

Hypertension

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KEYWORDS

- Hypertension • Blood pressure • Antihypertensive therapy • Diabetes • Diuretics
- Angiotensin-converting enzyme inhibitors • Angiotensin receptor blockers
- Calcium channel blockers

KEY POINTS

- Antihypertensive treatment substantially reduces the risk of heart failure, stroke, and myocardial infarction.
- A thiazide-type diuretic such as chlorthalidone should usually be part of the therapeutic regimen, with additional agents based on comorbidities.
- Secondary causes of hypertension should be considered in all children with hypertension as well as adults with early onset hypertension or resistant hypertension.

EPIDEMIOLOGY

Hypertension is the most common modifiable risk factor for cardiovascular disease (CVD), affecting 1 in 3 American adults.¹ The risk of having hypertension increases with age (**Box 1**), with a 90% lifetime risk of developing hypertension for people living in the United States.² The prevalence of hypertension also varies by race/ethnicity, with non-Hispanic Blacks having the highest prevalence (38.6%).¹

Hypertension contributes to nearly 50% of all adverse CVD outcomes in developed nations such as the United States, including myocardial infarction (MI), heart failure, stroke, and kidney disease.^{1,2} In addition, CVD morbidity and mortality are positively correlated with the degree of elevation of blood pressure (BP), without any evidence of a threshold down to at least 115/75 mm Hg.³ Control of BP can reduce heart failure, stroke, and MI risks by 50%, 40%, and 25%, respectively.² Recent data suggest that even among “normotensive” patients, BP-lowering drugs reduce adverse CVD outcomes in patients with risk factors for atherosclerotic disease.⁴

Data from the most recent National Health and Nutrition Examination Survey showed that although the proportion of hypertensive patients receiving pharmacologic

Disclosure: Dr Viera serves on the Medical Advisory Board for Suntech Medical, manufacturer of a brand of ambulatory blood pressure monitor.

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Box 1 Prevalence of hypertension by age group	
Age Group	Prevalence of Hypertension
18–39 y	7.4%
40–64 y	35.6%
65+ y	69.7%

treatment has risen (from 60.3% to 69.9%) over the past decade, only about 46% are considered controlled (defined as systolic/diastolic BP <140/90 mm Hg).¹

SCREENING FOR HYPERTENSION

The US Preventive Services Task Force (USPSTF) in 2007 issued a grade “A” recommendation to screen all adults aged 18 years and older for high BP.⁵ The guideline recommends averaging 2 or more BPs in 2 separate office visits over a period of 1 to several weeks. The exception to this rule are those patients with a single greatly elevated BP reading in the office setting (systolic BP >200 mm Hg and/or diastolic BP >120 mm Hg) in the absence of a recognized cause of secondary elevation.⁶ Although the USPSTF guideline did not specify a screening interval, the authors cite the seventh report of Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC7)’s guidelines of screening every 2 years in those with BP less than 120/80 mm Hg and every year in prehypertensive patients.^{2,5}

CURRENT DIAGNOSIS AND MANAGEMENT GUIDELINES

The JNC developed the most widely accepted guideline for managing hypertension in the United States.² The most recent JNC report was published in 2003 (known as JNC7). The JNC7 report classifies hypertension into prehypertension, Stage I, and Stage II according to the degree of BP elevation (**Table 1**).²

Recommendations for the approach to management depend in part on whether patients have comorbidities. Major CVD comorbidities include heart failure, history of MI or stroke, coronary artery disease, diabetes, and chronic kidney disease

Table 1 Classification of hypertension initial BP management			
BP Classification	Systolic (mm Hg)	Diastolic (mm Hg)	Management ^a
Prehypertension	120–139 or	80–89	Screen every year; pharmacotherapy not indicated
Stage I hypertension	140–159 or	90–99	Thiazide-type diuretic (eg, chlorthalidone) for most; consider ACEI (or ARB), BB, CCB, or combination of these depending on comorbidities
Stage II hypertension	≥160 or	≥100	Initial therapy with 2-drug combination (usually thiazide-type diuretic and ACEI or ARB, CCB, or BB)

Abbreviations: ACEI, angiotensin-converting enzyme inhibitor; ARB, angiotensin II receptor blocker; BB, beta-blocker; CCB, calcium channel blocker.

^a For all categories, lifestyle modifications, as described in the next section, should be encouraged.

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