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*hypertension risk factors of cardiovascular disease ,stroke, chronic kidney disease, atrial fibrillation, congestive heart failure .(CHF, including diastolic dysfunction), cognitive*.

Lowering blood pressure by 10mmHg systolic and 5mmHg diastolic at age 65 years is with a reduction of up to 25% in myocardial infarction, 40% in stroke, 50%CHF, 10% to 20% overall decrease in mortality

Prevalence for hypertension aged 65 years or older ranges between 50% and 75%.

## •Age-Related Physiological Changes that Contribute to:Elevated Blood Pressure

-Arterial stiffness
-Decreased baroreceptor sensitivity
-Increased sympathetic nervous system activity
-Decreased alpha- and beta-adrenergic receptor responsiveness
-Endothelial dysfunction
-Decreased ability to excrete sodium load (sodium sensitivity)
-Low plasma renin activity
-Resistance to insulin's effect on carbohydrate metabolism
-Central adiposity

In the general nonblack population, including those with diabetes, initial treatment should include a thiazide-type diuretic, calcium channel blocker (CCB), angiotensin-converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB).

-In the population ages 18 or older with CKD and hypertension, initial (or add-on) treatment should include an ACE inhibitor or an ARB to improve kidney outcomes.

-This applies to all patients in this population regardless of race or diabetes status

❖main objective of hypertension treatment is to attain and maintain goal BP.

-If goal BP is not reached within a month of initiating treatment, increase the dose of the initial drug or add a

-second drug from one of these four classes.
The clinician should continue to assess BP and adjust the treatment regimen until goal BP is reached.

-If goal BP cannot be reached with two drugs, add and titrate a third drug from the list provided.

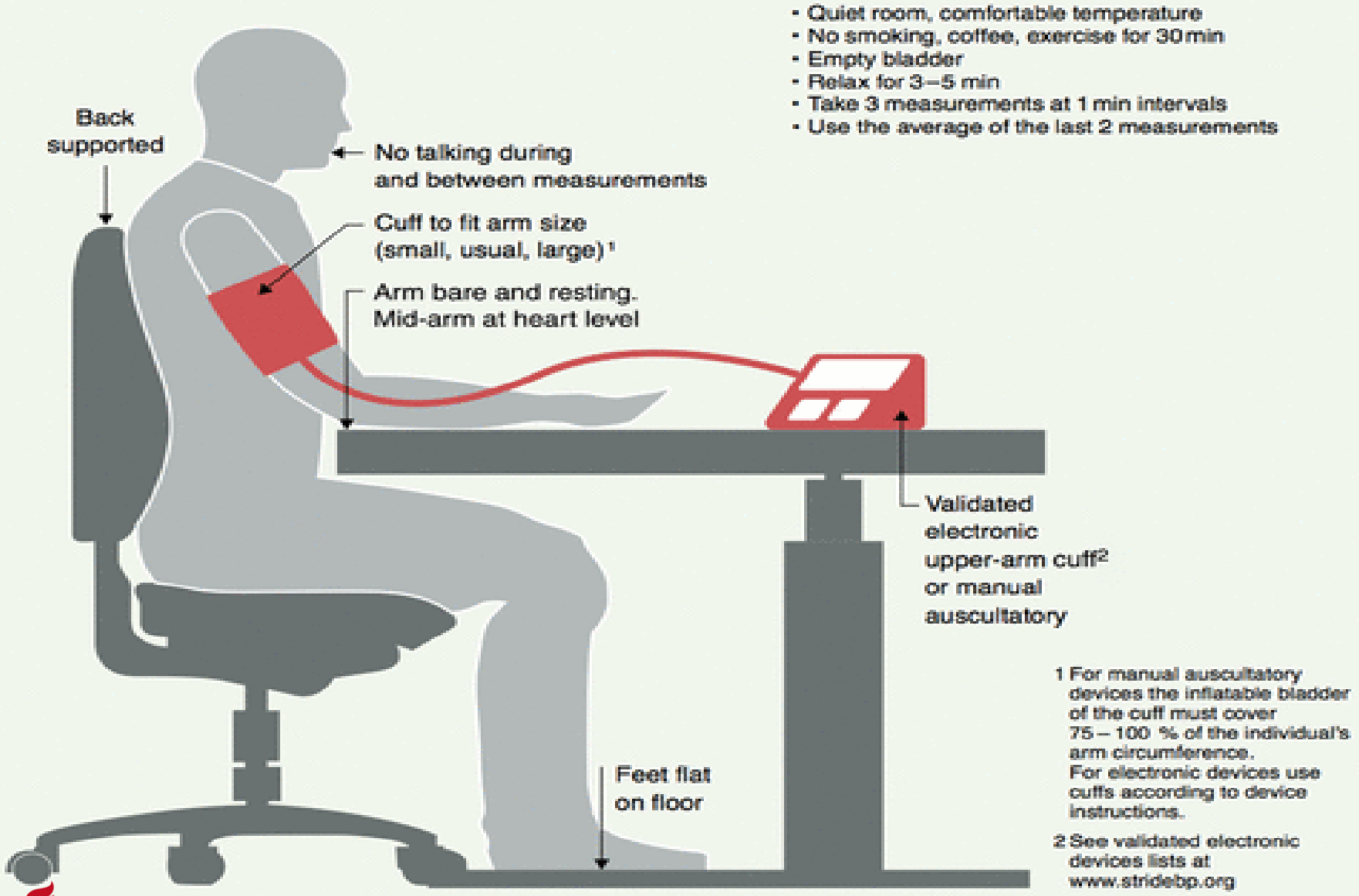
This final recommendation includes a caveat that ACE inhibitors and ARBs should not be used concomitantly.

If goal BP cannot be reached using the above-named drugs because of a contraindication or the need to use more than three such drugs to reach goal BP, antihypertensive drugs from other classes may be used.

- **hypertension** :

a person’s systolic blood pressure (SBP) in the office or clinic is ≥140 mm Hg and/or their diastolic blood pressure (DBP) is ≥90 mm Hg following repeated examination.

- diagnosis should not be made on a single office visit.
- Usually 2–3 office visits at 1–4-week intervals (depending on the BP level) are required to confirm the diagnosis of hypertension.
- The diagnosis might be made on a single visit, if BP is ≥180/110 mm Hg and there is evidence of cardiovascular disease

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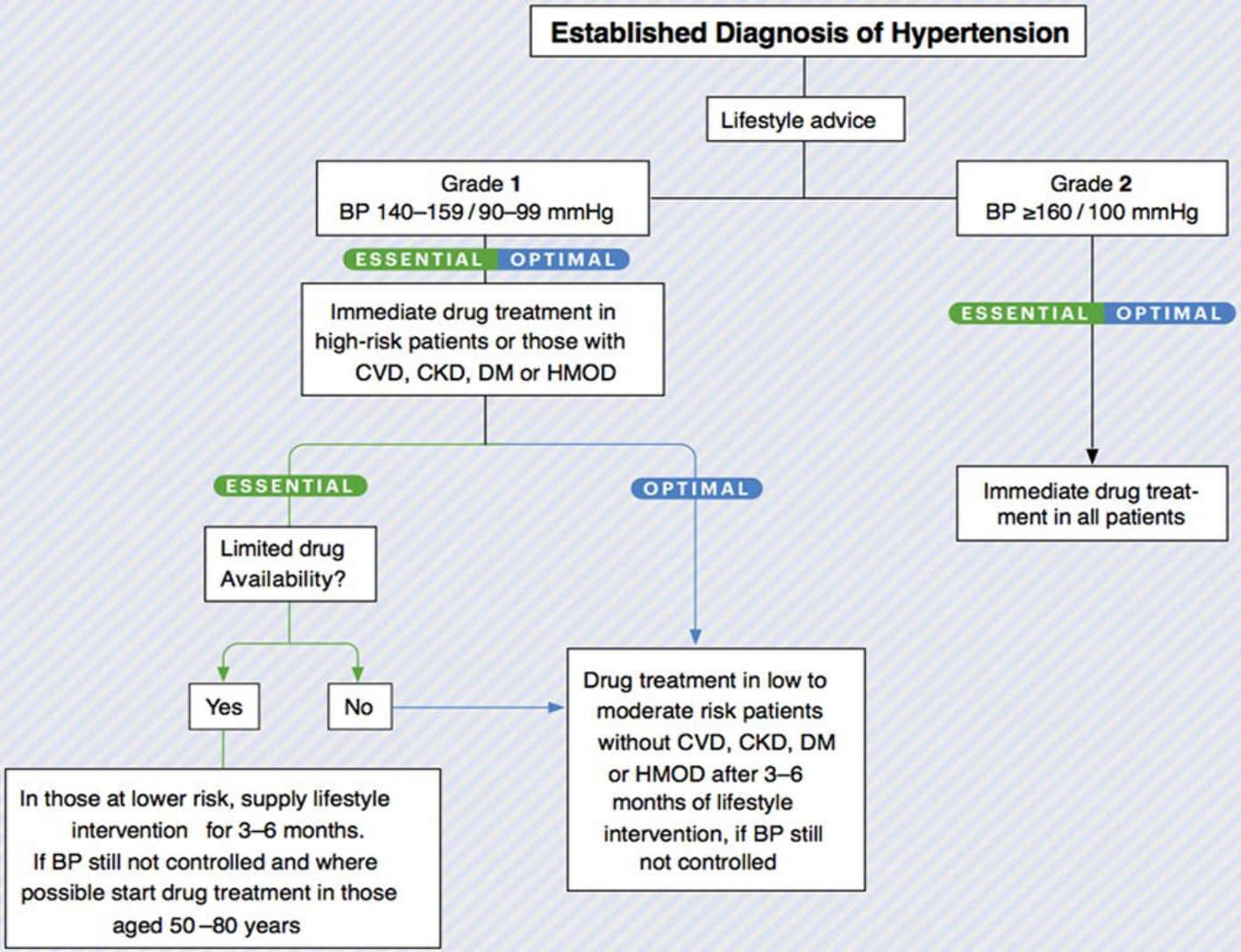




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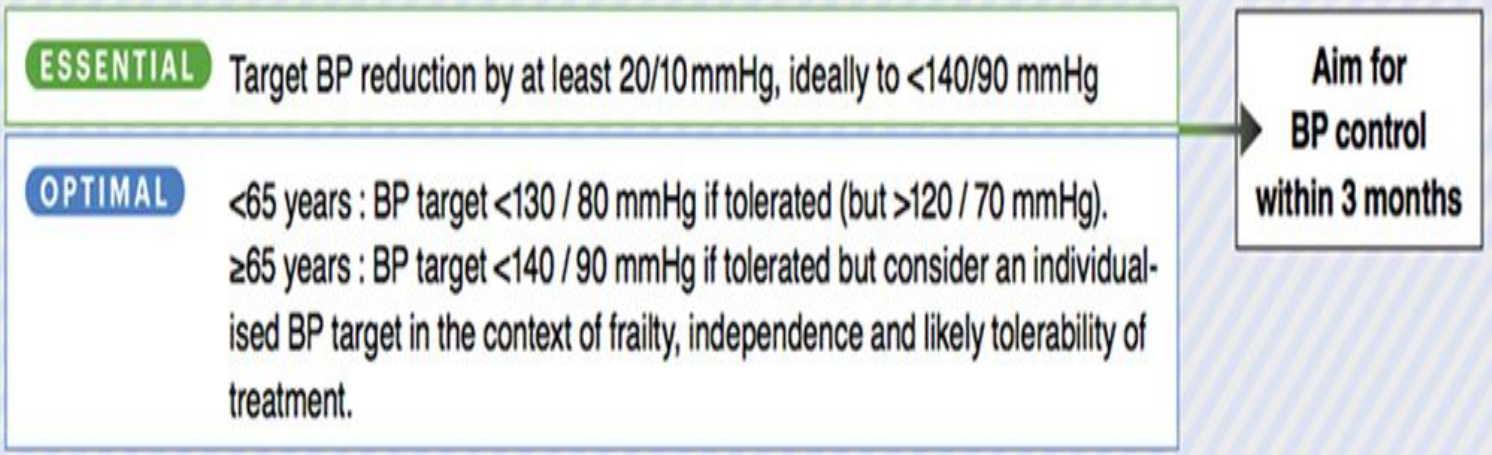




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|---|---|---|---|---|
| Thiazide-type diuretics | • Documented benefit in clinical trials<br>• Produce greater reduction in systolic than diastolic blood pressure<br>• Improve bone mineral density<br>• Inexpensive | • Metabolic abnormalities (eg, hypokalemia)<br>• Urinary frequency | • Systolic hypertension | • Hyponatremia<br>• Gout |
| ACE inhibitors and angiotensin receptor blockers | • Absence of CNS effects<br>• Preservation of renal function<br>• Decrease proteinuria | • Hyperkalemia, cough | • CHF, type 2 diabetes | • Renal insufficiency or renal artery stenosis |
| Calcium channel antagonists | • Benefit documented in clinical trials<br>• Absence of CNS or metabolic effects | • Peripheral edema, constipation, heart block | • Systolic hypertension<br>• Coronary artery disease | • Left ventricular dysfunction |
| β-Adrenergic receptor antagonists | • Not recommended as monotherapy | • May increase peripheral vascular resistance<br>• Metabolic abnormalities<br>• CNS effects | • Postmyocardial infarction | • COPD, peripheral vascular disease, heart block, glucose intolerance, type 2 diabetes, hyperlipidemia, depression |
| α-Adrenergic receptor antagonists | • Improve urinary symptoms in BPH | • Increased rate of CHF hospitalizations as monotherapy relative | • Prostatism | • Left ventricular dysfunction |

# Hypertensive Emergencies

•A hypertensive emergency is the association of substantially elevated BP with acute HMOD.

•Target organs include the retina, brain, heart, large arteries, and the kidneys.

•This situation requires rapid diagnostic workup and immediate BP reduction to avoid progressive organ failure. Intravenous therapy is usually required.

•The choice of antihypertensive treatment is predominantly determined by the type of organ damage.

**Malignant hypertension:**

Severe BP elevation (commonly >200/120 mm Hg) associated with advanced bilateral retinopathy (hemorrhages, cotton wool spots, papilledema).

**Hypertensive encephalopathy:**

Severe BP elevation associated with lethargy, seizures, cortical blindness and coma in the absence of other explanations.

**Hypertensive thrombotic microangiopathy:** Severe BP elevation associated with hemolysis and thrombocytopenia in the absence of other causes and improvement with BP-lowering therapy.

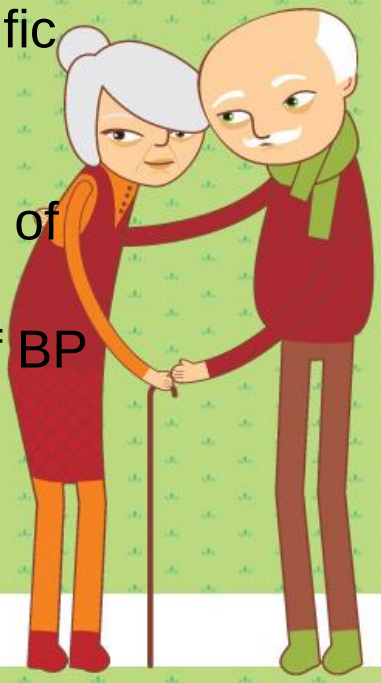
Other presentations of hypertensive emergencies include severe BP elevation associated with cerebral hemorrhage, acute stroke, acute coronary syndrome, cardiogenic pulmonary edema, aortic aneurysm/dissection, and severe preeclampsia and eclampsia.

# Clinical Presentation and Diagnostic Workup:

- The clinical presentation of a hypertensive emergency can vary and is mainly determined by the organ(s) acutely affected. There is no specific BP threshold to define a hypertensive emergency.

- Symptoms include headaches, visual disturbances, chest pain, dyspnea, neurologic symptoms, dizziness, and more unspecific presentations.

Medical history: preexisting hypertension, onset and duration of symptoms, potential causes (nonadherence with prescribed antihypertensive drugs, lifestyle changes, concomitant use of BP elevating drugs [NSAIDS, steroids, immune-suppressants, sympathomimetics, cocaine, antiangiogenic therapy



# Diagnostic Tests and Acute Therapeutic Management

❖The timeline and magnitude of BP reduction is strongly dependent on the clinical context.

❖For example, acute pulmonary edema and aortic dissection require rapid BP reduction, whereas BP levels not exceeding 220/120 mm Hg are generally tolerated in acute ischemic stroke for certain periods.

❖*provides a general overview of timelines and BP targets as well as preferred* antihypertensive drug choices with most common clinical presentations.

# Diagnostic Tests and Acute Therapeutic Management

❖ Availability of drugs and local experience with individual drugs are likely to influence the choice of drugs.

❖Labetalol and nicardipine are generally safe to use in all hypertensive emergencies and should be available wherever hypertensive emergencies are being managed.

❖Nitroglycerin and nitroprusside are specifically useful in hypertensive emergencies including the heart and the aorta.