Editorial

James V. Felicetta, MD
Editor-in-Chief

Treating Hypertension: How Low Should We Go?

I am bothered a great deal when health care practitioners across the board tell me that their goal in treating hypertension is to get the patient's blood pressure (BP) "as low as possible." Now, you may be thinking, "What's so bad about that? Isn't it an inherently noble goal to reduce the BP as much as possible?"

Actually, no, and no with thunder! Although by doing so I may run the risk of being considered an obstructionist, or, at best, a pretentious academic sophist, I feel obligated to speak my mind on this issue—one on which I can claim at least a modest degree of expertise. The truth of the matter is that when practitioners talk about lowering BP to the maximum extent possible, they are confusing epidemiologic data with the risk and benefit considerations of aggressive therapeutic intervention in patients with hypertension.

First, let's pay due homage to the epidemiologic evidence, which strongly supports the notion that the lower the native—or untreated—BP, the lower the risk of cardiovascular morbidity and mortality. There's absolutely no question that the lower your God-given, natural BP, the lower your probability of developing a stroke, myocardial infarction, aortic dissection, or other adverse outcomes associated with hypertension.

We must be careful, however, not to extrapolate from this concept that the more you can drive down the BP of a patient with hypertension, the better off he or she will be. Understanding the nature of this slippery slope begins with recognizing the vast difference between an individual whose BP is normally low and one whose BP has been artificially lowered using an aggressive pharmacologic intervention—a variant of a prestidigitator's parlor trick. There are fundamental physiologic reasons why one person's natural BP is elevated while another's is within or below the normal range. It is complete medical folly—and indeed, medical arrogance—to suppose that simply making the numbers match gives a patient with artificially lowered BP the same cardiovascular risk profile as a patient with naturally normal BP.

What heresy! Do I have evidence to support this seemingly radical view? A closer look reveals that my perspective is actually much closer to mainstream thinking than one might first assume. The Hypertension Optimal Treatment (HOT) trial, for instance, tested the hypothesis that tighter control of diastolic BP would lead to lower rates of cardiovascular morbidity and mortality.[1] Three different diastolic BP goals were established: 90 mm Hg, 85 mm Hg, and 80 mm Hg. A no-brainer, right? Clearly the patients assigned to the lower goals should do better. Au contraire: There was no difference in cardiovascular event rates—with the important exception of the diabetic subset, who did show modestly lower cardiovascular event rates with tighter diastolic control.[1]

Aren't these results counterintuitive? Maybe not when you consider that there is no "free lunch" in medicine. When you administer potent antihypertensive medications to lower risk patients, you run a very real risk of exposing them to adverse reactions and metabolic effects, as well as other complications that can reduce or perhaps even cancel out any potential benefits of therapy.

Several prominent organizations—including the Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Presure[2]; the American Heart Association (AHA), and the National Kidney Foundation (NKF)—have developed selective treatment guidelines for patients who can benefit from a BP goal more stringent than the standard recommendation of less than 140/90 mm Hg. If there is diabetes or chronic renal insufficiency (or coronary artery disease, according to the AHA), more aggressive BP lowering to below 130/80 mm Hg is recommended.[2,3]

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In patients with known renal insufficiency and significant proteinuria, the NKF recommends aiming below 125/75 mm Hg.[4]

Apart from these specific guidelines, though, there is no evidence to date to suggest that driving the pressure much below the recommended goals will be of significant value. Since medicine is always a work in progress, future clinical trials may change the calculus. But for the time being, let's resist the notion that lower is always better. ●

Author disclosures

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REFERENCES

1. Hansson L, Zanchetti A, Carruthers SG, et al; for HOT Study Group. Effects of intensive blood-pressure lowering and low-dose aspirin in patients with hypertension: Principal results of the Hypertension Optimal Treatment (HOT) randomised trial. *Lancet*. June 13, 1998;351:1755–1762.
2. Chobanian AV, Bakris GL, Black HR, et al; and Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. National Heart, Lung, and Blood Institute; National High Blood Pressure Education Program Coordinating Committee. Seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. *Hypertension*. 2003;42(6):1206–1252.
3. Pearson TA, Blair SN, Daniels SR, et al. AHA guidelines for primary prevention of cardiovascular disease and stroke: 2002 update: Consensus panel guide to comprehensive risk reduction for adult patients without coronary or other atherosclerotic vascular diseases. American Heart Association Science Advisory and Coordinating Committee. *Circulation*. 2002;106(3):388–391.
4. National Kidney Foundation/Kidney Disease Outcomes Quality Initiative. K/DOQI clinical practice guidelines on hypertension and antihypertensive agents in chronic kidney disease. http://www.kidney.org/professionals/KDOQI/guidelines_bp/index.htm. Published 2004. Accessed September 25, 2008.