Is intensive blood pressure strategy effective and safe in patients with cardiovascular disease? The two sides of the coin

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Background/Introduction: Recent data advocate the adoption of a more intensive treatment strategy for the management of blood pressure (BP).

Purpose: We sought to investigate whether the overall effects of the Systolic Blood Pressure Intervention Trial (SPRINT) are applicable to cardiovascular disease (CVD) patients.

Methods: In the present post-hoc analysis we analyzed data from SPRINT that randomly assigned 9361 individuals to systolic blood pressure (SBP) target of less than 120 mm Hg (intensive treatment) or a target of less than 140 mm Hg (standard treatment). 1562 patients had clinically evident CVD (age=70.3±9.3 years, 24% females) at study entry and were followed for 3.1 years. Further, we assessed the effect of low (<150 mm Hg) baseline SBP on clinical endpoints.

Results: In CVD patients, there was no benefit from the intensive treatment regarding all endpoints, except for a marginally significant benefit on all-cause mortality (hazard ratio [HR]: 0.67; 95% confidence interval [CI], 0.45 to 1.00; P=0.0509). (Figure) Further, while there was no increase in serious adverse events (SAE) in the intensive group, there was an increased HR for study-related SAE in the intensive management group (HR: 2.00; 95% CI: 1.22 to 3.26; p = 0.006), a greater incidence of acute renal failure (HR: 1.57; 95% CI: 1.01 to 2.44; P=0.044), electrolyte abnormalities (HR: 1.77; 95% CI: 1.03 to 3.02; P=0.038) and specifically hyponatremia (HR: 2.24; 95% CI: 1.13 to 4.46; p = 0.021). In patients with low baseline SBP there was a beneficial effect on all-cause mortality (HR: 0.56; 95% CI: 0.33 to 0.96; P=0.033), but with greater stroke incidence (HR: 2.94; 95% CI: 1.04 to 8.29; P=0.042). As far as adverse events are concerned, patients with SBP<150 mm Hg had increased risk only for study-related SAE and electrolyte abnormalities.

Conclusions: We confirm the beneficial effect of the intensive strategy in SPRINT study on all-cause mortality and the harmful effect on other than serious adverse outcomes in patients with CVD. However, in patients with low baseline SBP stroke increases.
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