Blood Pressure Guidelines: Consensus and Controversy

Miami Cardiac & Vascular Institute
15th Annual Cardiovascular Disease Comprehensive Symposium
From Prevention to Intervention
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Presenter Disclosure Information

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"Blood Pressure Guidelines: Consensus and Controversy"

FINANCIAL DISCLOSURE:
Institutional Grants: Lilly
Uncompensated Consulting: Takeda

The content does not necessarily represent the official views of the SPRINT Steering Committee, the NIH, the VA, or the U.S. government

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Major Randomized Trials Testing SBP Goals in General (Older) Populations Prior to SPRINT

<table>
<thead>
<tr>
<th>Study</th>
<th>Age</th>
<th>Number</th>
<th>Entry SBP</th>
<th>Goal SBP</th>
<th>Achieved SBP</th>
<th>Stroke</th>
<th>CVD</th>
<th>Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHEP</td>
<td>&gt;60</td>
<td>4,736</td>
<td>160-219</td>
<td>&lt;148</td>
<td>142</td>
<td>36%</td>
<td>32%</td>
<td>ns</td>
</tr>
<tr>
<td>Syst-Eur</td>
<td>&gt;60</td>
<td>4,695</td>
<td>160-219</td>
<td>&lt;150</td>
<td>151</td>
<td>42%</td>
<td>31%</td>
<td>ns</td>
</tr>
<tr>
<td>HYVET</td>
<td>&gt;80</td>
<td>3,845</td>
<td>160-199</td>
<td>&lt;150</td>
<td>144</td>
<td>ns</td>
<td>34%</td>
<td>ns</td>
</tr>
<tr>
<td>JATOS</td>
<td>65-85</td>
<td>4,418</td>
<td>&gt;160</td>
<td>&lt;140</td>
<td>136</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>VALISH</td>
<td>70-84</td>
<td>3,260</td>
<td>&gt;160</td>
<td>&lt;140</td>
<td>137</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
</tr>
</tbody>
</table>

SBP = systolic blood pressure; CVD = cardiovascular disease
JNC 8 Recommendation 1

- In the general population ≥60 years of age, initiate pharmacologic treatment to lower BP at SBP ≥150 mm Hg or DBP ≥90 mm Hg and treat to a goal SBP <150 mm Hg and goal DBP <90 mm Hg.
  - Strong Recommendation – Grade A
- Corollary Recommendation: In the general population ≥60 years of age, if pharmacological treatment for high BP results in lower achieved SBPs (for example, <140 mm Hg) and treatment is not associated with adverse effects on health or quality of life, treatment does not need to be adjusted.
  - Expert Opinion – Grade E

James, et al. JAMA. 2014;311:507-20

Pharmacologic Treatment of Hypertension in Adults Aged ≥60 Years to Higher Versus Lower BP Targets: A Clinical Practice Guideline From the ACP and the AAFP

- Recommendation 1: ...recommend that clinicians initiate treatment in adults aged ≥60 years with SBP persistently ≥150 mm Hg to achieve a target SBP <150 mm Hg to reduce the risk for mortality, stroke, and cardiac events. (Grade: strong recommendation, high-quality evidence).
- Recommendation 2: ...recommend that clinicians consider initiating or intensifying pharmacologic treatment in adults aged ≥60 years with a history of stroke or TIA to achieve a target SBP <140 mm Hg to reduce the risk for recurrent stroke. (Grade: weak recommendation, moderate-quality evidence).

Qaseem, et al. Ann Intern Med. Published online 17 Jan 2017

Pharmacologic Treatment of Hypertension in Adults Aged ≥60 Years to Higher Versus Lower BP Targets: A Clinical Practice Guideline From the ACP and the AAFP

- Recommendation 3: ...recommend that clinicians consider initiating or intensifying pharmacologic treatment in some adults aged ≥60 years at high cardiovascular risk, based on individualized assessment, to achieve a target SBP <140 mm Hg to reduce the risk for stroke or cardiac events. (Grade: weak recommendation, low quality evidence).
- ACP and AAFP recommend that clinicians select the treatment goals for adults aged ≥60 years based on a periodic discussion of the benefits and harms of specific BP targets with the patient.

Qaseem, et al. Ann Intern Med. Published online 17 Jan 2017
SPRINT Inclusion/Exclusion Criteria

- Age: ≥50 years old
- BP: systolic blood pressure: 130–180 mm Hg (treated or untreated)
- Additional cardiovascular disease (CVD) risk
  - Clinical or subclinical CVD (excluding stroke)
  - Chronic kidney disease (CKD), defined as eGFR 20–59 ml/min/1.73m^2
  - Framingham Risk Score for 10-year CVD risk ≥ 15%
  - Age ≥ 75 years
- Exclude for:
  - Stroke, Diabetes mellitus, Polycystic kidney disease, Congestive heart failure
  - Proteinuria >1g/d
  - CKD with eGFR <20 mL/min/1.73m^2 (MDRD)
  - Adherence concerns
  - Residing in nursing home or dementia Dx


SPRINT Research Question

Will CVD composite event rate be lower in intensive compared to standard SBP treatment (N = 9,361)?

Randomized Controlled Trial
Target Systolic BP

Intensive Treatment
Goal SBP < 120 mm Hg

Standard Treatment
Goal SBP < 140 mm Hg

SPRINT design details available at:
- ClinicalTrials.gov (NCT01206082)
BP Measurement in SPRINT

• Visit BP was the average of 3 seated office BP measurements obtained using an automated measurement device: Omron 907XL.
• Appropriate cuff size was determined by arm circumference.
• Participant was seated with back supported and arm bared and supported at heart level.
• Device was set to delay 5 minutes and then take/average 3 BP measurements, during which time participant refrained from talking.

Mean SBP

Average SBP (During Follow-up)

Standard: 134.6 mm Hg
Delta: 13.5 mm Hg
Intensive: 121.5 mm Hg

Average number of Antihypertensive medications

Number of participants

Systolic BP Distribution by Treatment Group

Most Recent Visit Per Participant
ERROR: undefined
OFFENDING COMMAND: en

STACK: