



Published in final edited form as:

Circulation. 2018 March 20; 137(12): 1300–1301. doi:10.1161/CIRCULATIONAHA.117.031849.

Response by Soliman et al to Letters Regarding Article “Effect of Intensive Blood Pressure Lowering on Left Ventricular Hypertrophy in Patients With Hypertension: SPRINT (Systolic Blood Pressure Intervention Trial)”

Elsayed Z. Soliman, MD, MSc, MS¹, Walter T. Ambrosius, PhD², and Cora E. Lewis, MD, MSPH³

¹The Epidemiological Cardiology Research Center (EPICARE), Department of Epidemiology and Prevention, and Department of Medicine, Section on Cardiology, Wake Forest School of Medicine, Winston-Salem, NC

²Department of Biostatistical Sciences, Division of Public Health Sciences, Wake Forest School of Medicine, Winston-Salem, NC

³Division of Preventive Medicine, Department of Medicine, University of Alabama at Birmingham, Birmingham, AL

We thank Jin-shan, Xue-bin, and Lewis et al for their interest in our analysis from the SPRINT trial (1) and for raising important points.

Jin-shan and Xue-bin raise a number of questions. First they inquire about the interpretation of our results in the context of the effect of intensive blood pressure (BP) lowering on cardiovascular disease (CVD) events. In our analysis, similar to the main results from SPRINT, intensive (compared to standard) BP lowering reduced the rates of CVD events. In the paper, we discussed possible reasons why the benefit of intensive BP lowering on the risk of CVD events was not meaningfully influenced by its favorable effect on left ventricular hypertrophy (LVH). Second, they ask why we did not use echocardiography and whether it is more accurate than electrocardiogram (ECG). Although echocardiography is more accurate in classifying LVH than ECG, any misclassification should have affected both arms of the trial equally, and hence, the effect should be balanced as mentioned in our discussion section. Third, the authors ask about differences among antihypertensive classes in terms of their effect on LVH, which is beyond the scope of the SPRINT trial and our analysis. This is because SPRINT focuses on differential impact of treatment strategies rather than antihypertensive classes. Finally, the authors ask about side effects of intensive BP lowering and the effect of intensive BP lowering on stroke. For that, we encourage Jin-shan and Xue-bin to review the main SPRINT trial results (2).

Correspondence: **Elsayed Z. Soliman MD, MSc, MS, FAHA, FACC**, Epidemiological Cardiology Research Center (EPICARE), Wake Forest School of Medicine, Medical Center Blvd, Winston Salem, NC 27157, Tel: (336) 716- 8632; Fax: (336) 716-0834, esoliman@wakehealth.edu.

Disclosures: None

The comments by Lewis et al underscore the complexity of myocardial remodeling that are difficult to capture with any single cardiac investigation modality. Therefore, we agree with them that further insights into the mechanistic relationship between intensive BP lowering, LVH, and CVD events could be obtained by using cardiovascular magnetic resonance (CMR). In this regard, SPRINT-HEART, an ancillary study to the SPRINT trial, evaluated LVH and other structural parameters using both echocardiogram and CMR in a sample of the SPRINT participants. Results from this study should be available in the near future.

References

1. Soliman EZ, Ambrosius WT, Cushman WC, Zhang ZM, Bates JT, Neyra JA, Carson TY, Tamariz L, Ghazi L, Cho ME, Shapiro BP, He J, Fine LJ, Lewis CE. Effect of intensive blood pressure lowering on left ventricular hypertrophy in patients with hypertension: Sprint (systolic blood pressure intervention trial). *Circulation*. 2017; 136:440–450. [PubMed: 28512184]
2. SPRINT Research Group. Wright JT Jr, Williamson JD, Whelton PK, Snyder JK, Sink KM, Rocco MV, Reboussin DM, Rahman M, Oparil S, Lewis CE, Kimmel PL, Johnson KC, Goff DC Jr, Fine LJ, Cutler JA, Cushman WC, Cheung AK, Ambrosius WT. A Randomized Trial of Intensive versus Standard Blood-Pressure Control. *N Engl J Med*. 2015; 373:2103–2116. [PubMed: 26551272]