



## SNS COLLEGE OF PHARMACY AND HEALTH SCIENCES

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### HYPERTENSION

#### DEFINITION

- Hypertension is a condition in which the flow of blood against the artery wall is too high.
- It is characterised by persistently elevated blood pressure.
- Normal blood pressure: 120/80 mmHg
- Hypertension: 140/90 mmHg
- Severe Hypertension: 180/120 mmHg

#### Types:

- Pre- hypertension: 120-129/80 mmHg
- Primary Hypertension: 130-239/80-89 mmHg
- Secondary Hypertension: greater than 140/90mmHg

#### EPIDEMIOLOGY:

- About 1 billion people or 22% population are affected with the disease world wide
- Most common in men than women

Common in age

#### ETIOLOGY

- It act by increasing sympathetic nervous system
- It increase adrenaline (or) epinephrine activity
- By increasing epinephrine it increase blood pressure

#### Primary Hypertension

##### Blood vessel

- By activating SNS; it causes vasoconstriction.
- Vasoconstriction cause increased peripheral resistance.
- Increased peripheral resistance leads to increased Blood pressure

##### On SA node:

- Increase heart rate
- Increase Cardiac output
- Increase blood pressure

##### On ventricular myocardium:

- Increase contractility
- Increase stroke volume
- Increase Cardiac output

- Increase blood pressure

**By Sympathetic nervous system:**

- It increase Renin synthesis from juxta glomerular cells.
- By increasing Renin it increases angiotensin II enzyme.
- This Ang-II will markedly increase blood pressure

**On kidneys:**

- Increase sodium retention
- Increase blood volume
- Increase blood pressure

**Secondary Hypertension**

- Glomerulonephritis
- Diabetic nephropathy
- Polycystic kidney disease (PKD)
- Renal artery stenosis
- Renal vasculitis
- These increases peripheral resistance which leads to increased Blood pressure

**ADRENAL GLAND**

- Aldosterone
- Cortisol
- Epinephrine in adrenal gland increases blood pressure

**THYROID GLAND**

- Hypothyroidism
- Hyperthyroidism
- Hyperparathyroidism

**Blood vessel**

- Coarctation of the aorta
- Narrowing of aorta
- Increase peripheral resistance
- Increase blood pressure

**PATHOGENESIS**

- Vascular changes occur
- Hypertrophy
- Formation of plaque

**Pathological states**

- Hypertensive retinopathy
- Haemorrhage
- Yellow color accumulation in retina
- Left ventricular atrophy
- Ischaemic heart disease
- Myocardial infarction
- Arrhythmias
- Lacunar infarcts-Blockade of blood in the deep part of brain

- Intra cerebral bleed

### **DIAGNOSIS**

- Monitoring of blood pressure
- Urinalysis- Renal function
- ECG
- Estimation of plasma Renin
- Estimation of plasma Aldosterone

### **MANAGEMENT**

- Exercise
- Reduce salt intake
- Proper diet
- Limit alcohol and smoking

Use of Anti-hypertensive drugs such as

- Propranolol
- Atenolol
- Verapamil
- Diltiazem
- Captopril
- Enalapril
- Fosinopril