SPRINT Commentary

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

Murray Esler

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), and in all-cause mortality was demonstrated, compared with standard treatment. SPRINT promises to transform the clinical practice of antihypertensive drug prescribing!

In SPRINT, there is a convergence of BP target (here 120 mm Hg systolic) toward the epidemiology linking untreated BP to risk, where incremental cardiovascular risk emerges above a systolic pressure of 100 mm Hg. This has of late, subsequent to the Action to Control Cardiovascular Risk in Diabetes (ACCORD) trial1 been held to be not attainable; those with previous hypertension have a cardiovascular memory, in their arterial walls and heart from the years of hypertension exposure, so that it is thought unreasonable to expect to recapitulate the epidemiology of untreated BP risk with antihypertensive drugs. But in SPRINT, empiricism seems to have trumped theory.1

There are more ways than one of viewing the SPRINT findings. One is to consider the results through the prism of a trial directed at specified BP targets. But a second, unspecified way is to interpret trial outcomes comparing the pressure reduction in the 2 groups (means of 18 and 5 mm Hg). With this reorientation in thinking, the larger BP fall in the intensively treated group might be seen as a confounder. Not so, this is the essence of the SPRINT results that the larger BP fall into the unpromising lower registers of BP toward 120 mm Hg, actually was beneficial.2 This has of late, subsequent to the Action to Control Cardiovascular Risk in Diabetes (ACCORD) trial1 been held to be not attainable; those with previous hypertension have a cardiovascular memory, in their arterial walls and heart from the years of hypertension exposure, so that it is thought unreasonable to expect to recapitulate the epidemiology of untreated BP risk with antihypertensive drugs. But in SPRINT, empiricism seems to have trumped theory.1

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 invariable 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.

The opinions expressed in this article are not necessarily those of the editors or of the American Heart Association.

From the Baker IDI Heart and Diabetes Institute, Melbourne, Victoria, Australia.

Correspondence to Murray Esler, Baker IDI Heart and Diabetes Institute, PO Box 6492, Melbourne 3004, Australia. E-mail murray.esler@bakeridi.edu.au (Hypertension. 2016;67:266-267. DOI: 10.1161/HYPERTENSIONAHA.115.06735.) © 2015 American Heart Association, Inc.

Hypertension is available at http://hyper.ahajournals.org DOI: 10.1161/HYPERTENSIONAHA.115.06735

266
Disclosures

None.

References


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

Hypertension. 2016;67:266-267; originally published online November 9, 2015;
doi: 10.1161/HYPERTENSIONAHA.115.06735

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://hyper.ahajournals.org/content/67/2/266

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in Hypertension can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to Hypertension is online at:
http://hyper.ahajournals.org//subscriptions/