wks after)