Clinical Guideline: Hypertension Management in Adults

1. Introduction

This clinical guideline provides evidence-based recommendations for the diagnosis, evaluation, and management of hypertension in adults aged 18 and older. It is based on the 2023 ACC/AHA guidelines and adapted for our institution. Hypertension affects approximately 47% of US adults and is the leading modifiable risk factor for cardiovascular disease, stroke, chronic kidney disease, and heart failure.

2. Diagnosis and Classification

Blood pressure should be measured on at least 2 separate occasions before establishing a diagnosis. Use validated automated office blood pressure devices. Classification: Normal BP is less than 120/80 mmHg. Elevated BP is 120-129 systolic and less than 80 diastolic. Stage 1 hypertension is 130-139 systolic or 80-89 diastolic. Stage 2 hypertension is 140 or higher systolic or 90 or higher diastolic. Hypertensive crisis is greater than 180 systolic and/or greater than 120 diastolic with or without target organ damage.

3. Initial Evaluation

All newly diagnosed hypertensive patients require: comprehensive metabolic panel (electrolytes, creatinine, eGFR, glucose, calcium), complete blood count, lipid panel, thyroid stimulating hormone, urinalysis with albumin-to-creatinine ratio, and 12-lead electrocardiogram. Consider echocardiography for patients with Stage 2 hypertension or evidence of target organ damage. Screen for secondary causes if age of onset is under 30, resistant hypertension, or sudden worsening of control.

4. Lifestyle Modifications

Recommend lifestyle modifications for all patients with elevated BP or hypertension. DASH diet: rich in fruits, vegetables, whole grains, low-fat dairy, with reduced saturated fat and sodium. Sodium restriction to less than 2300mg per day, ideally less than 1500mg. Regular aerobic exercise: 150 minutes per week of moderate intensity or 75 minutes of vigorous intensity. Weight management: target BMI 18.5-24.9 kg/m2. Limit alcohol to 2 drinks per day for men and 1 for women. Smoking cessation with pharmacotherapy support when indicated. Expected BP reduction with comprehensive lifestyle changes: 5-15 mmHg systolic.

5. Pharmacologic Treatment - First Line Agents

Initiate pharmacologic therapy for Stage 1 hypertension with 10-year ASCVD risk of 10% or greater, or for all Stage 2 hypertension. First-line agents include: ACE inhibitors (lisinopril 10-40mg daily, enalapril 5-40mg daily) - preferred for patients with diabetes, CKD, or heart failure with reduced ejection fraction. ARBs (losartan 50-100mg daily, valsartan 80-320mg daily) - alternative for ACE inhibitor intolerance due to cough. Calcium channel blockers (amlodipine 2.5-10mg daily) - preferred for elderly patients and African American patients. Thiazide diuretics (chlorthalidone 12.5-25mg daily, hydrochlorothiazide 25-50mg daily). Do NOT combine ACE inhibitors with ARBs due to increased risk of hyperkalemia and renal impairment.

6. Treatment Targets and Monitoring

Target BP for most adults: less than 130/80 mmHg. For patients aged 65 and older with significant comorbidities or frailty: less than 140/90 mmHg may be acceptable. Follow-up within 4 weeks of initiating or changing therapy. Check electrolytes and renal function 2-4 weeks after starting ACE inhibitor, ARB, or diuretic. If BP remains above target on single agent at optimal dose, add a second agent from a different class rather than maximizing single agent dose. Consider fixed-dose combination pills to improve adherence.

7. Resistant Hypertension

Defined as BP above target despite optimal doses of 3 antihypertensive agents from different classes, including a diuretic. Before diagnosing resistant hypertension: confirm adherence using pharmacy refill records, rule out white coat effect with ambulatory BP monitoring, assess for interfering substances (NSAIDs, decongestants, oral contraceptives, stimulants). Fourth-line agent: spironolactone 25-50mg daily. Refer to hypertension specialist if BP remains uncontrolled on 4 agents.

8. Special Populations

Pregnancy: discontinue ACE inhibitors and ARBs immediately. Use labetalol, nifedipine, or methyldopa. Target BP less than 140/90 mmHg. Diabetes mellitus: ACE inhibitor or ARB is first-line, especially with albuminuria. Chronic kidney disease: ACE inhibitor or ARB for patients with albuminuria. Monitor potassium closely. Heart failure with reduced ejection fraction: ACE inhibitor (or ARB), beta-blocker, and mineralocorticoid receptor antagonist. Coronary artery disease: beta-blocker and ACE inhibitor preferred. African American patients: calcium channel blocker or thiazide diuretic as initial therapy.