

## Editor's Page

# SPRINT Results Are Life-Saving, Guideline-Changing, and Hypertension Research-Intensifying

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**T**he recent American Heart Association Meeting, in November 2015, when the results of the SPRINT trial were announced and simultaneously published,<sup>1</sup> will be remembered by physicians as the occasion on which current concepts of blood pressure (BP) control were reshaped. Although time is needed to fully "digest" the SPRINT results, these data will probably redefine research goals and hypertension therapy during the next several years.

The SPRINT trial randomly assigned 9361 persons, aged 50 years or older, with a systolic BP (SBP) of 130 mmHg or higher and an increased cardiovascular risk, but without diabetes or a previous history of stroke, to an SBP target of less than 120 mmHg (intensive treatment) or a target of less than 140 mmHg (standard treatment). The primary composite outcome was myocardial infarction, other acute coronary syndromes, stroke, heart failure, or death from cardiovascular causes.<sup>1</sup> Throughout the 3.26 years of follow up, the mean SBP was 121.5 mmHg in the intensive-treatment group and 134.6 mmHg in the standard-treatment group. The intervention was stopped early because the primary composite outcome occurred at a significantly lower rate in the intensive-treatment group than in the standard-treatment group (1.65% per year vs. 2.19% per year; hazard ratio with intensive treatment, 0.75; 95% confidence interval [CI], 0.64 to 0.89;  $p < 0.001$ ). All-cause mortality was also significantly lower in the intensive-treatment group (hazard ratio, 0.73; 95% CI, 0.60 to 0.90;  $p = 0.003$ ). These results challenge the current guidelines for hypertension management.

The report of the Eighth Joint National Committee (JNC 8) on Prevention, Detection, Evalua-

tion, and Treatment of High Blood Pressure suggests, with a strong recommendation (grade A), that patients over 60 years old with  $SBP \geq 150$  mmHg should initiate pharmacological treatment to lower BP with a goal of  $SBP < 150$  mmHg.<sup>2</sup> In the ESH/ESC guidelines it is stated that, in elderly hypertensives with  $SBP \geq 160$  mmHg, there is solid evidence to recommend reducing SBP to between 150 and 140 mmHg.<sup>3</sup> In the prespecified analysis of subgroups of SPRINT, hypertensives aged above 75 years showed a trend towards more beneficial effects of the intensive therapy compared to younger patients. Moreover, the favorable results of the stricter BP control were present in both sexes and all races, independently of any history of cardiovascular disease, and, most importantly, in patients with chronic kidney disease. The latter partly confirms previous recommendations,<sup>2-3</sup> but setting the BP goal as low as 120 mmHg is a novelty. Finally, there was a separate analysis, based on the levels of baseline SBP, showing that patients with  $\leq 132$  mmHg tended to have a benefit of greater magnitude than those with 132-145 mmHg or  $\geq 145$  mmHg. This evidence sets the stage for more research into the definition of hypertension based on cardiovascular risk and not solely on BP levels. In other words, if a patient has an office BP less than 140 mmHg, but the same cardiovascular risk as in the SPRINT trial, there is now a dilemma as to whether a BP of less than 120 mmHg should be pursued.

The price paid for achieving these remarkable drops in BP and cardiovascular morbidity in the SPRINT trial comes at the cost of adverse events of hypotension, syncope, electrolyte abnormalities, and acute kidney injury or failure, in the intensive-treatment group. This highlights that the careful manage-

ment of hypertensive patients is mandatory in order to prevent the risks of strict BP control.

There is no question that SPRINT is a monumental study, but it does not provide all the answers, leaving diverse areas for further investigation. Diabetics were excluded and, given the failure of ACCORD,<sup>4</sup> a SPRINT-like study in diabetics is needed. Secondly, the primary endpoint was driven mainly by heart failure, but there was no reduction in stroke. Would the results be different if the BP achieved was even lower? What is the optimal cutoff value for SBP in these patients? Moreover, the lower diastolic BP levels achieved in the intensive group (68.7 mmHg) were tolerated, but still the question regarding diastolic BP targets remains unanswered.

According to SPRINT, more intensive BP control could ultimately help save lives among adults aged 50 years and older who have a combination of high BP and additional risk factors for heart disease. To achieve these ambitious targets in hypertension a more holistic approach is needed, including lifestyle

changes, pharmacological interventions, and novel therapies. However interesting the results of this study are, further studies are needed to better evaluate the optimal BP.

## References

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