

Cardiovascular Disorder

1-cardiac Tamponed

2- Angina

3- Myocardial Infraction

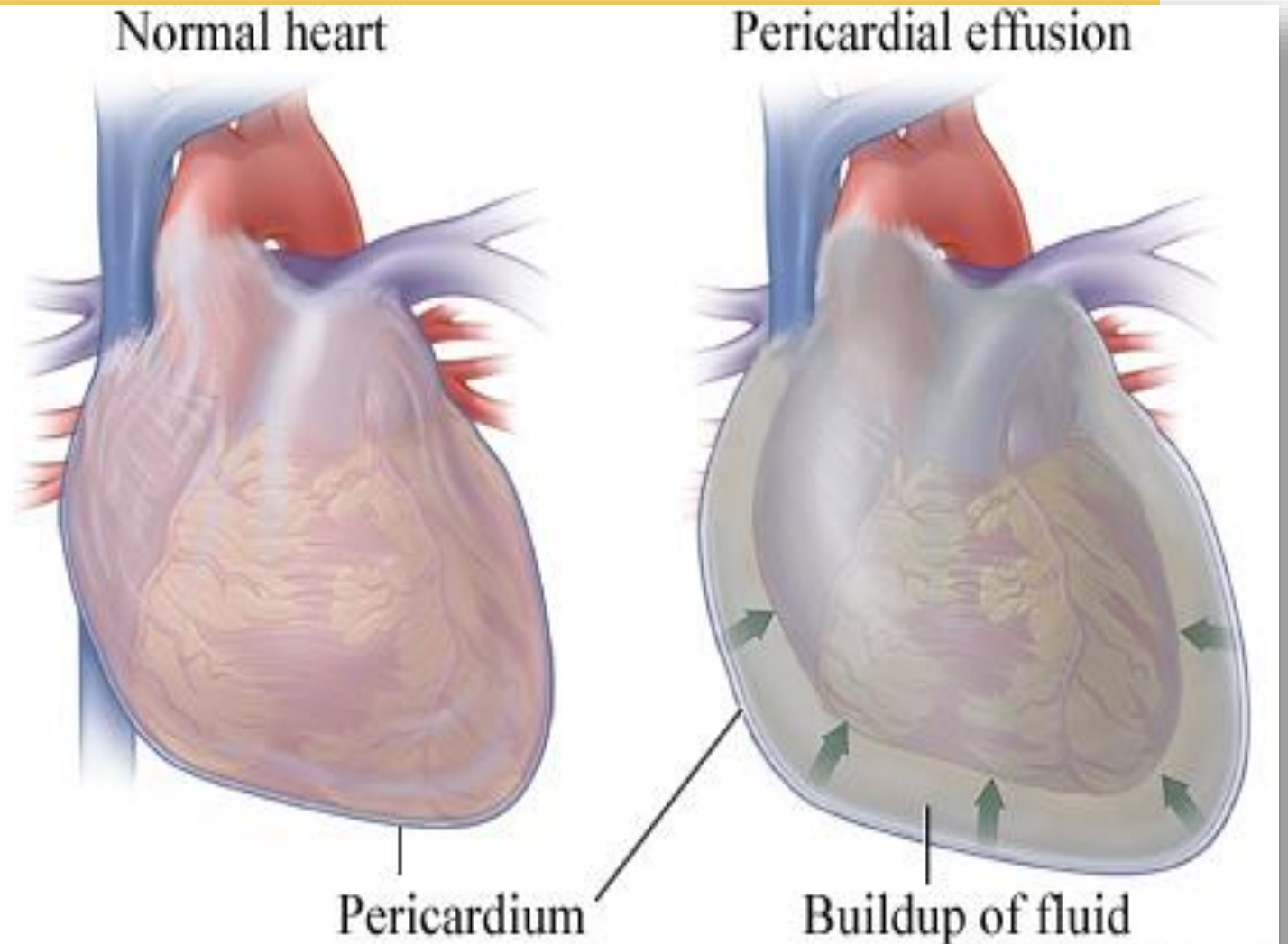
by

Prof. : Zainab Hussien



1-Cardiac Tamponade

- Life threatening complication caused by pressure on the heart that occurs when blood or fluid builds up in the space between the heart muscle and the outer covering sac (pericardium) of the heart



Signs and symptoms:

- Elevated venous pressure.
- Distended neck vein.
- Hypotension.
- Tachycardia.
- Narrow pulse pressure.
- Dyspnea.
- Cyanotic skin.
- Restlessness and anxiety.
- Muffled heart sound.
- Diaphoresis

Causes of Pericardial Tamponade

- **Malignancy**
- **Infection** - Viral, bacterial (tuberculosis), fungal
- **Drugs** - Hydralazine, procainamide, isoniazid, minoxidil
- **Post coronary intervention** (i.e., coronary dissection and perforation)
- **Trauma**
- **Cardiovascular surgery** (postoperative pericarditis)
- **Post myocardial infarction** (free wall ventricular rupture, Dressler syndrome)
- **Connective tissue diseases** - Systemic lupus erythematosus, rheumatoid
- Arthritis, dermatomyositis
- **Iatrogenic** - After sternal biopsy, transvenous pacemaker lead implantation, pericardiocentesis, or central line insertion.

Medical management:

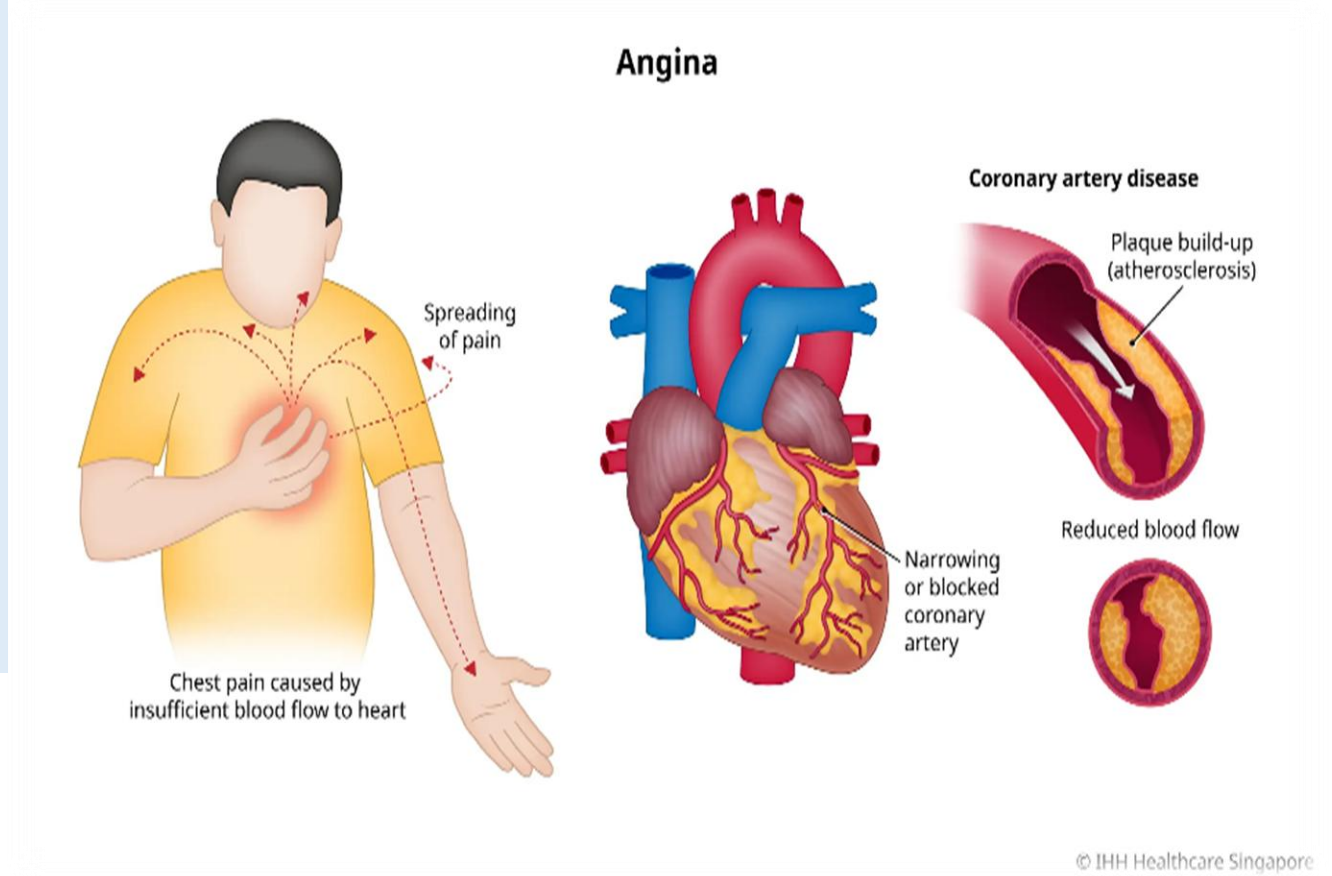
- **Inotropic drugs**, such as dobutamine: to improve heart function and lower blood pressure.
- **Pericardiocentesis**: the removal of fluid from the pericardium using a needle.
- **Pericardiectomy**: The surgical removal of part of the pericardium to relieve pressure on the heart.

Nursing role:

- Close monitoring for postoperative patient for early detection, monitoring coagulation factors.
- Monitoring coagulation factors before pacemaker wire removal.
- Close monitoring, echocardiogram post pacemaker wire removal for early detection.
- Monitor strictly vital signs, pulse pressure.
- **Semi-fowler position.**
- Give oxygen as indicated
- Monitor urine output hourly.
- Continuously monitor ECG for arrhythmia formation.
- Monitor the bp every 5 to 15 minutes during the acute phase.
- Initiate two large-bore cannula or CVC for fluid administration to maintain filling pressure.

2-Angina pectoris

- An idiopathic or **prolonged episode of chest pain** raising suspicion of acute myocardial infarction (AMI).



Symptoms

- Chest pain.
- Acute confusion.
- Pallor.
- Asymptomatic/silent.
- Hypotension or hypertension.
- Sweaty.
- Vomiting.
- Syncope.
- Indigestion.
- Tachycardia or bradycardia.
- Palpitations
- Dyspnea.
- Fever.

Risk Factors:

- **Modifiable :can be controlled or changed**

- Smoking.
- Obesity. - Diet
- Lack of exercise.
- High serum cholesterol.
- Hypertension.

- **Non-modifiable**

- Increasing age.
- Gender (male).
- Family history.
- Diabetes.

Medical management:

- **Short term management:**

- Heparin 1mg/kg BD or arixtra 2.5mg OD.
- Plavix 300mg loading dose.
- Beta blocker - atenolol 5mg.
- Nitrates – usually iv.
- Consider coronary angiography within 72 hr.

- **Long term management:**

- Continuous ECG monitoring as inpatient/ CCU.
- Aspirin 75mg od (lifelong).
- Plavix 75mg (1 year).
- Beta blocker (inderal) for (1 year - lifelong).
- **ACE Inhibitor** (capoten).
- Statin (ator, lipitor, crestor).
- Modification of risk factors.

Nursing role:

- Control and prevention of pain by:
 - Uses moderation in all activities of life.
 - Avoid exercises requiring sudden bursts of activity.
 - Avoid activities that require heavy effort.
 - Alternates activities with periods of rest.
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Reduction of anxiety.

- Understanding of illness & ways to avoid complications.
- Adherence to the self-care program.
- Avoid situations that are emotionally stressful.
- Maintain proper weight.
- Avoid excessive caffeine intake which can increase the heart rate& produce angina.
- Stop smoking, as smoking increase the heart rate, blood pressure& blood carbon monoxide levels.
- Avoid cold weather if possible.
- Walk more slowly in cold weather

Patient copes with an attack of angina pain:

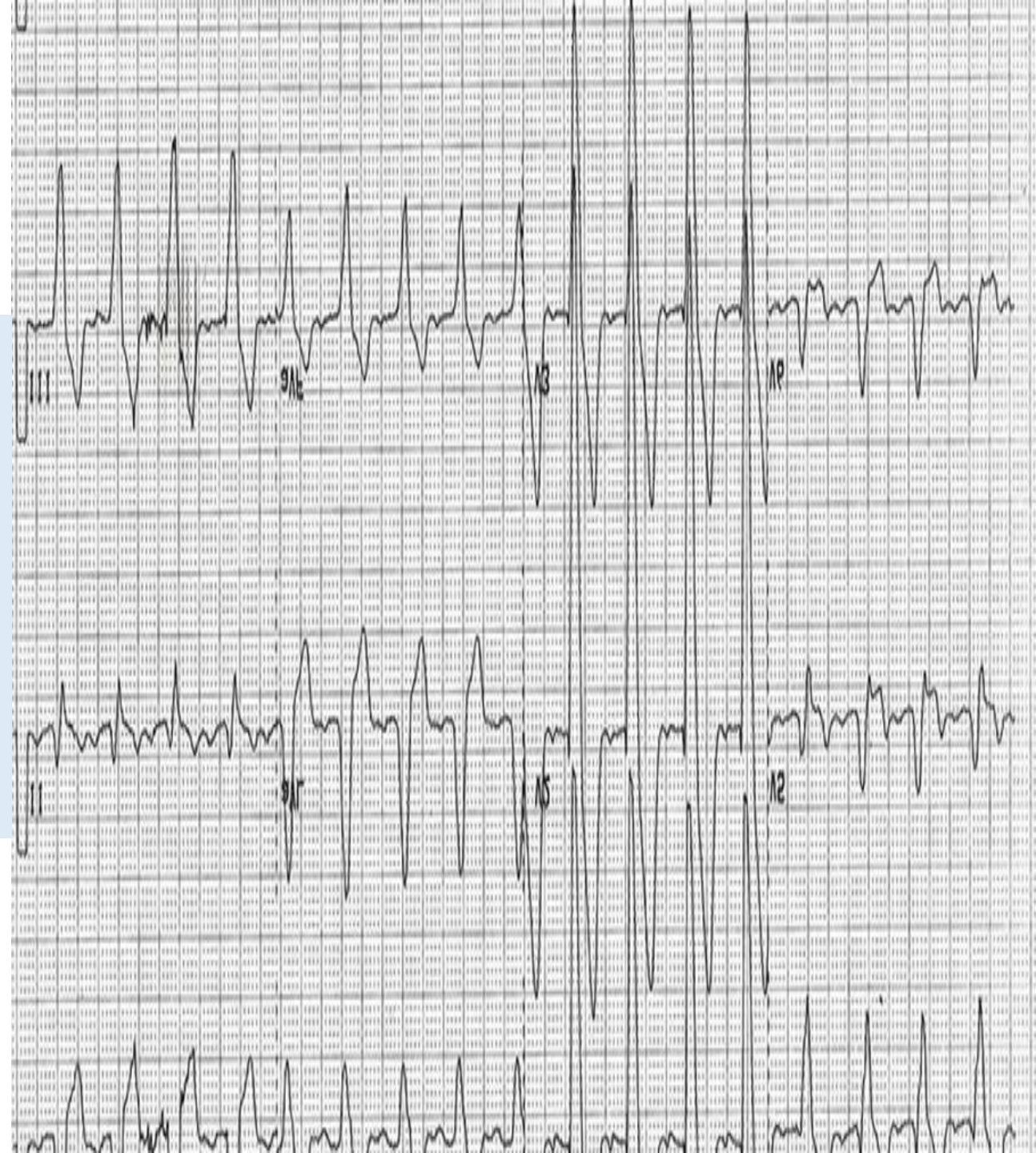
- Carries nitroglycerin at all times.
- Places nitroglycerin under the tongue (sublingually) at first sign chest discomfort. It relieves pain within 3 minutes.
- Doesn't swallow saliva until the tablet has dissolved.
- Stops activities and be in rest until all pain subsides.
- Keep the upright position to potential the effect of nitroglycerin.
- Usually another nitroglycerin tablet may be taken in 3-5 minutes if pain persists.
- If the anginal discomfort is unrelieved or if it reoccurs after short interval, the patient must go to the nearest emergency facility.
- Takes nitroglycerin prophylactically to avoid pain known to occur with certain activities (stairclimbing- sexual intercourse).
- Be alert for the side effects of nitroglycerin, headache, flushing& dizziness.
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Scenario

- Mr. A is a 48-year-old is admitted to the emergency department with a diagnosis of **heart failure**. He was discharged from hospital from 15 days ago, come to hospital today stating “I just had come to hospital today because **I can't catch my breath and my legs are as big as tree trunks.**” After further questioning, you learn he is strictly following the **fluid and salt restriction** ordered during her last hospital admission. He reports gaining 1 to 2 pounds every day since his discharge.
- Vital signs
- Blood pressure: 150\87 mmHg
- Weight: 100 kg
- Height: 160cm

✓ respiratory rate: 50 C\minute

- ✓ temperature: 37.2c
- ✓ heart rate: 110 b\minute
- Laboratory tests
- ✓ CBC: WBC 6,200\mm3, hemoglobin 12\dl hematocrit 37% platelet count 290\mm3
- ✓ Cardiac enzymes: troponin 28ng/l.
- Chest x-ray: normal
- Echocardiogram: Ejection fraction (EF): 24%.
- ECG



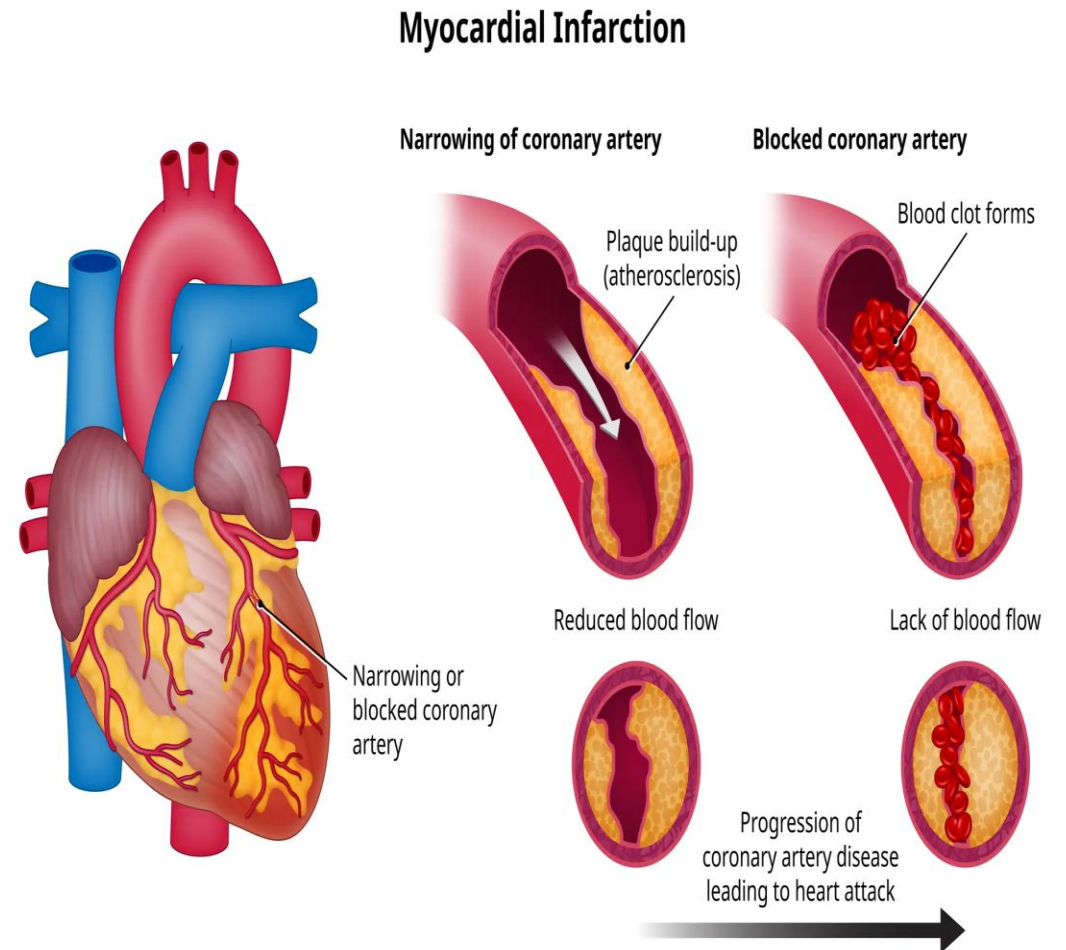
Assessmen

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- **Central nervous system:**
 - Patient conscious level.
 - Patient ability of communication.
- **Cardiovascular system:**
 - Blood pressure.
 - Jugular vein distended or no.
 - Heart rat rhythm.
 - Perfusion of extremities.
 - Body weight and edema.
 - Chest pain.
- **Respiratory system:**
 - Patient oxygen saturation.
 - Arterial blood gases.
 - Assess for lung sound.
 - Assess for respiratory rate.
 - Put patient on oxygen supply.
 - Fatigue.
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- **Gastrointestinal Tract system :**
 - Abdominal sound and movement.
- Ability of feeding
- **Renal:**
 - Patient urine output.
 - Kidney function.
 - Electrolytes imbalance

3. Myocardial Infarction (MI).

- Commonly known as **heart attack**, is the irreversible necrosis of heart muscle secondary to prolonged ischemia. This usually results from an imbalance in oxygen supply and demand, which is most often caused by plaque rupture with thrombus formation in a coronary vessel, resulting in an acute reduction of blood supply to a portion of the myocardi



Signs and Symptoms:

Chest pain (heavy –sever). •

Radiating chest pain shoulder, arm, back, or even to jaw. •

Palpitations and sweating. •

Increase heart rate and blood pressure. •

Nausea and vomiting. •

Anxiety •

Loss of consciousness due to inadequate blood flow to the brain and •
cardiogenic shock, and sudden death

Causes:

- Smoking.
- Abnormal lipid profile.
- Hypertension.
- Diabetes mellitus.
- Abdominal obesity.
- Psychosocial factors such as depression, loss of the locus of control, global stress, financial stress, and life events including marital separation, job loss, and family conflicts.
- Lack of daily consumption of fruits or vegetables.
- Lack of physical activity.
- Alcohol consumption (weaker association, protective).

Medical management: MONA

- **Morphine or Pethidine** used as analgesia (best drug for ischemic chest pain that refractory to nitroglycerin).
- **Oxygen** by nasal or face mask if O2 saturation <90%.
- **Nitroglycerin sublingually** can be repeated /5 minutes for a 3 times to relieve chest pain, dilatation of coronary arteries (O2 supply).
- **Aspirin** 160 to 320 mg chewable tablet (enhances absorption), and then maintenance dose is 81 mg PO daily if no allergy.
- **Beta blockers** cause the heart to beat more slowly and with less force (this lowers blood pressure).
- **Thrombolytic therapy: is** the use of drugs to break up or dissolve blood clots (the main cause of both heart attacks and stroke)

Nursing role:

- Monitor and document characteristics of pain, noting verbal reports, and nonverbal cues (moaning, crying, grimacing, restlessness, diaphoresis, and clutching of the chest).
- Monitor the client's vital signs closely.
- Monitor respirations and note the work of breathing.
- Managing pain and ischemia.
- Monitoring for potential complications.
- Promoting adequate tissue perfusion
- Reducing anxiety.