Sorting It Out: What JNC 8 Is and What It Is Not

Shannon Finks, PharmD, FCCP, BCPS, AQ-Cardiology,
and Toni L. Ripley, PharmD, FCCP, BCPS, AQ-Cardiology

SUMMARY

The landscape for hypertension guideline development and dissemination has changed. The intense debate surrounding the recent JNC 8 publication obscures the value this guideline offers to providers managing hypertension. Recommendations published by the panel appointed to JNC 8, when interpreted and applied as intended, can indeed guide hypertension management. The purpose of this commentary is to pare down what the JNC 8 publication is and what is not, so as to transcend the controversy and foster application of these guidelines to clinical practice.

J Manag Care Pharm. 2015;21(2):110-12

Copyright© 2015, Academy of Managed Care Pharmacy. All rights reserved.

The National Heart Lung and Blood Institute (NHLBI) has provided comprehensive guidelines for hypertension prevention, diagnosis, and treatment since the 1970s, with the last guidelines published in 2003.¹ In 2008, the NHLBI commissioned the Eighth Joint National Committee (JNC 8) in preparation for the next iteration of guidelines. However, in 2013, the NHLBI announced that they would transfer guideline development to external professional organizations, which essentially disbanded the JNC 8 writing committee.^{2,3} Because the JNC 8 panel had completed its systematic review and developed recommendations consistent with its given task, and because the transfer of guideline development was expected to cause additional delays in availability of contemporary guidelines, the panel published its recommendations in the 2014 Evidence-Based Guideline for the Management of High Blood Pressure in Adults: Report from the Panel Members Appointed to JNC 8.⁴ The JNC 8 publication subsequently became embroiled in controversy.⁵⁻⁸ The intense debate surrounding the JNC 8 recommendations obscures the value that this publication offers to providers managing hypertension.

JNC 8, when interpreted and applied as intended, can indeed guide hypertension management. This commentary summarizes what the JNC 8 publication is and what it is not so as to foster application of these guidelines to clinical practice.

What JNC 8 Is

JNC 8 is one of several contemporary hypertension recommendations recently published.

Three hypertension guidelines were published between November 2013 and January 2014. The American Heart Association (AHA)/American College of Cardiology (ACC) and

Centers for Disease Control published a treatment algorithm for hypertension recommendations in November 2013.⁹ Shortly after, in December 2013, the American Society of Hypertension published guidelines jointly with the International Society of Hypertension.¹⁰ This was followed by the JNC 8 recommendations, which were released online in December 2013.⁴ The simultaneous publication of 3 hypertension guidelines is rare. The risk of multiple guideline publications over 3 months for 1 diagnosis is that busy clinicians, already confronted with information overload, will have limited time to adequately appraise the quality of the recommendations.⁵

JNC 8 is different from previous JNC reports.

The JNC 8 panel adhered to the Institute of Medicine's (IOM) call to develop guidelines using a consistent process in order to foster development of high-quality, trustworthy products.^{4,11,12} Some key changes in JNC 8 include use of a systematic review procedure for data identification and extraction and incorporation of external reviewers. Another notable change is the inclusion of only randomized controlled trials (RCTs) as the basis for JNC 8's recommendations. These changes have been received with mixed reviews from the medical community and have been the focal point of criticism and praise.⁶⁻⁸ Indeed, these process changes distinguish JNC 8 from prior JNC reports, as well as from other contemporary hypertension guidelines.

JNC 8 is restricted to 3 critical questions about hypertension management.

The JNC 8 writing committee focused its recommendations on the areas of hypertension management that were considered to be high priority. The committee selected 3 questions and provided recommendations to these questions rather than provision of a set of all-encompassing guidelines.⁴ The 3 critical questions that the JNC 8 writing committee evaluated are as follows:

1. In adults with hypertension, does initiating antihypertensive pharmacologic therapy at specific blood pressure (BP) thresholds improve health outcomes?
2. In adults with hypertension, does treatment with antihypertensive pharmacologic therapy to a specified BP goal lead to improvements in health outcomes?
3. In adults with hypertension, do various antihypertensive drugs or drug classes differ in comparative benefits and harms on specific health outcomes?

JNC 8 is the first contemporary hypertension guideline to apply only RCTs to its recommendations.

The evidence reviewed by the panel appointed to JNC 8 included only RCTs in order to provide strong recommendations that were based on robust evidence.⁴ Because other guidelines include observational studies, meta-analyses, and systematic reviews, discordant recommendations should be expected, since the evidence reviewed is not parallel.^{1,9,10,13} Recognition that different evidence was evaluated to form the recommendations may allay frustration regarding discordant conclusions. Whether reviewing only RCTs or reviewing the evidence in total is preferred for guideline development is a complex question. One advantage of using only RCTs for recommendations is that the quality of the data is strong; therefore, the recommendations can be made with confidence. However, a well-known disadvantage of restricting evidence is that exclusion of non-RCT data risks application of an “all-or-none” approach to literature assessment and potentially disregards the totality of the available evidence. The more traditional approach to development of guideline recommendations includes level-of-evidence statements to provide transparency about the quality of evidence supporting the recommendation, which mitigates risk of incorporating non-RCT data.

What JNC 8 Is Not

JNC 8 is not an officially endorsed, sanctioned set of guidelines.

Importantly, although the JNC 8 writing panel retained the “JNC” title, its recommendations are not endorsed by the NHLBI as were the previous JNC reports.⁴ While initially commissioned to provide updated hypertension guidelines by the NHLBI, the decision to not sanction or commission recommendations by the panel appointed to JNC 8 was made after the committee’s work had essentially been completed. The JNC 8 panel chose to publish its findings independently to provide timely recommendations while the new official guidelines are being developed.⁴ The distinction that JNC 8 is not endorsed, while prior JNC reports have been is important to recognize and leads to the next point.

JNC 8 is not the official hypertension guideline that replaces JNC 7.

When the NHLBI announced that it would transfer guideline development to external organizations, the AHA and ACC jointly accepted responsibility for this task.³ It is anticipated that the official AHA/ACC guidelines that will replace JNC 7 will be made available in 2015.¹⁴

JNC 8 is not congruent with other hypertension guidelines.

Because the JNC 8 writing committee included only RCTs, discordance exists between the JNC 8 and other recently published guidelines.^{4,9,10,13} The most high-profile example of this is in regards to JNC 8’s recommendation to relax the goal

systolic BP for patients aged between 60 and 79 years to <150 mm Hg instead of <140 mm Hg. Indeed, no RCT exists that prospectively evaluated clinical outcomes in patients targeted to a systolic BP of <140 mm Hg compared with placebo or compared with a target of <150 mm Hg. Although the JNC 8 recommendation is criticized, the recommendation from other guidelines to target systolic BP to <140 mm Hg in patients aged between 60 and 79 years is largely based on observational, epidemiological, and post hoc analyses.^{9,10,13} Thus, the lack of congruence between the guidelines for this particular example can be explained by the process utilized to develop the recommendation.

JNC 8 is not rivaling minority or dissenting views.

In the JNC 8 publication, the writing committee disclosed when panel members were unable to reach agreement.⁴ The most notable recommendation in which this occurred was with regard to the relaxing the systolic BP goal in patients aged between 60 and 79 years. Here, the JNC 8 publication acknowledged the lack of unanimity among the panel members. To maximize transparency, those with the “minority view” published a detailed review of their perspective.¹³ The process by which the minority opinion has been made known shows that the JNC 8 writing committee remained true to the recommendation from the IOM to add transparency to the process for guideline development, even when publishing recommendations unofficially.

Conclusions

The landscape of hypertension guidelines has and will continue to change. The NHLBI-endorsed guidelines (JNC 1 through 7) are no longer going to be the clinician’s foremost resource for all-inclusive hypertension prevention, diagnosis, and management recommendations. Adoption of the new guideline process naturally requires an adjustment period; however, acclimation to these changes has been complicated by concurrent publication of other hypertension guidelines that did not limit evidence review to only RCTs. Many question how to apply these new recommendations given that highly visible criticism, including a call to retract the JNC 8 publication, implies that the JNC 8 recommendations may be incomplete and myopic and introduces cynicism towards the process and product.

However, it is our assertion that the JNC 8 recommendations represent advancement in guideline development—introducing systematic review and peer review into the process augments reliability. Because JNC 8 recommendations were developed with a rigorous process, even the controversial recommendations (e.g., BP goals) should be appraised in the context of the total body of evidence and the needs of the individual patient. Conversely, the relegation of recommendations to 3 critical questions means that JNC 8 cannot exist as a

stand-alone guideline. It is unknown if the upcoming “official” guidelines from the ACC/AHA will incorporate the rigorous process from JNC 8 and the comprehensive recommendations offered by the other current guidelines. For now, JNC 8 provides an unprecedented set of discrete recommendations that can enhance clinicians’ hypertension management.

Authors

SHANNON FINKS, PharmD, FCCP, BCPS, AQ-Cardiology, is Associate Professor, Clinical Pharmacy, College of Pharmacy, University of Tennessee, Memphis, and Toni L. Ripley, PharmD, FCCP, BCPS, AQ-Cardiology, is Associate Professor, Department of Pharmacy: Clinical and Administrative Sciences, University of Oklahoma College of Pharmacy, Oklahoma City.

AUTHOR CORRESPONDENCE: Shannon Finks, PharmD, FCCP, BCPS, AQ-Cardiology, Associate Professor, Clinical Pharmacy, College of Pharmacy, University of Tennessee, 881 Madison Ave., Rm. 459, Memphis, TN 38163. Tel.: 901.448.3701; E-mail: sfinks@uthsc.edu.

DISCLOSURES

The authors have no conflicts of interest to declare.

Concept and design primarily contributed by Finks, along with Ripley. Both authors contributed equally to data collection and interpretation and manuscript writing and revision.

REFERENCES

1. Chobanian AV, Bakris GL, Black HR, et al. The seventh report of the Joint National Committee on prevention, detection, evaluation, and treatment of high blood pressure: the JNC 7 report. *JAMA*. 2003;289(19):2560-72.
2. Gibbons GH, Shurin SB, Mensah GA, Lauer MS. Refocusing the agenda on cardiovascular guidelines: an announcement from the National Heart, Lung, and Blood Institute. *Circulation*. 2013;128(15):1713-15. Available at: <http://circ.ahajournals.org/content/128/15/1713.long>. Accessed December 26, 2014.
3. Gibbons GH, Harold JG, Jessup M, Robertson RM, Oetgen WJ. The next steps in developing clinical practice guidelines for prevention. *Circulation*. 2013;128(15):1716-17.
4. James PA, Oparil S, Carter BL, et al. 2014 evidence-based guideline for the management of high blood pressure in adults: report from the panel members appointed to the Eighth Joint National Committee (JNC 8). *JAMA*. 2014;311(5):507-20.
5. Bastian H, Glasziou P, Chalmer I. Seventy-five trials and eleven systematic reviews a day: how will we ever keep up? *PLoS Med*. 2010;7(9):e1000326.
6. Peterson ED, Gaziano JM, Greenland P. Recommendations for treating hypertension: what are the right goals and purposes? *JAMA*. 2014;311(5):474-76.
7. Sox HC. Assessing the trustworthiness of the guideline for management of high blood pressure in adults. *JAMA*. 2014;311(5):472-74.
8. Cundiff DK. A call to retract the JNC-8 hypertension guidelines. January 4, 2014. Available at: <http://www.kevinmd.com/blog/post-author/david-k-cundiff>. Accessed December 26, 2014.
9. Go AS, Bauman MA, Coleman King SM, et al. An effective approach to high blood pressure control: a science advisory from the American Heart Association, the American College of Cardiology, and the Centers for Disease Control and Prevention. *Hypertension*. 2014;63(4):878-85.
10. Weber MA, Schiffrin EL, White WB, et al. Clinical practice guidelines for the management of hypertension in the community. A statement by the American Society of Hypertension and the International Society of Hypertension. *J Hypertens*. 2014;32(1):3-15.
11. Institute of Medicine. *Clinical Practice Guidelines We Can Trust*. Washington, DC: National Academies Press; 2011. Available at: <http://www.iom.edu/Reports/2011/Clinical-Practice-Guidelines-We-Can-Trust.aspx>. Accessed December 26, 2014.
12. Institute of Medicine. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, DC: National Academies Press; 2001. Available at: <http://www.iom.edu/Reports/2001/Crossing-the-Quality-Chasm-A-New-Health-System-for-the-21st-Century.aspx>. Accessed December 26, 2014.
13. Wright JT, Fine LJ, Lackland DT, Ogedegbe G, Himmelfarb CRD. Evidence supporting a systolic blood pressure goal of less than 150 mm Hg in patients aged 60 years or older: the minority view. *Ann Intern Med*. 2014;160(7):499-503.
14. Kotchen TA. Developing hypertension guidelines: an evolving process. *Am J Hypertens*. 2014;27(6):765-72.