The 2017 American College of Cardiology/American Heart Association Hypertension Guideline: A Resource for Practicing Clinicians

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Hypertension is the leading risk factor for death and disability worldwide (1, 2). The 2017 American College of Cardiology (ACC)/American Heart Association (AHA) Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults (3) is the first comprehensive clinical practice guideline for hypertension since the Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7) in 2003 (4). The ACC/AHA guideline provides an evidence-based approach to reducing risk for cardiovascular disease (CVD) by controlling blood pressure (BP) (3).

Four of the core recommendations for CVD risk reduction in the 2017 ACC/AHA guideline differ substantially from the recommendations in JNC 7. First, the ACC/AHA guideline stresses accurate measurement of BP, including increased use of out-of-office measurements to confirm hypertension and to detect white coat and masked hypertension. Second, stage 1 hypertension is now defined as BP of 130 to 139/80 to 89 mm Hg compared with 140 to 159/90 to 99 mm Hg in JNC 7, and stage 2 hypertension is now defined as BP of 140/90 mm Hg or higher versus 160/100 mm Hg or higher in JNC 7. This decrease in the cut point for hypertension is based on the approximately 2-fold higher CVD risk among adults with stage 1 hypertension (130 to 139/80 to 89 mm Hg) compared with those with BP less than 120/80 mm Hg. In addition, the lower tier of the "prehypertension" category in JNC 7 (systolic BP of 120 to 129 mm Hg and diastolic BP <80 mm Hg) has been replaced with the term "elevated BP" to convey the increased CVD risk compared with normal BP (<120/80 mm Hg). Third, the ACC/AHA guideline recommends antihypertensive drug therapy for only the approximately 30% of adults with stage 1 hypertension who are at increased absolute CVD risk (preexisting CVD or 10-year atherosclerotic CVD [ASCVD] risk ≥10%) (5). All other adults with stage 1 hypertension should be treated with nonpharmacologic therapy (primarily lifestyle modification). Finally, the BP goal for antihypertensive therapy is now less than 130/80 mm Hg, a 10–mm Hg decrease from the JNC 7 goal of less than 140/90 mm Hg.

The print version of the 2017 ACC/AHA guideline is 116 pages long and contains 15 sections, 106 recommendations, 448 supporting data tables, and approximately 1000 references (3). How can busy practicing clinicians navigate this document efficiently and productively? First, the guideline is organized into "knowledge chunks" that are headed by a set of related recommendations on a topic, followed by a topic synopsis, recommendation-specific supporting text, tables, and algorithms that are color-coded for the class (strength) of recommendation. References that are pertinent to the specific topic are listed at the end of each section for easy viewing. Thus, clinicians with specific questions can obtain answers rapidly. Second, an executive summary (a condensed version of the guideline) is also available (6). Third, a guideline synopsis that summarizes the most important recommendations for practicing clinicians is published in this issue (7).

The 2017 ACC/AHA guideline emphasizes lifestyle modification as the cornerstone of therapy, regardless of whether antihypertensive drug therapy is used. The following lifestyle changes are recommended with the highest importance and quality of evidence: 1) weight loss in adults who are overweight or obese (expected BP reduction of about 1 mm Hg per kilogram of weight lost); 2) a heart-healthy diet, such as the DASH (Dietary Approaches to Stop Hypertension) diet (expected BP reduction of about 11 mm Hg); 3) dietary sodium reduction (expected BP reduction of about 5 mm Hg for each 1-g reduction in sodium intake); 4) dietary potassium supplementation (expected BP reduction of about 5 mm Hg with intake of 3.5 to 5 g/d); 5) increased physical activity with a structured exercise program (expected BP reduction of about 5 mm Hg for 90 to 120 minutes of aerobic exercise per week); and 6) abstinence from or moderation in alcohol consumption (≤1 standard drink per day for women and ≤2 standard drinks per day for men). A healthy lifestyle is recommended for all adults, and nonpharmacologic therapy alone is recommended for those with elevated BP, as well as the vast majority of adults who had prehypertension per the JNC 7 but are newly classified as hypertensive according to the ACC/AHA guideline (5). Because addition of antihypertensive drug therapy is restricted to patients who have high CVD risk or stage 2 hypertension, the ACC/AHA guideline increases the proportion of adults with hypertension for whom antihypertensive drug therapy is recommended by only about 1.9% compared with the JNC 7 (5).

We hope that the 2017 ACC/AHA guideline will stimulate renewed efforts to engage adults in lifestyle modification. In addition to the extensive discussion of nonpharmacologic interventions in Section 6 of the guideline, Data Supplement G provides examples of strategies to promote lifestyle modification in adults with hypertension (3, 6). Environmental risk factors have

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a major influence on BP and are a root cause of hypertension in contemporary American society. Successful efforts to improve lifestyle would not only decrease BP-related CVD risk but would also contribute to prevention of nonhypertensive CVD (8).

The 2017 ACC/AHA guideline provides an opportunity for adults to know and contribute to managing their CVD risk. A 13.7% increase in the proportion of adults who are newly classified as having stage 1 hypertension has been estimated under the ACC/AHA guideline compared with the JNC 7 (5). Risk assessment for ASCVD is recommended to make antihypertensive drug treatment decisions in adults with stage 1 hypertension. The recommended ASCVD risk calculator is available online (http://tools.acc.org/ASCVD-Risk-Estimator) or through a mobile phone app. Loading the necessary information takes less than a minute, and the 10-year ASCVD risk is immediately displayed. This information can serve as a motivating force for patients and can help foster a partnership with the clinician.

The 2017 ACC/AHA guideline strongly emphasizes use of population-based health system approaches to improve BP control (3). These include antihypertensive medication adherence strategies, structured team-based care interventions, electronic health records and patient registries, health information technology–based strategies, telehealth interventions, performance measures, and quality improvement strategies to improve care. Useful online appendices include team-based care suggestions, with roles and responsibilities for each team member, examples of telehealth strategies and technologies, and online quality improvement resources for BP control.

We hope that the 2017 ACC/AHA hypertension guideline will be a valuable resource for clinicians and health systems and will contribute to the prevention of CVD and stroke for both individuals and society.

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