

# MYOCARDIAL INFRACTION



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## **INTRODUCTION:**

It refers to the process by which myocardial tissue or layer are permanently destroyed in heart due to an adequate supply of blood because of a reduced coronary blood flow leads to necrosis or death of myocardial layer.

## **ETIOLOGY/CAUSES:**

### **Modified:**

- Atherosclerosis
- Thrombus or embolus
- Vasospasm
- Anemia, hemorrhage
- High blood lipid level
- Smoking, alcohol consumption
- Hypertension
- Diabetes mellitus
- Physical inactivity, obesity
- Emotional stress
- Lack of estrogen in women
- Increase in homocysteine and C-reactive protein
- Any cardiovascular disorders

## **Non-modified:**

- Family history
- Age
- Gender
- Autoimmune disease

## **PATHOPHYSIOLOGY:**

- Due to coronary atherosclerosis, coronary thrombosis or embolism, it occurs.
- Excess intake of fatty meal or unhealthy diet or maintaining a unhealthy life style, cholesterol and fat level increases in body.
- Then accumulation of cholesterol, fats, and other substances occurs in body, that leads to plaque formation inside the inner wall of arteries.
- This can leads to a narrowing of the arteries and reduced blood flow to vital organs and tissues.
- Over time, the plaque can become unstable and rupture, leading to the formation of blood clots that can completely block the coronary artery.
- Coronary artery supplies blood to myocardial layer of the heart.
- Due to blockage in coronary artery, Myocardial blood supply from coronary artery decreases and it increases myocardial oxygen demand.
- Long term deficiency of blood causes myocardial ischemia, then it leads to myocardial hypoxia.
- When myocardium layer doesn't get sufficient amount of oxygen from blood, it causes myocardial cell necrosis/death or myocardial dysfunction, that leads to myocardial infraction.

## **CLINICAL MANIFESTATION/SIGN & SYMPTOMS:**

- Chest pain (last long for 30mins)
- Anxious & restlessness
- Diaphoresis, cool, clammy, moist skin
- Faster heart rate & respiratory rate
- Decreased cardiac contractility
- Dyspnea, palpitations, extreme fatigue
- Chocking sensation
- Nausea & vomiting
- Epigastric or abdominal distress
- Fever
- Decrease urine output
- Disorientation, faint, confusion

## **COMPLICATIONS:**

- Heart failure
- Pulmonary edema
- Ventricular rupture
- Mitral valve insufficiency

## **CLINICAL EVALUATION/DIAGNOSIS:**

- Family history, Medical history
- Physical examination
- ECG
- Stress test
- Echocardiogram

- Chest x-ray
- Coronary angiography
- MRI
- CT scan
- Blood test (troponin, myoglobin, c-reactive protein, homocysteine)

### **PHARMACOLOGICAL MANAGEMENT:**

- Oxygen therapy- 3lit. by nasal cannula
- Vasodilator therapy- nitroglycerin
- ACE inhibitors- captopril
- Anticoagulant- heparin
- Cholesterol lowering agent- statins
- Analgesics- morphine
- Thrombolytic therapy- urokinase, streptokinase

### **NON PHARMACOLOGICAL MANAGEMENT/PREVENTION:**

- Avoid smoking, consuming alcohol & tobacco
- Avoid fatty meal & junk food
- Take nutritional diet everyday
- Daily 30min morning walk
- Daily normal physical work out
- Avoid stress
- Proper or routine health check up

### **SURGICAL MANAGERMENTS:**

- Coronary artery bypass surgery

- Coronary stent
- Atherectomy
- PTCA (Percutaneous transluminal coronary angioplasty)



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