Collaborative Care Network
Expert Clinical Recommendation

Achieving Ambulatory Control of Hypertension

Hypertension is one of the most common, and in some ways the most difficult, chronic medical condition to treat. Cardiovascular disease is still the overall #1 cause of mortality in not only the United States, but in the world. Early detection and treatment are key to avoiding long term sequelae such as hypertensive heart disease, kidney disease, and other hypertension related illnesses.

Blood Pressure	JNC I-8	ACC/AHA 2017
< 120/< 80	"Normal"	"Normal"
120-129/<80	"Pre-hypertension"	"Elevated"
130-139/80-89		Stage 1 HTN*
140-159/90-99	Stage 1 HTN	Stage 2 HTN
≥160/≥ 100	Stage 2 HTN	Stage 2 HTN

*BP drugs recommended only if 10-year CV risk is > 10%.

Changing Treatment Guidelines. The 2017 AHA/ACC Guidelines proposed significant changes to how hypertension is diagnosed and how it should be treated. While these guidelines differ from the 2018 European Guidelines and current CMS HTN Quality Metric (NQF 0018) goal of <140/90 for patients age 18-85, there are some key points to integrate into your practice. **1.** Making the diagnosis of hypertension requires accurate measurement and should include home readings when possible to make the diagnosis. **2.** Therapy should be individualized based on assessment of patient's personal cardiovascular risks including their age and ASCVD Risk score. **3.** While not everyone in the new range of "Stage 1 Hypertension" requires medication, all patents should receive comprehensive education on diet, exercise, and lifestyle modification. **4.** Finally, the benefits from treatment with medication to achieve lower blood pressure goals should always be weighed against the risk of significant side effects, especially in elderly patients where fall risk is elevated.

Treatment Guidelines regarding diagnosis of hypertension using out of office readings*

Definition of hypertension according to office, ambulatory, and home BP levels per guideline statements

SBP/DBP	Clinic	HBPM	Daytime ABPM	Nighttime ABPM	24-hour ABPM
ACC/AHA Guidelines 2017[1]	≥130/80	≥130/80	≥130/80	≥110/65	≥125/75
ESC/ESH Guidelines 2018[2]	≥140/90	≥135/85	≥135/85	≥120/70	≥130/80

BP: blood pressure; SBP: systolic blood pressure; DBP: diastolic blood pressure; HBPM: home blood pressure monitoring; ABPM: ambulatory blood pressure monitoring; ACC/AHA: American College of Cardiology/American Heart Association; ESC/ESH: European Society of Cardiology/European Society of Hypertension.

Correctly Measuring Blood Pressure:

It is critical to make sure **blood pressure has been measured correctly.** Use these tips:

- Patients should be seated with an empty bladder.
- Use correct cuff size and place on bare supported arm.
- Keep legs uncrossed and back supported.
- Do not have a conversation while taking BP.
- Inquire about any OTC meds they may have taken
- If they are taking blood pressure medications be sure they have taken it that AM. Many patients report holding diuretics when "going out for the day" or to the doctor's office.

Review and discontinue medications that cause Hypertension; NSAIDS, OCPS, decongestants, sodium containing antacids, stimulants, atypical antipsychotics, some weight-loss medications, steroids, tricyclic antidepressants, MAOIs, venlafaxine, tacrolimus & cyclosporine. Be sure to also ask about any supplements.

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Resources: 2020 HCC Coding and Documentation Basics. Shiner K.

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Lifestyle Changes The patient MUST understand that lifestyle changes are needed and essential to get optimal control of blood pressure. Medications alone without addressing lifestyle will make it more difficult to treat. Lifestyle changes plus pharmacotherapy is the best strategy to treat blood pressure. **Stress the "Big Five" lifestyle changes to patients and share the impact they can have:**

- **Maintain a healthy weight.** Strive for a body mass index (BMI) between 18.5 and 24.9. (**weight loss can result in up to 1 mm Hg decrease for every pound lost**)
- **Eat healthier.** Limit salt intake to under 3 grams a day (two grams in certain instances – CHF, renal disease). Eat at least five servings of fruit and vegetables daily. (**DASH diet 11-13 mm Hg decrease**)
- **Reduce sodium.** Ideally, stay under 1,500 mg a day, but aim for at least a 1,000 mg per day reduction from where patient is now, and work on it. 75% of the sodium in our diet is from processed foods; getting rid of the saltshaker alone is likely not enough (**4-6 mm Hg decrease**)
- **Get active**. Aim for at least 90 to 150 minutes of aerobic and/or dynamic resistance exercise per week and/or three sessions of isometric resistance exercises per week. (**5-8 mm Hg decrease**)
- **Limit alcohol.** Drink no more than 1-2 drinks a day. 1 for women, 2 for most men) (**4 mm Hg decrease)**

When to start medication? The decision to initiate drug therapy should be individualized and involve shared decision-making between patient and provider. Here are some general recommendations to start medication:

- Patients with out-of-office daytime blood pressure ≥135 mmHg systolic or ≥85 mmHg diastolic (or an average office blood pressure ≥140/90 mmHg if out-of-office readings not available) should start therapy.
- Patients with an out-of-office blood pressure (mean home or daytime ambulatory) ≥130 mmHg systolic or ≥80 mmHg diastolic average of appropriately measured office readings ≥130 mmHg systolic or ≥80 mmHg diastolic) should start therapy if they have one or more of the following: Established clinical cardiovascular disease (Stable ischemic heart disease, heart failure, carotid disease, previous stroke, or peripheral arterial disease) ; Type 2 diabetes mellitus; Chronic kidney disease; Age 65 years or older**; An estimated 10-year risk of ASCVD of at least 10%.

NOTE: Data are limited on the risks and benefits of initiating anti-hypertensive therapy in patients who have stage 1 hypertension (130 to 139/80 to 89 mmHg) who are over the age of 75 and have an elevated estimated 10-year risk of atherosclerotic cardiovascular disease of at least 10 percent (but no clinical cardiovascular disease, diabetes, or chronic kidney disease). Clinicians should consider medications risks and side effects in these older patients.

Medication Considerations:

1. Use thiazide or thiazide like diuretic, ACE/ARB (avoid in women of child-bearing age), or CCB as first line. Newer drugs not much better than older drugs in terms of BP control; cheap is just as good!
2. For African American population, think thiazides/CCB as first line (much less likely to respond to ACE/ARB than other ethnicities)
3. Reserve Beta blockers, alpha blockers, and other medications as second line (or if specific indication such as migraine, BPH, etc.)
4. If BP is 20/10 over goal, very likely will need two meds to get to goal.
5. Using more than one medication at submaximal doses may improve BP control while lessening side effects (and actually improve long term morbidity/mortality)
6. Using ACE/ARB plus a Dihydropyridine CCB may be preferable to other combination therapies.
7. Sequential monotherapy recommended for patients who don't respond at all to their first choice

When to refer or consider possibility of secondary hypertension:

Consider further work up or referral in cases of Resistant hypertension (patient not at goal on three drugs, one of which is a diuretic); Hypertension with hypokalemia and metabolic alkalosis, young patient with hypertension (<30 years of age), acute worsening or labile hypertension without obvious cause, hypertension associated with proteinuria or hematuria, onset of severe hypertension after the age of 55 years with increase in creatinine.

Resources: 2020 HCC Coding and Documentation Basics. Shiner K.