Thinking Beyond New Clinical Guidelines: Update in Hypertension

Benjamin R. Griffin, MD, and Carrie A. Schinstock, MD

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Abstract

Hypertension is one of the most common conditions managed by generalists and is a major risk factor for multiple conditions. Surrounded by great debate, the committee appointed to the Eighth Joint National Committee published their suggestions for new hypertension treatment guidelines in early 2014. We suggest a new target blood pressure (BP) for the general population older than 60 years of less than 150/90 mm Hg, up from less than 140/90 mm Hg as recommended by the Seventh Joint National Committee, and in diabetic patients, a goal of less than 140/90 mm Hg, up from the Seventh Joint National Committee recommendation of less than 130/80 mm Hg. Regardless of the BP target recommendations suggested by the Eighth Joint National Committee and other organizations, obtaining accurate BP readings and recognizing white-coat and masked hypertension is imperative. Home and ambulatory BP monitoring are useful tools in addition to proper in-office BP readings. The optimal care of the hypertensive patient involves accurate BP characterization, careful use of guidelines, and good clinical judgment.

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Hypertension (HTN) is the most common chronic condition seen by primary care physicians, affecting approximately 78 million people in the United States.[1] It is a risk factor for coronary artery disease, congestive heart failure, stroke, end-stage renal disease, and peripheral vascular disease.[2-4] Several studies have found that from a blood pressure (BP) as low as 110 mm Hg systolic, there is a direct linear relationship between BP and cardiovascular events[2,3] and between BP and renal disease.[3,4] Randomized controlled trials have revealed that a systolic BP decrease as small as 10 mm Hg can reduce the risk of cardiovascular or stroke death.[5] However, establishing optimal BP treatment targets has been

From the Department of Internal Medicine (B.R.G., C.A.S.) and Division of Nephrology and Hypertension (C.A.S.), Mayo Clinic, Rochester, MN.

difficult. Clinical trials have not consistently found that lowering BP with medications achieves the same outcomes as those seen in epidemiological observations.[6,7] Regardless, BP control in the general population is suboptimal, as only 50% of hypertensive individuals have appropriate BP control with treatment.[8] Further complicating the issue are growing bodies of evidence suggesting that in-office BP measurements inadequately reflect a patient's true BP status[9] and that antihypertensive therapy can lead to serious adverse effects in certain populations, especially the elderly.[10]

Several organizations have developed guidelines using a combination of expert opinion and evidence to aid the clinician in treatment decisions.[11-14] The recently released guidelines from the committee appointed to the Eighth Joint National Committee (JNC-8), in particular, have met with considerable debate.[15-17] The purpose of this review is to summarize these new guidelines and the issues surrounding them. We will also provide information regarding accurate BP measurement and the risks of white-coat HTN (WCH) and masked HTN. Lastly, we will provide recommendations on the appropriate use of home BP monitoring (HBPM) and ambulatory BP monitoring (ABPM).

THE DEBATE SURROUNDING THE JNC-8 RECOMMENDATIONS

The recommendations of the Seventh Joint National Committee (JNC-7) were released in 2003 and remained in place for over a decade.[18] Since that time, several important studies on HTN have been published, and the Institute of Medicine has developed standards for developing trustworthy clinical guidelines.[19] These standards include a systematic review of the available literature, transparency, the inclusion of multidisciplinary experts, and revision if necessary.[19] The JNC-8 was appointed in 2008 by the National Heart, Lung, and Blood Institute (NHLBI) and was tasked with reviewing the literature and providing updated recommendations. In June 2013, the NHLBI elected to discontinue their work in developing guidelines and refocus their efforts on supporting the development of systematic reviews to be used by major subspecialty organizations in guideline development.[20] However, the members appointed to the JNC-8 ultimately decided to publish their work in *JAMA* rather than involve major subspecialty organizations in the field of HTN, most notably the American Heart Association and the American College of Cardiology, in the review or publication of the document.[14] Additionally, several members of the committee, specifically 1 member from the National Institute of Diabetes and Digestive and Kidney Diseases and 2 from the NHLBI, withdrew authorship from the published document before its release for undisclosed reasons.[14]

Critics of the committee's approach have concern about the potential for bias in the recommendations because important stakeholders were not involved, most notably the American College of Cardiology and the American Heart Association. Nevertheless, in contrast to the methods for JNC-7 development, these guidelines were developed with strict adherence to the Institute of Medicine standards. Only large (>100 patients) randomized controlled trials with long-term follow-up (>1 year) were considered for recommendations.[14] However, these strict inclusion criteria led the authors to disregard all nonrandomized and epidemiological studies, which account for over 99% of the literature in the HTN field.

The long-term implication of these guidelines is unclear. The proportion of older adults who meet the threshold for needing BP treatment will decrease with the implementation of the JNC-8 recommendations.[21] One of the most controversial differences between the JNC-7 and JNC-8 guidelines is the increase in BP target for the elderly and in those with diabetes or chronic kidney disease (CKD).[16] Critics have asserted that the limited evidence from randomized controlled trials does not provide reason to change the JNC-7 guidelines.[16] Furthermore, concern has been raised about the discrepancy between BP treatment goals and achieved BP that already exists. Thus, increasing the BP target further could potentially negatively impact cardiovascular outcomes.[16]

Regardless of the debate surrounding the updated set of guidelines, it is important to remember that they should not be a substitute for good clinical judgment. Clinicians are increasingly less likely to deviate from guidelines, likely because they may be linked to "performance measures" in the future. However, individual patients and unique circumstances may

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