

Chapter one Hypertension

1- A 56 year old man comes to the emergency department for an upper respiratory tract infection. In physical examination, you find his BP to be 180/120 mm Hg. ECG shows signs of left Ventricular hypertrophy. Which of the following is a good step in the management of this case?

- a- Salt consumption reduction and follow-up
- b- Antihypertensive drugs and follow-up
- c- Sedatives
- d- IV TNG to lower the BP quickly

2- A 52 year old man with an uncontrolled HTN history is hospitalized for the chief complaint of retrosternal pain. ECG shows ST and T changes in leads I, aVL, and V6. By the diagnosis of unstable angina, NTG, morphine and oxygen is administered. Pain disappears but BP remains as 170/110 mmHg. Which is the drug of choice for HTN?

- a- Hydralazine
- b- Diazoxide
- c- Nifedipine
- d- Labetalol

3- A 25 year old 28 week pregnant woman has developed weight gain, head-ache and peripheral edema within the last week. Her BP is 150/105 mmHg. Which drug should **not** be prescribed for her?

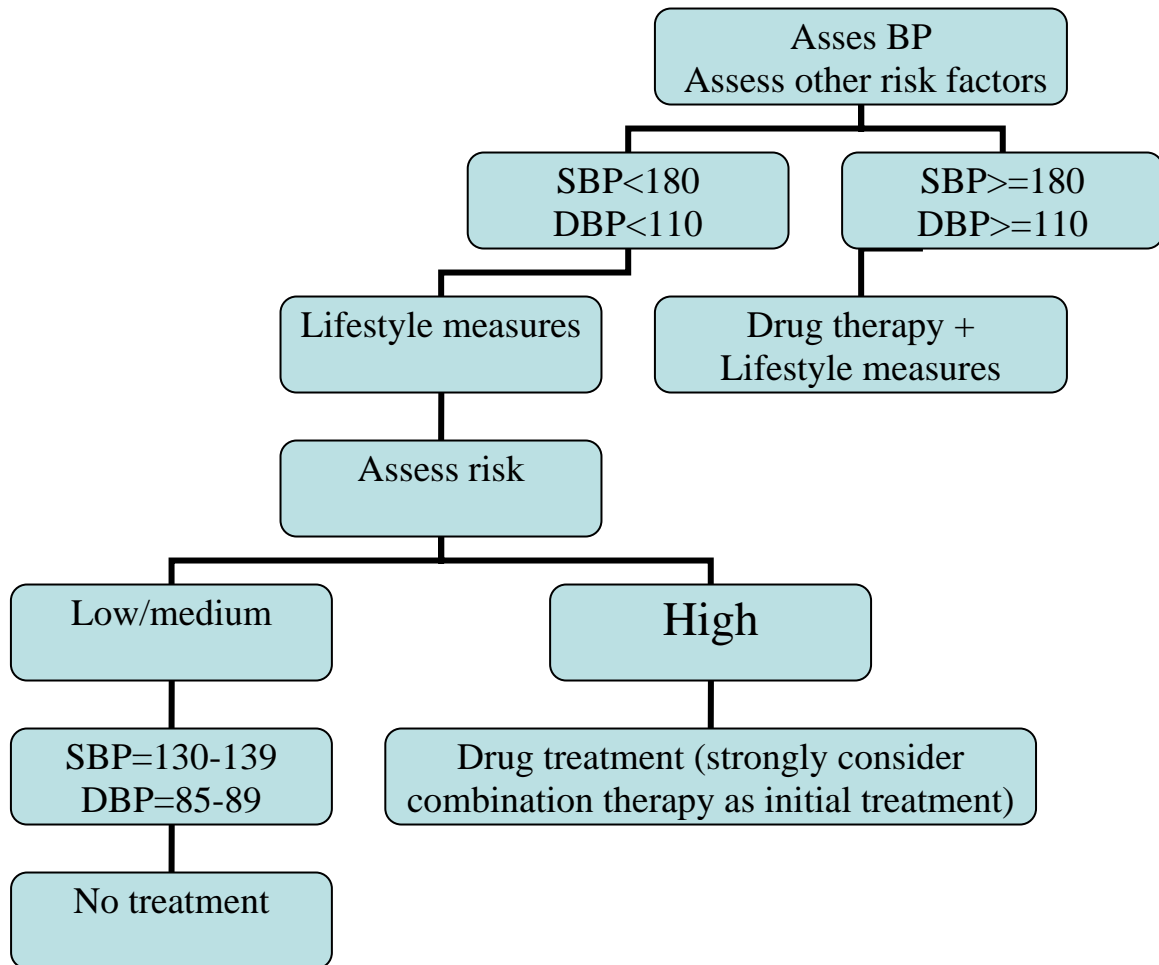
- a- Methyldopa
- b- ACE inhibitor
- c- Hydralazine
- d- Nifedipine

4- What drug is **not** used for the treatment of pre-eclampsia?

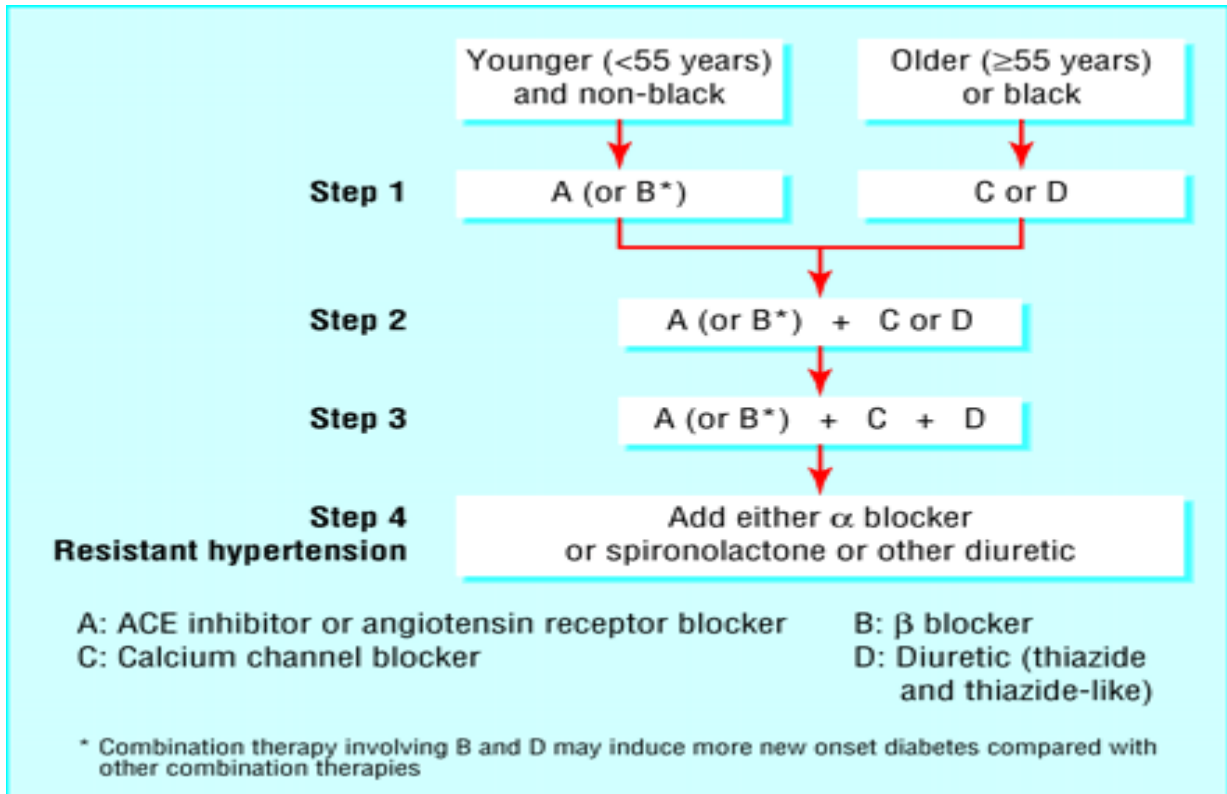
- a- Betablocker
- b- Methyldopa
- c- ACE inhibitor
- d- Hydralazine

5- Which statement about treatment of HTN with ACE inhibitors is **wrong**?

- a- They are drugs of choice in diabetics.
- b- They can be used in mild renal failure.
- c- In unilateral renal artery stenosis, they can be prescribed if the other kidney has a normal function
- d- They are drugs of choice for the elderly



Algorithm1-1: Approach to HTN. Risk factors are: smoking, obesity, male sex, diabetes, organ damage, etc. Three or more risk factors and/or diabetes and/or organ damage are considered high risk.



Algorithm1-2: Drug choice on a step by step basis for home therapy in cases of chronic HTN

HTN-mdm

Cause Of HTN	Treatment	Avoid
Pain	Analgesics	
Anxiety	anxiolytic	
Intravascular volume overload	Reduce input, consider diuretics, dialysis	
Bladder dysfunction	drainage	
Chronic HTN	Resume home treatment if possible	
Acute left ventricular dysfunction	NTG, SNP	Hydralazine, diazoxide, betablockers
Dissecting aneurism	Labetalol- SNP w/ esmolol- NTG w/esmolol	Hydralazine /diazoxide
pheochromocytoma	Labetalol SNP w/ esmolol	Avoid beta blocker alone/ Methyldopa /minoxidil
Pre-eclampsia	Hydralazine labetalol	SNP /Diuretics
Postop HTN	Labetalol / Enalapril /hydralazine	
CrCl<60 ml/min	Labetalol hydralazine	Avoid ACE-inhibitors SNP
Acute MI	Enalapril NTG Betablocker CCB	Hydralazine, Diazoxide minoxidil
Cardiac insufficiency	Enalapril NTG	hydralazine diazoxide beta blocker
hyperactive airway disease	Enalapril hydralazine	Labetalol Beta blocker
Pulmonary edema	NTG Loop diuretic	Minoxidil Methyldopa
Cerebral infarct	Labetalol	NTG/ CCB Betablocker /Diazoxide Minoxidil /Methyldopa Clonidine
Traumatic brain injury	Labetalol ACE-inhibitors esmolol	Hydralazine /SNP NTG /CCB Methyldopa /clonidine
Cocaine withdrawal	Labetalol NTG	Betablocker
ETOH, tobacco withdrawal	Clonidine	
BPH	Alpha blockers	
Type I diabetic nephropathy	ACE-inhibitors	
Cough induced by ACE-inh. Type II diabetic nephropathy	Angiotensin antagonists	
Isolated systolic hypertension	CCB Thiazides	

Table1-1: Hypertension management (NTG also TNG=nitroglycerine/SNP=sodium nitroprosside/CCB=calcium channel blocker/ACE inh= Angiotensin Converting Enzyme Inhibitor)

Drugs of importance:

Drug	Contraindications	Dosage	Explanation	Price
SNP	-Hypersensitivity -Reduced cerebral-perfusion -Arteriovenous shunts -Coarctation of aorta -AF or flutter with rapid ventricular rate	(2cc/50 mg) 0.3-0.5 mcg/kg/min	It should be diluted in 250-1000 cc DW5% or NS. It should be covered to light by aluminum foils. Titrate to desired effect. Rates>10 mcg/kg/min may lead to cyanide toxicity.	50100 Rls.
TNG (Isosorbide dinitrate 10-80 mg po bid/qid)	-Hypersensitivity -Low blood pressure -Anemia -Shock -Head trauma -Closed Angle Glucoma -Cerebral hemorrhage	(1cc/5mg) 0.2-10 mcg/kg/min	It should be diluted in 50cc DW5% or NS.	4765 Rls.
Labetalol	-Hypersensitivity -Cardiogenic shock -Pulmonary edema -Bradycardia -AV block -Uncompensated CHF	20-30 mg	It should be injected in 2 minutes IV, followed by 40-80 mg at 10 min intervals	Amp propranolol 1mg/ml 1300 Rls.
Hydralazine	-Hypersensitivity -Rheumatic heart disease of Mitral valve	10-20 mg/dose IV or IM q4-6 hrs prn	Not to exceed 300 mg/dose	2100 Rls.
Enalapril	-Hypersensitivity -Renal impairment -Angioedema	2.5-5 mg/d po		270 Rls.
Verapamil	-Hypersensitivity -CHF -SSS -1 & 2 degree block -SBP<90 mmHg	(tab of 40 and 80 mg) 240-480 mg/d/tid.		120 Rls
Clonidine	-Hypersensitivity	(Tab 0.2 mg) 0.1 mg bid po	Not to exceed 1.2 mg/day	40 Rls
Thiazide	-Hypersensitivity -Anuria -Renal -decompensation	25-100 mg po qd		

Table1-2: Drugs mentioned in this chapter. (An important note to remember: qd means per day and qid means 4 times a day.)

HTN-mdm

Answers:

- 1-b
- 2-d
- 3-b
- 4-c
- 5-d

References:

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