

HYPERTENSION

Introduction:

- ✓ Hypertension is a state of elevated blood pressure.
- ✓ Blood pressure (BP) is the pressure exerted on the walls of arteries.
- ✓ Systolic BP is the blood pressure during systole (myocardium contraction)
- ✓ Diastolic BP is the blood pressure during diastole (myocardium relaxation)
- ✓ Normal arterial blood pressure - 120/80 (Systolic BP); 80-90 (for Diastolic)
- ✓ 50, Hypertension = Blood Pressure > 140/90

Factors affecting Blood Pressure:

1. Cardiac output (CO)
 - When CO \uparrow \rightarrow Systolic BP \uparrow
 - When CO \downarrow \rightarrow Systolic BP \downarrow
2. Blood Volume (BV)
 - When BV \uparrow \rightarrow Systolic BP \uparrow
 - (Ex. In case of renal impairment: salt & water retention \rightarrow \uparrow BV \rightarrow \uparrow BP \leftarrow \uparrow CO \leftarrow \uparrow Venous return)
3. Peripheral vascular resistance
 - When blood vessel are constricted \rightarrow \uparrow peripheral resistance \rightarrow \uparrow BP
 - When blood vessel are dilated \rightarrow \downarrow peripheral resistance \rightarrow \downarrow BP

Types of Hypertension:

According to blood pressure

Classification	Systolic	Diastolic
Mild Hypertension	140-159	90-99
Moderate Hypertension	160-179	100-109
Severe Hypertension	180-209	110-119
Very severe	≥ 210	≥ 120

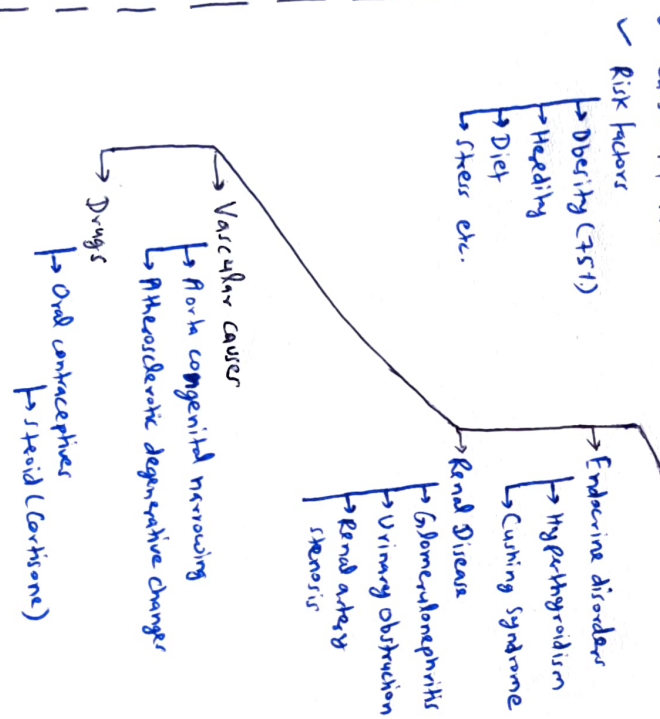
According to Etiology

Primary (Essential Hypertension)

- ✓ 90% of Hypertensive cases
- ✓ Cause not known
- ✓ Risk factors
 - \rightarrow Obesity (TST)
 - \rightarrow Heredity
 - \rightarrow Diet
 - \rightarrow Stress etc.

Secondary Hypertension

- ✓ Occurs due to some disease/drugs.



Risk Factors of Hypertension:

- \rightarrow Age: Age \uparrow = Tendency of Hypertension \uparrow
- \rightarrow Gender:
 - \rightarrow Pre-menopause: Females are less susceptible to Hypertension than male
 - \rightarrow Post-menopause: Females are equal to males
- \rightarrow Pregnancy: Pre-eclampsia (is a pregnancy-related disorder) characterized by Hypertension + edema + Albuminuria
- \rightarrow Diabetes: Long term diabetes \rightarrow Vascular degenerative changes \rightarrow Hypertension
- \rightarrow Alcohol consumption \rightarrow Release Chatecholamines from adrenal medulla \rightarrow Hypertension
- \rightarrow Smoking
- \rightarrow Stressful life style
- \rightarrow High salt intake in diet
- \rightarrow Genetic: Hypertension is 4-5 times more in black people than white

Theory of Hypertension:

Non-Pharmacological

- \rightarrow Weight reduction
- \rightarrow Salt restriction
- \rightarrow Reduction in alcohol
- \rightarrow Stop smoking
- \rightarrow Exercise
- \rightarrow Avoid stress

Pharmacological

- \rightarrow Sympatholytic
- \rightarrow Centrally acting
- \rightarrow Ganglionic blockers
- \rightarrow α blockers
- \rightarrow β blockers
- \rightarrow Vasodilators
- \rightarrow A-vascular blockers
- \rightarrow Mixed vasodilators
- \rightarrow Drugs acting on RAAS
- \rightarrow ACE inhibitors
- \rightarrow AT₁ receptor antagonists
- \rightarrow Diuretics