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ANGINA PECTORIS

DEFINITION

Angina pectoris is a chest pain caused by reduced blood flow to the heart
It is a symptom of coronary artery disease

Risk Factors

- Age
- Sex
- Alcohol
- Dyslipidemia
- Diabetes mellitus
- Renal disease
- Family history

EPIDEMIOLOGY

- About 112 million are affected with the disease
- Men is more commonly affected than women

Types of Angina

- Stable angina
- Unstable angina
- Prinzmetal's angina

Stable angina

- 50% occlusion
- Fibrous cap
- Formation of plaque
- Ischaemia to myocardium
- Oxygen demand is increased
- Chest pain at exercise, emotional stress,
- Usually lasts for less than 10 mins
- Leads to ischemia

Unstable angina

- Lasts for More than 10 mins
- Occurs at rest
- New onset of chest pain
- 70% occlusion

- Fibrous cap breaks
- Platelet aggregation
- Formation of thrombus
- Leads to ischemia

Prinzmetal's angina

- Common in females
- Chest pain at night
- Due to vasoconstrictive medications, alcohol
- Leads to ischemia and necrosis

ETIOLOGY

Vasculitis

- Inflammation of blood vessel
- Agitation of vessels
- Rupture of walls
- Aggregation of platelets
- Leads to formation of thrombus

Thrombosis

- Thrombus from vein moves with the blood to the heart
- Causes ischemia
- This is due to atrial septal defect

Atrial fibrillation

- Due to irregular beat, contraction of atrium is not proper
- Leads to formation of clot in the atrium and there is no proper blood flow to ventricular myocardium

Left ventricular thrombosis

Because of thrombus formai in left ventricle, there is no proper blood flow to the myocardial muscle

Due to left ventricular hypertrophy. Hypertrophied myocardial cells not get sufficient blood which leads to ischemia.

Myocarditis

Inflammation of myocardium is called myocarditis

Due to inflammation the blood vessels in the myocardium get damaged , not able to supply needed blood to the myocardial cells which leads to ischemia.

Tachycardia

Tachycardia increases systolic period and decrease diastolic period.

Due to decreased diastolic period, there is no proper filling, this reduce blood flow to the myocardial muscle.

Hypotension

- Hypotension cause reduced blood flow
- Decrease blood volume
- Decreased blood volume causes decreased supply of blood to the myocardial muscle

Dilated cardiomyopathy

- Compress blood vessel in myocardium

- Decrease blood supply
- Leads to ischemia

PATHOGENESIS

Left ventricular infarction

- Causes papillary muscle dysfunction
- Flappy of Mitral valve
- Leads to Mitral valve regurgitation

Left ventricular hypertrophy

- Ventricle are fibrotic
- Ventricles are thickened
- Improper contraction of ventricle
- S4 sound

Impaired conduction system

- Infarction on left side of left ventricle causes impaired conduction system
- This leads to impaired systole and diastole of ventricles

DIAGNOSIS

- Retrosternal or left-sided, radiating to the left arm, neck, jaw, or back.
- Coronary angiogram

TREATMENT

Anti anginal drugs:

Nitrates

- Nitroglycerine
- Isosorbide dinitrate
- Isosorbide trinitrate

Beta blockers

- Propranolol
- Metoprolol
- Atenolol

Calcium channel blockers

- Verapamil
- Diltiazem
- Amlodipine
- Nifedipine.

