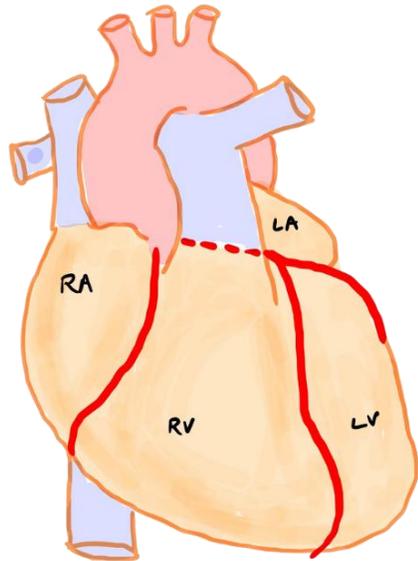




ISCHEMIC HEART DISEASE

GENERAL CONCEPTS





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DISEASES OF HEART

ISCHEMIC HEART DISEASE

Part - 1

Overview

- Definition
- Epidemiology
- Risk factors
- Pathogenesis
- Clinical manifestations

ISCHEMIC HEART DISEASE (IHD)

Group of related entities resulting from **Myocardial ischemia**

Imbalance between myocardial supply (perfusion) and cardiac demand for oxygenated Blood.

EPIDEMIOLOGY OF ISCHEMIC HEART DISEASE

Single largest cause of mortality worldwide

12% of global deaths

Men are affected more commonly than women

Usually manifest in ages above 50 years

Prevalence increases with age

RISK FACTORS OF ISCHEMIC HEART DISEASE

Traditional risk factors

Non modifiable

*Male sex
Increasing age
Family history of
premature IHD*

Modifiable

*Cigarette smoking
Hypertension
Diabetes mellitus
Hypercholesterolemia*

Emerging risk factors

Metabolic

*Obesity
Overweight or
elevated BMI
Inactivity etc..*

Dietary

*Meat and
poultry
consumption
Saturated fat
intake (animal
fat and butter)
High sugar
intake etc...*

RISK FACTORS OF ISCHEMIC HEART DISEASE

Emerging risk factors

Emerging associations

Inflammatory conditions such as psoriasis

Chronic kidney disease HIV/AIDS

Nonalcoholic fatty liver disease

Screen time (television, smartphones)

Urban residence

Psychosocial and work stress

Sleep deprivation

Prolonged sitting

https://link.springer.com/chapter/10.1007/978-3-031-25879-4_6

Causes of myocardial ischemia

Obstructive atherosclerotic lesions in the epicardial coronary arteries

>90% of cases

Can begin during
childhood or adolescence

CORONARY ARTERY DISEASE

IHD is the late manifestation

Causes of myocardial ischemia

Other causes

Coronary emboli

Myocardial vessel inflammation

Vascular spasm

PATHOGENESIS OF ISCHEMIC HEART DISEASE

Insufficient coronary perfusion relative to myocardial demand

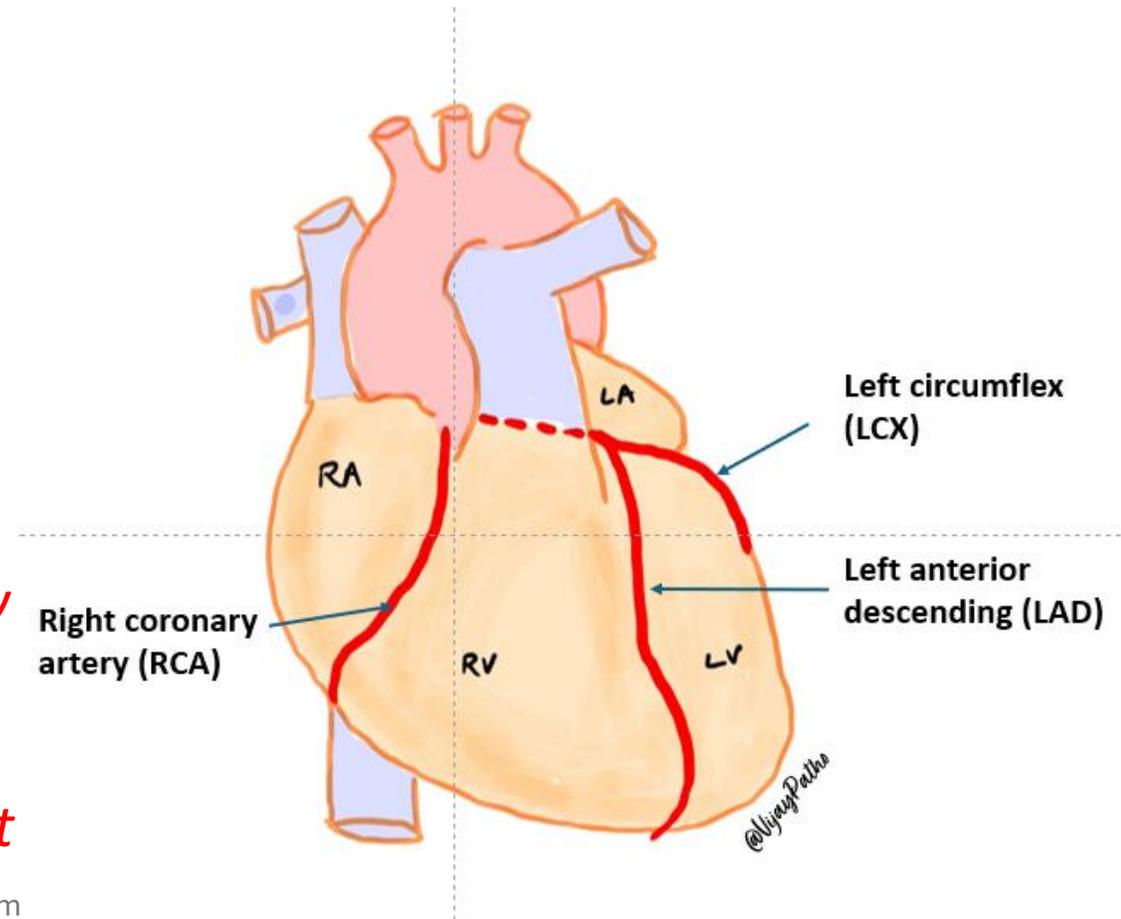
Chronic

Progressive atherosclerotic narrowing of the epicardial coronary arteries

Critical stenosis : Obstruction >70% of vascular cross-sectional area *Ischemia precipitated by exercise*

Obstruction >90% of vascular cross-sectional area

Ischemia even at rest!



PATHOGENESIS OF ISCHEMIC HEART DISEASE

Insufficient coronary perfusion relative to myocardial demand

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Obstruction >90% of vascular cross-sectional area *Ischemia even at rest!*

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Acute

Sudden plaque changes

Rupture, fissure, ulcer, hemorrhage

Unstable angina, acute MI, and sudden death

Consequences of myocardial ischemia

Limits tissue oxygenation

Reduced ATP generation

Reduces the availability of nutrients

Reduces the removal of metabolic wastes

Clinical manifestations/ consequences of Myocardial ischemia

Angina pectoris

Myocardial infarction (MI),

Sudden cardiac death (SCD)

Chronic IHD

Ischemia is not severe enough to cause infarction

Acute plaque change



Abrupt occlusion



Causes frank cardiac necrosis

*Caused by regional myocardial ischemia that induces a **fatal ventricular arrhythmia***

With heart failure

Can be risk for infarction

Stable/unstable

Acute plaque change

Summary

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