SPRINT, or False Start, Toward a Lower Universal Treated Blood Pressure Target in Hypertension

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Systolic Blood Pressure Intervention Trial (SPRINT) is a parallel group antihypertensive efficacy study, with randomized allocation to 2 groups: intensive treatment (target clinic systolic blood pressure [BP], 120 mm Hg) and standard treatment (target 140 mm Hg systolic BP), and with blinded outcome adjudication. Patient selection aimed to assemble a test hypertension population enriched for existing cardiovascular disease, chronic kidney disease, and patients aged >75 years, but with exclusion of diabetics. For the total population tested, in the intensively treated group a reduction in a composite cardiovascular disease end point (the primary outcome), was detected, but certainly not so commonly as to cancel out the major observed benefits. In this context, it is important to note a particular feature of the trial, the modest elevation in average run-in BP in SPRINT (averaging, 139.7 mm Hg), with a contingent modest BP fall to-target in the intensively treated patient group (18 mm Hg). The target of 120 mm Hg systolic established here may, perhaps, not be achievable in all patients, particularly those with much higher initial BP, who need greater BP reduction to achieve this target. In these, the level of serious adverse events might be prohibitively high. It could be a mistake to generalize this target BP to all hypertensive patients, especially for initial therapy of those severely affected.

The SPRINT trial is based on automated BP measurement in the clinic, and not on ambulatory BP measurements. Some might see this as a failing, but SPRINT joins a long line of historic antihypertensive drug trials using the simpler, and less exact BP measurement system. This might cause pause, as it is contrary to the arguments that discredit the continuing value of sphygmomanometer readings in the clinic, to the point where in the NICE (National Institute for Health and Clinical Excellence, United Kingdom) guidelines 24-hour ambulatory BP is required to make a diagnosis of hypertension.

Adverse effects were more frequent in the intensively treated group, as might be anticipated. Hypotension, syncopal episodes, acute kidney injury, and serum electrolyte abnormalities (lowered sodium and potassium) were more commonly detected, but certainly not so commonly as to cancel out the major observed benefits. In this context, it is important to note a particular feature of the trial, the modest elevation in average run-in BP in SPRINT (averaging, 139.7 mm Hg), with a contingent modest BP fall to-target in the intensively treated patient group (18 mm Hg). The target of 120 mm Hg systolic established here may, perhaps, not be achievable in all patients, particularly those with much higher initial BP, who need greater BP reduction to achieve this target. In these, the level of serious adverse events might be prohibitively high. It could be a mistake to generalize this target BP to all hypertensive patients, especially for initial therapy of those severely affected.

Has a new universal target BP now been established with SPRINT, a lower validated target than determined elsewhere? That is the crucial question. Or does the lower BP starting point in SPRINT, lower than in most trials, drive the emergence of this low target BP? Within BP on-entry tertiles for the trial, a trend did exist for there to be greater reductions in the primary outcome in the lower tertiles. In short, do we now have a new, lower therapeutic target in hypertension clinical care, or is the target SPRINT-specific? Should 120 mm Hg be the irrevocable target for those patients with an initial systolic BP of 170 mm Hg, say, or 200 mm Hg? My 45 years of clinical experience in the treatment of patients with more severe grades of hypertension lead me to doubt this.
Disclosures

None.

References


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Hypertension. 2016;67:266-267; originally published online November 9, 2015;
doi: 10.1161/HYPERTENSIONAHA.115.06735
Hypertension is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
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Print ISSN: 0194-911X. Online ISSN: 1524-4563

The online version of this article, along with updated information and services, is located on the World Wide Web at:
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