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 is ACEi Intolerant or has pregnancy potential*

Yes

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

No

BP goal met of 130/80?

Yes

Continue antihypertensive medication. Reassess in 3-6 months

No

Patient has pregnancy potential?

Yes

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

No

BP goal met of 130/80?

Yes

Continue antihypertensive medication. Reassess in 3-6 months

No

BP goal met of 130/80?

Yes

Consider adding Bisoprolol: Titrate to BP, maintain pulse of >55; OR consider titrating current regimen to maximal dose. Continue SMBP. Reassess in 4 weeks

No

BP goal met of 130/80?

Yes

Continue antihypertensive medication. Reassess in 3-6 months

No

BP goal met of 130/80?

Yes

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

No

BP goal met of 130/80?

Yes

Continue antihypertensive medication. Reassess in 3-6 months

No

BP goal met of 130/80?

Yes

Patient is ACEi Intolerant or has pregnancy potential*

No

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

BP goal met of 130/80?

Yes

Consider adding losartan OR titrating current regimen to maximal dose. Continue SMBP. Reassess in 4 weeks

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

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

No

BP goal met of 130/80?

Yes

Continue antihypertensive medication. Reassess in 3-6 months

No

BP goal met of 130/80?

Yes

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.

*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.

Do not combine ACEi and ARB
Use Single Pill combinations when possible

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.
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.

**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).

**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.

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**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 Losartan:**
  - Valsartan
  - Irbesartan
  - Olmesartan (covered by 340b but not MCOs)
  - Telmisartan (covered by 340b but not MCOs)

- **Alternative to Lisinopril-HCTZ**
  - Enalapril-HCTZ
  - Benazepril-HCTZ

- **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: