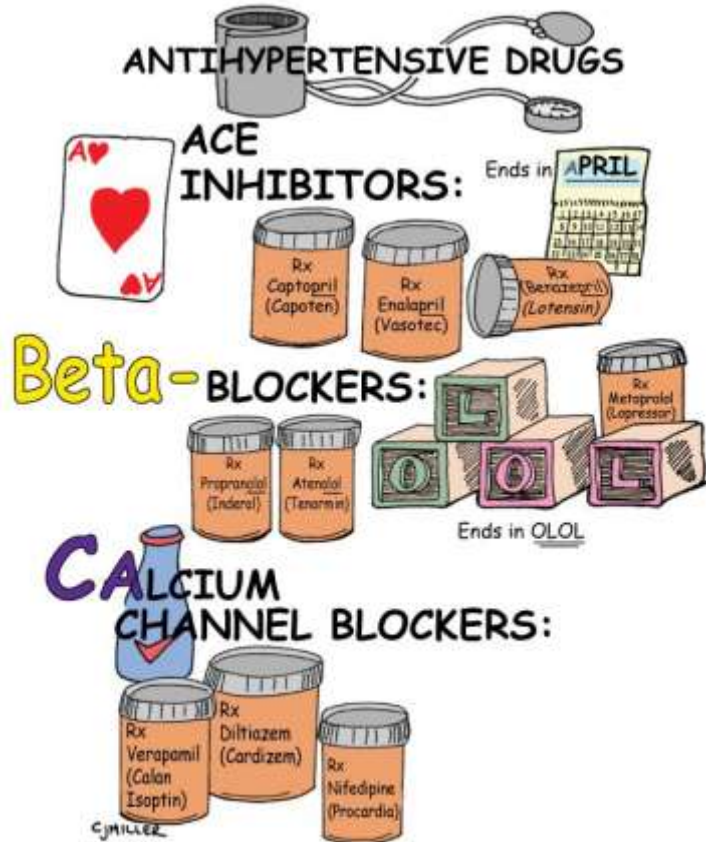


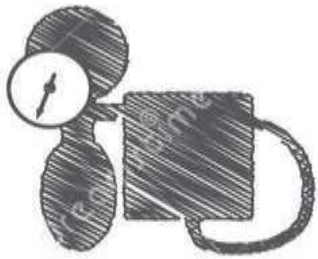
Anti hypertensive Drugs



By; Dr Shaikh Fahad falah

Objectives

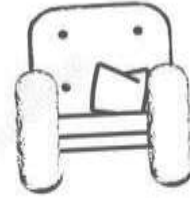
- At the end of session
- You should know the mechanism of action of anti hypertensive drugs.



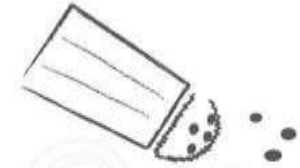
DIAGNOSIS



OVERWEIGHT

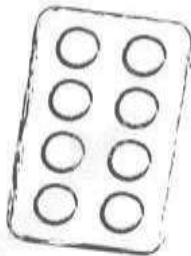


SEDENTARY



SALT CONSUMPTION

HYPERTENSION



BETA BLOCKER



EXERCISE



NUTRITION



ALCOHOL



Download from
Dreamstime.com

This watermarked comp image is for previewing purposes only.

ID 91868335

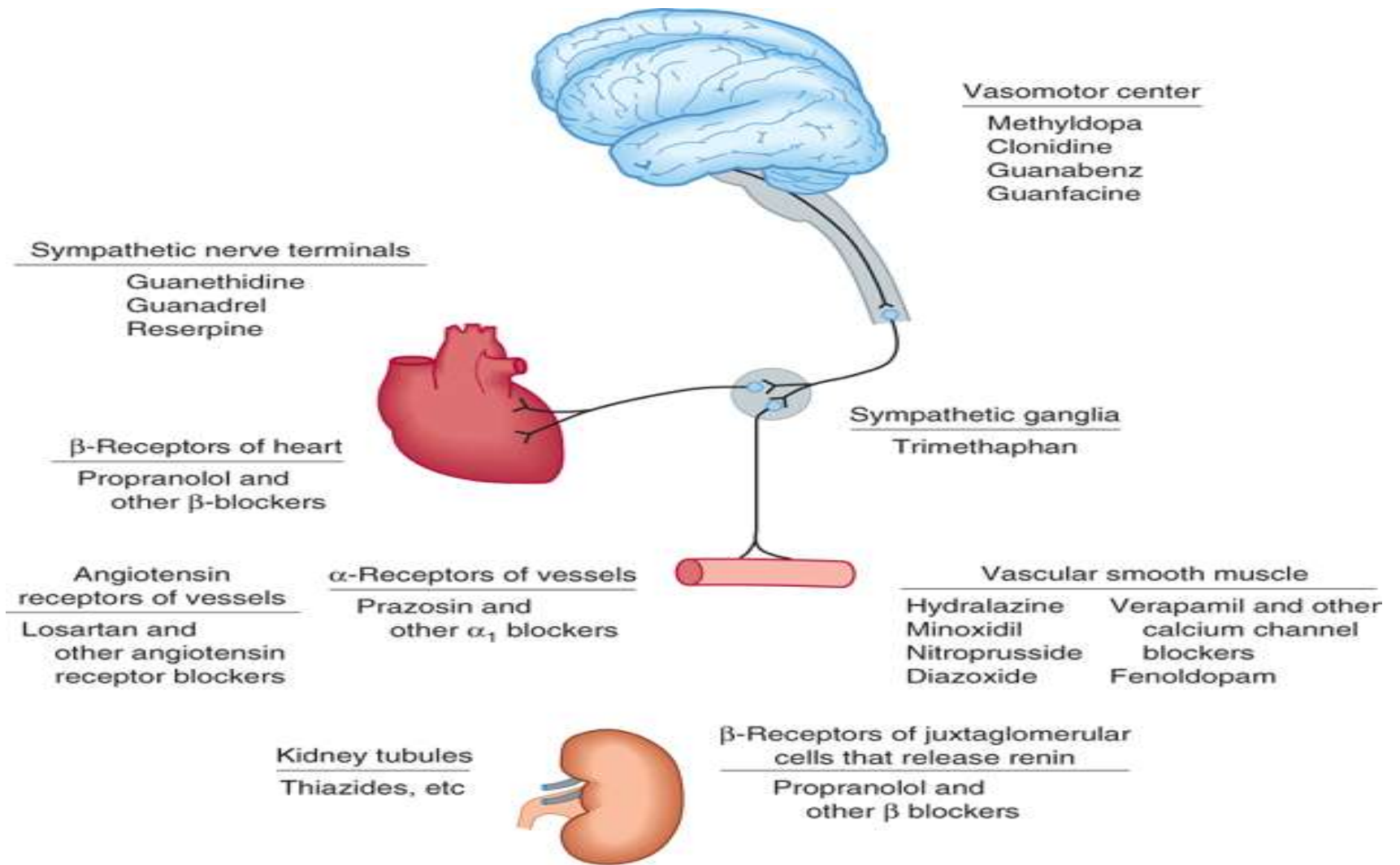
© Trueffelpix | Dreamstime.com

- hypertension, a chronic disease characterized by elevation of blood pressure
- classified by cause as either essential (also known as primary or idiopathic) or secondary
- overconsumption of sodium and underconsumption of potassium

- Secondary hypertension indicates that the hypertension is a result of a specific underlying condition with a well-known mechanism, such as chronic kidney disease, narrowing of the aorta or kidney arteries, or endocrine disorders such as excess aldosterone, cortisol, or catecholamines

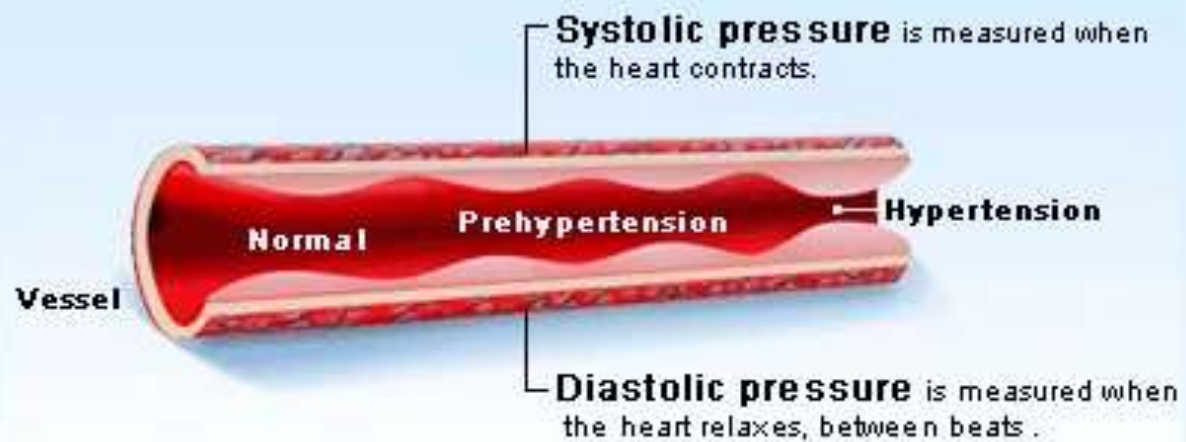
- Cardiac output and peripheral resistance are the two determinants of arterial pressure.
- Cardiac output is determined by stroke volume and heart rate
- Stroke volume is related to myocardial contractility and to the size of the vascular compartment.
- Peripheral resistance is determined by functional and anatomic changes in small arteries and arterioles.

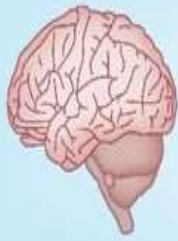
	SYSTOLIC	DIASTOLIC
NORMAL	90-129	60-79
STAGE 1	130-139	80-89
STAGE 2	140-179	90-109
CRITICAL	OVER 180	OVER 110



Source: Bertram G. Katzung, Anthony J. Trevor: Basic & Clinical Pharmacology, 13th Ed.
www.accesspharmacy.com

Copyright © McGraw-Hill Education. All rights reserved.





**Centrally acting
alpha agonists**

Stimulate α_2 receptors in brainstem, reducing sympathetic outflow



**Beta adrenergic
blocking agents**

Block cardiac β_1 adrenergic receptors, reducing heart rate and cardiac contractility

**Angiotensin converting
enzyme inhibitors**

Block conversion of angiotensin I to angiotensin II, a potent vasoconstrictor

**Angiotensin II
receptor blockers**

Competitively block angiotensin II receptors

**Dihydropyridine calcium
channel blockers**

Bind α_1 subunit of L-type calcium channel in muscle cell membrane, reducing vascular smooth muscle contractility

Direct vasodilators

Hydralazine reduces intracellular calcium in vascular smooth muscle cells and minoxidil causes potassium efflux with smooth muscle relaxation; both drugs cause arteriolar dilation





Angiotensin converting enzyme inhibitors

Block conversion of angiotensin I to angiotensin II, a potent vasoconstrictor

Angiotensin II receptor blockers

Competitively block angiotensin II receptors

Dihydropyridine calcium channel blockers

Bind α_1 subunit of L-type calcium channel in muscle cell membrane, reducing vascular smooth muscle contractility

Direct vasodilators

Hydralazine reduces intracellular calcium in vascular smooth muscle cells and minoxidil causes potassium efflux with smooth muscle relaxation; both drugs cause arteriolar dilation



Thiazide diuretics

Inhibit Na-Cl cotransporter in distal convoluted tubule of nephron, causing natriuresis

Loop diuretics

Inhibit Na-K-Cl cotransporter in loop of Henle of nephron, causing natriuresis

Mineralocorticoid receptor blockers

Competitively inhibit aldosterone binding to the mineralocorticoid receptor, ultimately reducing sodium reabsorption in collecting duct of nephron

- **Thank you**