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Mats Julius Stensrud, Susanne Strohmaier

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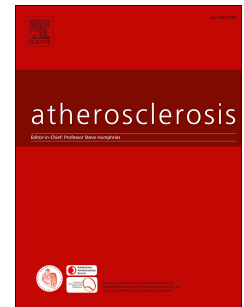
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Diastolic hypotension due to intensive blood pressure therapy: Is it harmful?

Mats Julius Stensrud^{1,2} and Susanne Strohmaier^{2,3,*}

¹Oslo Centre for Biostatistics and Epidemiology, Department for Biostatistics, University of Oslo, Oslo, Norway

²Diakonhjemmet hospital, Oslo, Norway

³Channing Division of Network Medicine, Brigham and Women's Hospital, and Harvard Medical School, Boston, USA

*Corresponding author (su.strohmaier@gmail.com)

Abstract

Background and aims: Reducing the diastolic blood pressure (DBP) below a certain threshold may lead to inadequate organ perfusion. This raises some concerns, because pharmacotherapy reduces both systolic and diastolic pressure. We aimed to investigate whether a pathway from intensive systolic blood pressure (SBP) treatment influences cardiovascular outcomes by inducing too low DBP.

Methods: We had access to data from the Systolic Blood Pressure Intervention Trial (SPRINT) including 9361 patients with a SBP of 130 mm Hg or higher and an increased cardiovascular risk. In a formal mediation analysis we investigated whether the effect of intense (target SBP: 120 mm Hg) vs. standard (target SBP: 140 mm Hg) intervention on a composite endpoint would be mediated through an indirect, potentially harmful, effect through low DBP (< 60 mm Hg).

Results: Adjusting for treatment, we find that low DBP *per se* is associated with poor cardiovascular outcomes (HR 1.90 (95%CI [1.46, 2.47])). However, in a formal mediation analyses we observed that the unadjusted indirect effect of intensive blood pressure treatment going through low DBP of HR 1.12 (95%CI [1.06, 1.18]) attenuates to a statistically non significant effect of HR 1.04 (95%CI [0.98, 1.10]) after adjustment for important covariates, suggesting that the mere association is considerably confounded.

Conclusions: The increased risk in subjects with diastolic pressure below 60

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