

Editorial

Optimal Systolic Blood Pressure Goal in Persons Aged 60 Years and Older

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EDITORIAL

The American College of Cardiology Foundation/American Heart Association 2011 expert consensus document on hypertension in the elderly developed in collaboration with the American Academy of Neurology, the American Geriatrics Society, the American Society for Preventive Cardiology, the American Society of Hypertension, the American Society of Nephrology, the Association of Black Cardiologists, and the European Society of Hypertension recommended that the systolic blood pressure be lowered to less than 140 mm Hg in persons aged 60-79 years and to 140 to 145 mm Hg if tolerated in adults aged 80 years and older [1]. I strongly support these guidelines based on clinical trial data, especially from the Systolic Hypertension in the Elderly trial [2-4] and from the Hypertension in the Very Elderly trial [5].

The European Society of Hypertension/European Society of Cardiology 2013 guidelines for management of hypertension recommend lowering the systolic blood pressure to less than 140 mm Hg in persons aged 60 to 79 years [6]. In persons aged 80 years and older with a systolic blood pressure of 160 mm Hg or higher, the systolic blood pressure should be lowered to between 140-150 mm Hg provided they are in good physical and mental conditions [6].

The 2013 Eighth Joint National Committee (JNC 8) guidelines for management of hypertension recommend lowering the systolic blood pressure in persons aged 60 years or older to less than 150 mm Hg if they do not have diabetes mellitus or chronic kidney disease and to less than 140 mm Hg if they have diabetes mellitus or chronic kidney disease [7]. I concur with the minority view from JNC 8 which recommends that the systolic blood pressure goal in persons aged 60 to 79 years with hypertension without diabetes mellitus or chronic kidney disease should be less than 140 mm Hg [8].

The 2013 Canadian Hypertension Education Program guidelines [9], the 2011 United Kingdom guidelines [10], the 2014 American Society of Hypertension/International Society of Hypertension guidelines [11], the Association of Black Cardiologists [12], and the Working Group on Women's Cardiovascular Health [12] also support a systolic blood pressure goal of less than 140 mm Hg in persons aged 60 to 79 years and of less than 150 mm Hg in persons aged 80 years and older. Recent

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data from the Reasons for Geographic and Racial Differences in Stroke (REGARDS) study also support a systolic blood pressure goal of less than 140 mm Hg in persons older than 75 years [13].

Older persons are currently being undertreated for hypertension [1]. If the JNC 8 panel recommendations are used, 6 million adults in the United States aged 60 years and older would be ineligible for treatment with antihypertensive drugs, and treatment intensity would be decreased for an additional 13.5 million older persons [14], leading to increased incidences of coronary events, stroke, heart failure, cardiovascular mortality, and other adverse events associated with inadequate control of hypertension. The Association of Black Cardiologists is concerned that the JNC 8 recommendations will endanger more than 36 million American aged 60 years and older with hypertension, with a disproportionate negative effect on African-Americans who are at greater risk for coronary heart disease, stroke, chronic kidney disease, and heart failure [12]. The Working Group on Women's Health also point out that the older hypertensive population is primarily women, and that older women generally have inadequate control of hypertension, and that approximately 40% of older women with poor blood pressure control are African-American women, who have the highest risks for stroke, heart failure, and chronic kidney disease [12].

Among 8,354 patients aged ≥ 60 years with coronary artery disease in the International Verapamil SR Trandolapril (INVEST) study, a baseline systolic blood pressure of ≥ 150 mm Hg, and 22,308 patient years of follow-up, 57% had a systolic blood pressure lower than 140 mm Hg, 21% had a systolic blood pressure of 140 to 149 mm Hg, and 22% had a systolic blood pressure of ≥ 150 mm Hg [15]. The primary outcome of all-cause mortality, nonfatal myocardial infarction, or nonfatal stroke occurred in 9.36% of patients with a systolic blood pressure below 140 mm Hg, in 12.71% of patients with a systolic blood pressure of 140-149 mm Hg, and in 21.3% of patients with a systolic blood pressure ≥ 150 mm Hg ($p < 0.0001$) [15]. Using propensity score analyses, compared with a systolic blood pressure below 140 mm Hg, a systolic blood pressure of 140 to 149 mm Hg increased cardiovascular mortality 34% ($p = 0.04$), total stroke 89% ($p = 0.002$), and nonfatal stroke 70% ($p = 0.03$) [15]. Compared with a systolic blood pressure below 140 mm Hg, a systolic blood pressure of ≥ 150 mm Hg increased the primary

outcome 82% ($p < 0.0001$), all-cause mortality 60% ($p < 0.0001$), cardiovascular mortality 218% ($p < 0.0001$), and total stroke 283% ($p < 0.0001$) [15].

All older persons being treated for hypertension should have their blood pressure also measured with the person standing for 1 to 3 minutes to evaluate for postural hypotension [1]. Orthostatic hypotension is defined as a reduction in systolic blood pressure of ≥ 20 mm Hg or in diastolic blood pressure of ≥ 10 mm Hg within 3 minutes of standing and can result from blunting the carotid baroreflex due to increased stiffness of the carotid arteries [1]. Orthostatic hypotension may result in falls, syncope, and fractures.

In conclusion, on the basis of the available data, I support the American College of Cardiology Foundation/American Heart Association 2011 expert consensus document on hypertension in the elderly which recommended that the systolic blood pressure be lowered to below 140 mm Hg in persons aged 60 to 79 years 80 years and to 140 to 145 mm Hg if tolerated in adults aged 80 years and older [1]. However, I would also like to point out that randomized clinical trial data are not available on treatment of hypertension in frail elderly persons [16].

REFERENCES

1. Aronow WS, Fleg JL, Pepine CJ, Artinian NT, Bakris G, Brown AS, et al. ACCF/AHA 2011 expert consensus document on hypertension in the elderly: a report of the American College of Cardiology Foundation Task Force on Clinical Expert Consensus Documents. Developed in collaboration with the American Academy of Neurology, American Geriatrics Society, American Society for Preventive Cardiology, American Society of Hypertension, American Society of Nephrology, Association of Black Cardiologists, and European Society of Hypertension. *J Am Coll Cardiol*. 2011; 57: 2037-2114.
2. [No authors listed]. Prevention of stroke by antihypertensive drug treatment in older persons with isolated systolic hypertension. Final results of the Systolic Hypertension in the Elderly Program (SHEP). SHEP Cooperative Research Group. *JAMA*. 1991; 265: 3255-3264.
3. Perry HM Jr, Davis BR, Price TR, Applegate WB, Fields WS, Guralnik JM, et al. Effect of treating isolated systolic hypertension on the risk of developing various types and subtypes of stroke: the Systolic Hypertension in the Elderly Program (SHEP). *JAMA*. 2000; 284: 465-471.
4. Kostis JB, Davis BR, Cutler J, Grimm RH Jr, Berge KG, Cohen JD, et al. Prevention of heart failure by antihypertensive drug treatment in older persons with isolated systolic hypertension. SHEP Cooperative Research Group. *JAMA*. 1997; 278: 212-216.
5. Beckett NS, Peters R, Fletcher AE, Staessen JA, Liu L, Dumitrascu D, et al. Treatment of hypertension in patients 80 years of age or older. *N Engl J Med* 2008; 358: 1887-1898.
6. Mancia G, Fagard R, Narkiewicz K, Redon J, Zanchetti A, Bohm M, et al. 2013 ESH/ESC guidelines for the management of arterial hypertension: the Task Force for the Management of Arterial Hypertension of the European Society of Hypertension (ESH) and of the European Society of Cardiology (ESC). *Eur Heart J* 2013; 34: 2159-2219.
7. James PA, Oparil S, Carter BL, Cushman WC, Dennison-Himmelfarb C. 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: 507-520.
8. Wright JT Jr, Fine LJ, Lackland DT, Ogedegbe G, Dennison Himmelfarb CR. 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: 499-503.
9. Hackam DG, Quinn RR, Ravani P, Rabi DM, Dasgupta K, Daskalopoulou SS, et al. The 2013 Canadian Hypertension Education Program recommendations for blood pressure measurement, diagnosis, assessment of risk, prevention, and treatment of hypertension. *Can J Cardiol* 2013; 29: 528-542.
10. National Institute for Health and Clinical Excellence. Hypertension: clinical management of primary hypertension in adults. London: National Institute for Health and Clinical Excellence. 2011
11. Weber MA, Schiffrin EL, White WB, Mann S, Lindholm LH, Kenerson JG 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 Clin Hypertens (Greenwich)*. 2014; 16: 14-26.
12. Krakoff LR, Gillespie RL, Ferdinand KC, Fergus IV, Akinboboye O, Williams KA, et al. 2014 hypertension recommendations from the eighth joint national committee panel members raise concerns for elderly black and female populations. *J Am Coll Cardiol* 2014; 64: 394-402.
13. Banach M, Bromfield S, Howard G, Howard VJ, Zanchetti A, Aronow WS, et al. Association of systolic blood pressure levels with cardiovascular events and all-cause mortality among older adults taking antihypertensive medication. *Int J Cardiol* 2014; 176: 219-226.
14. Navar-Boggan AM, Pencina MJ, Williams K, Sniderman AD, Peterson ED. Proportion of US adults potentially affected by the 2014 hypertension guideline. *JAMA*. 2014; 311: 1424-1429.
15. Bangalore S, Gong Y, Cooper-DeHoff RM, Pepine CJ, Messerli FH. 2014 Eighth Joint National Committee Panel recommendation for blood pressure targets revisited: results from the INVEST study. *J Am Coll Cardiol* 2014; 64: 784-793.
16. Aronow WS. Multiple blood pressure medications and mortality among elderly individuals. *JAMA* 2015; 313: In press.

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