



COMMENT ON BRESS ET AL.

## Effect of Intensive Versus Standard Blood Pressure Treatment According to Baseline Prediabetes Status: A Post Hoc Analysis of a Randomized Trial. *Diabetes Care* 2017;40:1401–1408

*Diabetes Care* 2018;41:e88–e89 | <https://doi.org/10.2337/dc17-2311>

João Sérgio Neves,<sup>1,2</sup>  
Miguel Bigotte Vieira,<sup>3</sup> Lia Leitão,<sup>4</sup>  
Catarina Viegas Dias,<sup>5</sup>  
Rita Magriço,<sup>6</sup>  
Ana Isabel Oliveira,<sup>1</sup> and  
Davide Carvalho<sup>1,7</sup>

We read with interest the article by Bress et al. (1) reporting on the effect of intensive versus standard blood pressure treatment according to baseline prediabetes status in a post hoc analysis of the Systolic Blood Pressure Intervention Trial (SPRINT). The authors concluded that the beneficial effects of intensive blood pressure treatment were similar among patients with prediabetes and patients with normoglycemia. We have participated in the SPRINT Data Analysis Challenge (2), and we also analyzed the effects of glycemia status in this population. Whereas we agree with the conclusions presented by the authors, we believe it is also important to assess the effect of prediabetes on cardiovascular events and death in patients at high risk for cardiovascular events.

Previous studies have reported an increase in cardiovascular risk among patients with prediabetes (3–5). However, most of these trials have evaluated patients at low or moderate cardiovascular risk (3–5).

Using the SPRINT challenge data set, we evaluated the occurrence of the primary outcome (composite of myocardial infarction, acute coronary syndrome not resulting in myocardial infarction, stroke,

acute decompensated heart failure, or death from cardiovascular causes) and the SPRINT secondary outcomes among patients with prediabetes compared with patients with normoglycemia. We used Cox proportional hazards regression models to test for an association between prediabetes and each outcome. We also tested this association adjusting for age, sex, baseline systolic blood pressure, smoking, chronic kidney disease, cardiovascular disease at baseline, black race, BMI, statins and aspirin use, and treatment arm. The unadjusted hazard ratio for the primary outcome was 1.08 (95% CI 0.91, 1.28;  $P = 0.390$ ) in patients with prediabetes compared with patients with normoglycemia. The adjusted hazard ratio for the primary outcome was 1.05 (0.88, 1.25;  $P = 0.560$ ) in patients with prediabetes compared with patients with normoglycemia. We also found no significant differences regarding the pre-specified secondary outcomes of SPRINT.

We believe our results are important as they suggest that prediabetes status may not increase cardiovascular risk among patients at high risk for cardiovascular events, in contrast with what has been described in patients with low cardiovascular risk.

Note that, as in the article by Bress et al. (1), this analysis was not prespecified and that SPRINT was not designed to answer this question. We cannot exclude that the risk of patients with prediabetes might have been higher if the follow-up had been longer or if prediabetes status had been defined by HbA<sub>1c</sub> levels and/or oral glucose tolerance tests.

In summary, the results from SPRINT not only highlight that intensive blood pressure is beneficial in both patients with prediabetes and patients with normoglycemia but also suggest that prediabetes does not further increase cardiovascular risk among patients at high risk for cardiovascular events.

**Duality of Interest.** No potential conflicts of interest relevant to this article were reported.

### References

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<sup>1</sup>Department of Endocrinology, Diabetes and Metabolism, São João Hospital Center, Porto, Portugal

<sup>2</sup>Department of Surgery and Physiology and Cardiovascular Research Center, Faculty of Medicine, University of Porto, Porto, Portugal

<sup>3</sup>Nephrology and Renal Transplantation Department, Centro Hospitalar Lisboa Norte, Lisbon, Portugal

<sup>4</sup>Neurology Department, Hospital Prof. Doutor Fernando Fonseca, Amadora, Portugal

<sup>5</sup>Family Health Unit of Dafundo, Agrupamento de Centros de Saúde Lisboa Ocidental e Oeiras, Lisbon, Portugal

<sup>6</sup>Nephrology Department, Hospital Garcia de Orta, Lisbon, Portugal

<sup>7</sup>Faculty of Medicine, Instituto de Investigação e Inovação em Saúde, University of Porto, Porto, Portugal

Corresponding author: João Sérgio Neves, [joaosergioneves@gmail.com](mailto:joaosergioneves@gmail.com).

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