

the concept	the notes
The optimal blood pressure	<120/80
Hyper tension	>=(140/90)
Mechanisms Controlling CO and TPR	<ul style="list-style-type: none"> • . Neural(fast way) • Local Factors(fast way) • Hormonal(slow way)
Vasomotor center drugs	<ul style="list-style-type: none"> • Methyldopa (gestational hypertension) • Clonidine(withdrawl syndrome of the alcohol or smoking)
Sympathetic nerve terminals Drugs	<ul style="list-style-type: none"> • Reserpine
Sympathetic ganglia drugs	<ul style="list-style-type: none"> • Trimethaphan

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Monotherapy of hypertension	<ul style="list-style-type: none"> • compliance is better • better cost • less side effects
combination therapy	drugs, preferably acting by different mechanisms (polypharmacy).
Initial antihypertensive therapy	<ul style="list-style-type: none"> • JNC 6: Diuretic or a beta-blocker • JNC 7: Thiazide-type diuretics
Diuretics	<ul style="list-style-type: none"> • lowering blood pressure by 10–15 mm Hg • adequate treatment for mild or moderate essential hypertension. • In more severe hypertension, diuretics are used in combination with sympathoplegic and vasodilator drugs
Thiazide Diuretics	<ul style="list-style-type: none"> • Diuretics lower blood pressure primarily by depleting body sodium stores. • Initially, diuretics reduce blood pressure by <u>reducing blood volume</u> and <u>cardiac output</u>; peripheral vascular resistance may increase. • After 6–8 weeks, <u>cardiac output</u> returns <u>toward normal</u> while peripheral vascular resistance declines. • lower doses (25–50 mg) exert as much antihypertensive effect as do higher doses. • Hydrochlorothiazide, 1-2 times a day.
Thiazide Diuretics Mechanism of Action	<ul style="list-style-type: none"> • Increase : Urinary Na⁺ excretion & Urinary water excretion • Decrease : Extracellular Fluid and/or Plasma Volume

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nonselective b-adrenergic blocking agents	<ul style="list-style-type: none"> • <u>Propranolol</u>(arrhythmia) • <u>Timolol</u>(glaucoma) • Nadolol • <u>Pindolol</u>(sympathomimatic activity). • Penbutolol • <u>carvedilol</u>(alpha1,beta1&2).
selective b-adrenergic blocking agents	<ul style="list-style-type: none"> • Metoprolol(most widely used) • Acebutolol (sympathomimatic activity) • Atenolol(most widely used) • Esmolol (work fast end fast) • sotalol
Labetalol&Carvedilol	treating the hypertension of pheochromocytoma and hypertensive emergencies (Raynaud's phenomenon)
Esmolol	<ul style="list-style-type: none"> • short half-life (9–10 minutes) • constant intravenous infusion. • used for management of <u>intraoperative</u> and <u>postoperative</u> hypertension, • sometimes for hypertensive emergencies, particularly when hypertension is associated with tachycardia. (Work fast end fast)
The withdrawal of b-adrenergic blocking agents	<ul style="list-style-type: none"> • may cause rebound hypertension, • gradual to avoid precipitation of arrhythmia • The withdrawal syndrome may involve up-regulation or supersensitivity of beta receptor adrenoceptors.
Spironolactone and eplerenone	<ul style="list-style-type: none"> • potassium sparing diuretics that • cause diuresis without causing potassium loss in the urine (<u>Never give with arbs</u>).

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ACE Inhibitors Side effects	<ul style="list-style-type: none">• Dry cough• Potassium level increases• Angioedema
ACE Inhibitors Contraindicated in :	<ol style="list-style-type: none">1.pregnancy (also arbs and thiazide)2.with arbs (same mechanism)3.bilateral renal stenosis
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