



## What Should the Systolic Blood Pressure Treatment Goal be in Patients Aged 60 Years and Older with Hypertension in 2016?

Wilbert S Aronow\*

Department of Medicine, Cardiology Division, New York Medical College, USA

\*Corresponding author: Wilbert S Aronow, MD, FACC, FAHA, Professor of Medicine, Cardiology Division, Westchester Medical Center, New York Medical College, Macy Pavilion, Room 141, Valhalla, NY 10595, USA, Tel: (914)-493-5311, Fax: (914)-235-6274, E-mail: [wsaronow@aol.com](mailto:wsaronow@aol.com)

The Hypertension in the Very Elderly Trial (HYVET) randomized 3,845 patients aged 80 years and older, mean age 83.6 years, with a systolic blood pressure (SBP) of  $\geq 160$  mmHg to indapamide plus perindopril if needed versus double-blind placebo [1]. The target SBP reached was 150 mmHg, and the lowest SBP reached was 143 mmHg. Median follow-up was 1.8 years. Compared to patients randomized to placebo, patients randomized to antihypertensive drug therapy had a 30% reduction in fatal or nonfatal stroke, a 39% reduction in fatal stroke, a 21% reduction in all-cause mortality, a 23% reduction in cardiovascular death, and a 64% reduction in heart failure [1].

On the basis of the available randomized clinical trial data including HYVET [1] and the Systolic Hypertension in the Elderly (SHEP) trial [2-4], the American College of Cardiology Foundation (ACCF)/American Heart Association (AHA) 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 (ASH), the American Society of Nephrology, the Association of Black Cardiologists, and the European Society of Hypertension recommended that the SBP be lowered to less than 140 mmHg in older persons younger than 80 years and to 140 to 145 mmHg if tolerated in adults aged 80 years and older [5].

The European Society of Hypertension/European Society of Cardiology 2013 guidelines for management of hypertension recommended lowering the SBP in older patients younger than 80 years with a SBP of 160 mmHg or higher to between 140-150 mmHg with consideration of a SBP less than 140 mmHg [6]. In patients older than 80 years with a SBP of 160 mmHg or higher, the SBP should be lowered to between 140-150 mmHg provided they are in good physical and mental conditions [6].

The 2013 Eighth Joint National Committee (JNC 8) guidelines for management of hypertension recommended lowering the SBP in patients aged 60 years or older to less than 150 mmHg if they did not have diabetes mellitus or chronic kidney disease and to less than 140 mmHg if they had diabetes mellitus or chronic kidney disease [7]. The minority view from JNC 8 recommended lowering the SBP goal in patients aged 60 years and older with hypertension to less than 140 mmHg [8].

The 2014 ASH/International Society of Hypertension guidelines recommended lowering the SBP to less than 140 mmHg in adults younger than 80 years [9]. In adults aged 80 years and older, these

guidelines recommended lowering the SBP to less than 150 mmHg unless these patients have diabetes mellitus or chronic kidney disease when a goal of less than 140 mmHg can be considered [9].

The Reasons for Geographic and Racial Differences in Stroke (REGARDS) study is an observational study of risk factors for stroke which includes 4,181 patients aged 55 to 64 years, 3,767 patients aged 65 to 74 years, and 1,839 patients aged 75 years and older (mean age 79.3 years) living in the stroke belt and stroke buckle regions of the United States and taking antihypertensive medication [10]. Median follow-up was 4.5 years for cardiovascular disease, 4.5 years for coronary heart disease, 5.7 years for stroke, and 6.0 years for all-cause mortality. Data from this study supported reducing the SBP to less than 140 mmHg in older persons [10].

The AHA/ACC/ASH 2015 guidelines on treatment of hypertension in adults with coronary artery disease guidelines recommended that the optimal SBP in adults with coronary artery disease should be less than 140 mmHg in older persons younger than 80 years and less than 150 mmHg in persons aged 80 years and older [11]. These guidelines also stated that a SBP goal of less than 130 mmHg may be appropriate in some patients with coronary artery disease [11].

The new guidelines for the management of patients with hypertension will be strongly influenced by the results from the Systolic Blood Pressure Intervention Trial (SPRINT) [12,13]. SPRINT randomized 9,361 patients with a SBP of 130-180 mmHg and an increased cardiovascular risk but without diabetes mellitus, history of stroke, symptomatic heart failure within the past 6 months, a left ventricular ejection fraction of less than 35%, and an estimated glomerular filtration rate less than 20 ml/min/1.73 m<sup>2</sup> to a SBP goal of less than 120 mmHg or less than 140 mmHg. The patients were aged 50 years and older with a mean age of 67.9 years. Of the 9,361 patients, 2,636 (28.2%) were aged 75 years and older (mean age 79.9 years). Of the patients aged 75 years and older, 30.9% were frail [13]. Median follow-up was 3.26 years for all patients [12] and 3.14 years in the group aged 75 years and older [13].

The primary composite outcome was myocardial infarction, other acute coronary syndrome, stroke, heart failure, or death from cardiovascular causes and was reduced 25% by intensive blood pressure treatment in the entire group [12] and by 34% in patients aged 75 years and older. All-cause mortality was reduced by 27% by intensive blood pressure treatment in the entire group [12] and by 33% in patients aged 75 years and older [13]. The number needed

to treat to reduce the primary outcome in patients aged 75 years and older was 27. The number needed to treat to reduce all-cause mortality in patients aged 75 years and older was 41 [13]. Heart failure was reduced by intensive blood pressure treatment 38% in the entire group [12] and by 38% in patients aged 75 years and older [13].

Serious adverse events were similar in both treatment groups [12,13]. In patient aged 75 years and older, the benefit of reducing the SBP to less than 120 mmHg was similar in frail and nonfrail persons [13].

Expert medical opinion will need to be used to decide what the optimal SBP goal should be in older persons with hypertension not included in the SPRINT trial. On the basis of data from the ACTION to Control Cardiovascular Risk in Diabetes Blood Pressure (ACCORD BP) trial [14-16], this author favors in older diabetics at increased cardiovascular risk a SBP goal of less than 130 mmHg or of less than 120 mmHg with more intensive monitoring for serious adverse events [17].

## Conflict of Interest

Dr. Aronow has no conflicts of interest.

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