Hypertension

Classification of BP (ACC 2017)

	Systolic		Diastolic
Normal	< 120	&	< 80
Elevated BP	120 - 129	&	< 80
Stage 1 HTN	130 - 139	or	80 - 89
Stage 2 HTN	≥ 140	or	≥ 90

HTN

↓ 1° (essential) — 85%
- no specific underlying cause
- ⊕ family history
- Age: 25 - 50 years

↓ 2° — 15%
- specific ds.
- Age > 50
- Resistant to max doses of 3 meds.

Essential HTN (1°) -

→ Risk factors: genetics
→ environmental: salt intake
obesity → leptin
occupation
alcohol intake
family size
overcrowding
→ Impaired sodium excretion
→ Sthero.
→ Humoral mechanism: ANS
RAAS

Etiology of 2° HTN:-

1) Renal parenchymal ds (MIC)
→ acute glomerulonephritis
→ PCKD
→ Chronic nephritis
→ Diabetic nephropathy
→ Hydronephrosis
→ Renal Artery Stenosis
→ Renin producing tumors

2) Endocrine:-
Adrenal: Cushings, 1° aldosteronism
1° adrenal hyperplasia
→ Hypothyroidism (diastolic)
→ Hyperthyroidism (systolic)
→ Hypercalcemia
→ Neurogenic
→ carcinoid

3) Cardiovascular:-
Coarctation of aorta
PAN

4) Neurologic:
Psychogenic
Porphyria
Pb poisoning
Riley day syndrome (1° dysautonomia)
GB syndrome
⊕ ICP

5) Obstructive sleep apnea

6) Preclampsia / Eclampsia

7) Meds: High dose estrogens
Adrenals
Steroids
Decongestant
Amphetamines
TCA
NSAIDS
Cocaine
Alcohol

Ambulatory BP Monitoring (ABPM):-

Preferred method for confirming diagnosis of HTN

Clinical features :-

1) Majority - anymptomatic
2) Acute HTN → transient headache polyuria

3) Long standing HTN →
   → LVH
   → heaving apical impulse
   → accentuation of A_2
   → S_4
   → short early diastolic murmur
   → fundal Δs.

Complications of HTN :-

1) CNS - TIA
   CVA or stroke
   SAH
   Hypertensive encephalopathy

2) Opthalmic : Hypertensive retinopathy

3) CVS - CAD
   LVF & pulmonary edema
   Atrial fibrillation (AF)

4) Blood vessels :- Atherosclerosis
   Aneurysm of aorta
   Aortic dissection

5) Renal - proteinuria
   hematuria

Investigations :-

① Urine analysis
② Blood : urea & creatinine : RFT
③ Serum electrolytes : for hypokalemia
④ Fasting & postprandial blood glucose
⑤ Lipid profile - Serum total cholesterol & HDL
• ECG : 12-lead ECG for LVH.

Treatment :-

Goal :- Standard target BP
SBP < 140 mm Hg
DBP < 85 mm Hg.

High Risk; DM, Renal impairment
Established CVD
Target : < 130/80

Non-pharmacological :

1) Weight management : Control obesity
Target BMI : 20-25 kg/m²

2) DIET : DASH
Salt : < 6g NaCl /day
↓ intake of fat & saturated fat
3) ↑ consumption of fruits & veg. (> 5 /day)
4) ↓ alcohol ≤ 3 units /day - men
≤ 2 unit /day - women
5) smoking - quit ✓
6) Aerobic exercise : > 30 min of brisk walking.

Short Reduction

Pharmacological :

Young subjects (< 55 years)
↓
Step 1: ACE-I (A) / ARBs

Older (> 55 yrs)
↓
(C) Calcium channel blocker
(D) Thiazide type diuretic

Step 2 → A+C or A+D

Step 3 → A+C+D

Step 4: Resistant HTN (A+C+D + further diuretic or alpha or Beta blocker)

Hypertensive Encephalopathy

SBP: >180 - 220 mmHg

DBP: > 120 - 130 mmHg

MAP: > 180 mmHg

↑ cerebral blood flow

↓

hyperfiltration

↓

local or diffuse cerebral edema

↓

cerebral ischemia

C/F: Severe headache

Vomiting

Visual disturbance

Confusion

Focal or generalized seizures

Papilledema