BP Treatment Algorithm: Patients with Stage 2 HTN Not on Medication

For adults without CHF, CKD (including renal transplantation), metabolic syndrome, pregnancy, history of CVA, SIHD, atrial fibrillation, valvular heart disease or aortic disease

Office BP ≥140/90 and/or SMBP average ≥135/85 HTN Stage 2

Initiate antihypertensive medication

Patient-specific factors, such as age, concurrent medications, drug adherence, drug interactions, the overall treatment regimen, out-of-pocket costs, and comorbidities, should be considered when choosing medication

Patient is ACEi Intolerant or has pregnancy potential*

Yes → Consider starting with HCTZ Or Chlorthalidone*** Continue SMBP. Reassess in 4 weeks

No → Consider starting with Lisinopril-HCTZ** Continue SMBP. Reassess in 4 weeks.

BP goal met of <130/<80?

Yes → Continue antihypertensive medication. Reassess in 3-6 months

No → Patient has pregnancy potential?

Yes → Consider adding amlodipine or titrating current regimen to maximal dose. Continue SMBP. Reassess in 4 weeks

No → Consider adding losartan OR titrating current regimen to maximal dose. (If adding losartan to HCTZ, consider single-pill combination) Continue SMBP. Reassess in 4 weeks

BP goal met of <130/<80?

Yes → Continue antihypertensive medication. Reassess in 3-6 months

No → Consider adding amlodipine or titrating current regimen to maximal dose. Continue SMBP. Reassess in 4 weeks

BP goal met of <130/<80?

Yes → Continue antihypertensive medication. Reassess in 3-6 months

No → Spironolactone eligibility criteria met: If on thiazide and eGFR ≥ 60mL/min/1.73 m2 AND potassium < 4.5 mmol/L

Yes → Consider adding Spironolactone or titrating current regimen to maximal dose. Continue SMBP. Reassess in 4 weeks

BP goal met of <130/<80?

Yes → Continue antihypertensive medication. Reassess in 3-6 months

No → Consider medication non-adherence

No → Consider adding Bisoprolol: Titrate to BP, maintain pulse of >55; OR consider titrating current regimen to maximal dose. Continue SMBP. Reassess in 4 weeks

BP goal met of <130/<80?

Yes → Continue antihypertensive medication. Reassess in 3-6 months

No → Consider medication non-adherence

Do not combine ACEi and ARB
Use Single Pill combinations when possible
*Pregnancy potential: ACEi and ARBs contraindicated
** In Black/African American adults without heart failure or CKD, initial treatment should include a thiazide diuretic or calcium channel blocker
***For adults aged 18-75 with CKD, intolerant to ACEi with cough, and no pregnancy potential, losartan should be started before adding thiazide.

- Consider medication non-adherence
- Consider interfering agents (e.g. NSAIDS, excess alcohol)
- Consider white coat effect. Consider BP checks by medical assistant, AOBP or SMBP
- Consider discontinuing Lisinopril/HCTZ and changing to chlorthalidone plus Lisinopril
- Consider additional agents (Hydralazine, terazosin, minoxidil)
- Consider stopping beta blocker and adding diltiazem to amlodipine, maintaining heart rate >55
- Avoid using clonidine, verapamil or diltiazem with a beta blocker. These heart rate-slowing drug combinations may cause symptomatic bradycardia over time.
- In adults with eGFR <30-40 mL/min/1.73 m2), change thiazide diuretic to furosemide twice daily or torsemide daily
- When bisoprolol is used in adults with eGFR <40 mL/min/1.73 m2, start bisoprolol at 2.5 mg and advance cautiously
- Consider secondary etiologies
- Consider consultation with a hypertension specialist.

Self-Measured Blood Pressure, Other Considerations and Alternative Recommended Medications

SMBP for Treatment Intensification

Ideally, obtain weekly BP readings beginning 2 weeks after a change in the treatment regimen and during the week before a clinic visit. Instruct the patient to take at least 2 readings 1 min apart in morning before taking medications and 2 readings 1 min apart in evening. Measure and record BP daily for 3-7 consecutive days.

SMBP vs Office BP

For SMBP measurement interpretation, an average systolic and diastolic BP of 135/85 mm Hg is considered equivalent to 140/90 mm Hg in the office setting.

Considerations

- Patient-specific factors, such as age, concurrent medications, drug adherence, drug interactions, the overall treatment regimen, out-of-pocket costs, and comorbidities, should be considered when choosing medication.
- For patients with average BP readings that are >20/10 above goal, it is recommended to begin treatment with 2 medications from 2 different classes.
- Initiation of one antihypertensive medication is reasonable in older adults or those at risk or who have a history of hypotension or drug-associated side effects.

For All Patients with HTN

- Conduct a comprehensive patient evaluation including a thorough physical examination and family and self history assessment.
- Assess the 10-year risk for heart disease and stroke using ASCVD calculator.
- Screen for secondary causes of HTN.
- Encourage healthy lifestyle habits.
- Assess adherence to antihypertensive medication.
- Obtain baseline and repeat labs and testing.
- Evaluate for interfering substances (medications, NSAIDs, alcohol, drugs).

Alternative Recommended Medications

- Alternative to Lisinopril:
  - Enalapril
  - Benazepril
  - Captopril
  - Fosinopril
  - Quinapril
  - Moexipril
- Alternative to Amlodipine
  - Nifedipine XL/ER
  - Diltiazem ER Caps
  - Verapamil ER caps (more $ on 340b)
- Alternative to HCTZ or Chlorthalidone
  - Metolazone (more $ on 340b)
  - Indapamide
- Alternative to Lisinopril-HCTZ
  - Enalapril-HCTZ
  - Benazepril-HCTZ
- Alternative to Losartan
  - Valsartan
  - Irbesartan
  - Olmesartan (covered by 340b but not MCOs)
  - Telmisartan (covered by 340b but not MCOs)
- Alternative to Losartan-HCTZ
  - Valsartan-HCTZ
  - Irbesartan-HCTZ
  - Olmesartan-HCTZ (covered by 340b but not MCOs)
  - Telmisartan-HCTZ (covered by 340b but not MCOs, more $ on 340b)

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Sources:

- Kaiser Permanente Care Management Institute. Adult Blood Pressure Clinician Guide. Clinical Practice Guidelines. Natl. February 2019. Adult Blood Pressure Clinician Guide (kpcmi.org)
- American Heart Association. National Hypertension Control Initiative. Act Rapidly Treatment Algorithm Workshop and Chart Review. July 26, 2022