Hypertension Management Guidelines Handout

What is hypertension?

Blood pressure readings of 130/80 mm Hg or higher, or the use of antihypertensive medication, indicate hypertension. This condition affects approximately 50% of U.S. adults, with many unaware of their status. While medication and lifestyle changes are recommended for about 80% of hypertensive adults, only half receive treatment.

How do you manage and treat hypertension?

The following measures are commonly taken to manage hypertension:

- Weight loss and exercise
- Smoking cessation
- Adequate sleep duration (> 6 hours/night)
- Diet: Increased fruits and vegetables, decreased salt, limited alcohol
- Medications: Depending on BP and the presence of cardiovascular disease or risk factors

While primary hypertension (high blood pressure without an identifiable cause) has no cure, certain forms of secondary hypertension (high blood pressure caused by an underlying condition) may be treatable. Effectively managing blood pressure can significantly reduce harmful outcomes, regardless of the type of hypertension.

The recommended goal blood pressure for most patients, including those with kidney disorders or diabetes, is **130/80 mm Hg**, regardless of age up to 80. Lowering blood pressure below this target can continue reducing the risk of vascular complications, but decreasing systolic pressure (the top number) further increases the risk of adverse medication effects, such as dizziness and light-headedness.

The benefits of lowering blood pressure to levels approaching 120 mm Hg systolic should be weighed against the higher risk of these adverse events, particularly in patients with diabetes, where a systolic blood pressure below 120 mm Hg or a diastolic blood pressure (the bottom number) approaching 60 mm Hg can increase the risk of these side effects.

Even older, frail patients can generally tolerate diastolic blood pressure as low as 60-65 mm Hg without increased cardiovascular events. Patients or their family members should be trained to measure blood pressure at home, with the sphygmomanometer (blood pressure cuff) regularly calibrated.

Treating hypertension during pregnancy requires careful medication selection, as some antihypertensive drugs can potentially harm the developing fetus.

Lifestyle modifications

Lifestyle modifications are recommended for all patients with elevated blood pressure or any stage of hypertension. The most effective non-pharmacological interventions for preventing and treating hypertension include:

- Increased physical activity, ideally through a structured exercise program.

- Weight loss for patients who are overweight or obese.
- Adoption of a healthy diet rich in fruits, vegetables, whole grains, and low-fat dairy products, with reduced saturated and total fat content.
- Reduced dietary sodium intake to less than 1,500 mg daily (or at least a 1,000 mg daily reduction).
- Increased dietary potassium intake, unless contraindicated due to chronic kidney disease or medications that reduce potassium excretion.
- Moderation in alcohol intake, with no more than 2 drinks daily for men and 1 drink daily for women (one drink is about 12 oz of beer, 5 oz of wine, or 1.5 oz of distilled spirits).
- Smoking cessation.
- Adequate sleep duration, with at least 6 hours per night. Optimizing sleep quality and duration can improve blood pressure control in patients with chronic kidney disease.

Dietary modifications can also help control diabetes, obesity, and dyslipidemia. Patients with uncomplicated hypertension do not need to restrict their activities as long as their blood pressure is controlled.

Medications

The decision to treat hypertension with medication is based on the blood pressure level and the presence of atherosclerotic cardiovascular disease (ASCVD) or its risk factors. Diabetes or kidney disease is not considered separately because these conditions are part of the ASCVD risk assessment.

Continued reassessment is a crucial aspect of management. If patients are not at their target blood pressure, clinicians should strive to **optimize adherence before switching or adding medications**.

Medication selection is based on several factors, including comorbidities and contraindications. For most patients, initial monotherapy treatment may be with any of the following medication classes:

- Angiotensin-converting enzyme (ACE) inhibitor
- Angiotensin II receptor blocker (ARB)
- Dihydropyridine calcium channel blocker
- Thiazide diuretic (preferably a thiazide-like diuretic such as chlorthalidone or indapamide)

When combination therapy with 2 antihypertensive agents is selected, options include either an ACE inhibitor or ARB combined with either a diuretic or a calcium channel blocker. Many combinations are available as single pills, which are preferable to improve patient adherence.

Signs of hypertensive emergencies require immediate blood pressure reduction with parenteral antihypertensives. Some antihypertensives are avoided in certain disorders, while others are preferred for specific conditions.

If the target blood pressure is not achieved within 1 month, adherence should be assessed, and the importance of following treatment should be reinforced. If patients are adherent, the initial medication dose can be increased or a second medication added.

Achieving adequate blood pressure control often requires several evaluations and changes in pharmacotherapy. Reluctance to titrate or add medications to control blood pressure must be overcome. Nonadherence to therapy, particularly because lifelong treatment is required, can interfere with adequate blood pressure control. Education, with empathy and support, is essential for success.

Devices and physical interventions

Percutaneous catheter-based radiofrequency ablation of the sympathetic nerves in the renal artery is used in Europe and Australia to treat resistant hypertension. Several industry-funded, sham-controlled studies have demonstrated statistically and/or clinically significant reductions in systolic blood pressure in patients with untreated, treated, or resistant hypertension. However, whether these devices can reduce major cardiovascular events remains uncertain.

A physical intervention to lower blood pressure involves stimulating the carotid baroreceptor with a device surgically implanted around the carotid body. Similar to a pacemaker, the device is designed to stimulate the baroreceptor and dose-dependently lower blood pressure.

Long-term follow-up of patients with resistant hypertension included in earlier pivotal trials suggests that baroreflex activation therapy maintained its efficacy for persistently reducing office blood pressure without major safety issues. However, the 2017 American College of Cardiology/American Heart Association guidelines concluded that studies have not provided sufficient evidence to recommend using these devices in managing resistant hypertension.

References

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