

Abstract 15852: Treated Systolic Blood Pressure and Cardiovascular Risk in Adults With Hypertension and Type 2 Diabetes: Results From the TECOS Trial

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Abstract

Background: SBP treatment targets for adults with type 2 diabetes (T2D) remain unclear.

Methods: The relationship between SBP and CVD events was evaluated in patients with medically treated HTN in the TECOS trial (sitagliptin vs. placebo in patients with atherosclerotic CVD and T2D). The associations between both baseline SBP and SBP as a time-updated variable during the trial and CVD events (CV death, stroke, MI, unstable angina or HF hospitalization) over 4 years follow-up were evaluated with Cox proportional hazards modeling. In sensitivity analyses, those with HF at baseline were excluded and the association between SBP and non-heart failure CVD events was evaluated.

Results: Among 13,822 patients with T2D, ASCVD, and medically treated HTN, the average age was 65; 29% were women, and 31% were non-white, with average baseline SBP 135 mmHg. The incidence of the composite CVD endpoint was 13.2%. In adjusted modeling, baseline treated SBP was associated with CVD, but the association was non-linear ($p=0.003$), with an inflection point around 130 mmHg (**Figure**). In analysis of time-updated SBP, every 10 mmHg increment in SBP above 130 mmHg was associated with a 6% increase in the hazard of CVD (HR 1.06, 95% CI 1.02-1.11). Reduction in SBP below 130 mmHg was associated with a 11% increase in CVD hazard (HR 1.11, 95% CI 1.04-1.18). In sensitivity analysis of non-HF CVD events in those without baseline HF, there remained a similar U-shaped association: for every 10 mmHg increase ≥ 130 mmHg, HR 1.09, 95% CI 1.04-1.14; for every 10 mmHg decrease below 130 mmHg, HR 1.10, 95% CI 1.01-1.19.

Conclusion: In T2D patients with HTN, SBP treated to around 130 mmHg was associated with improved CVD outcomes, while reduction in SBP below 130 mmHg was associated with increased CVD risk. These data give pause to advocating for SBP targets below 130 mmHg in high-risk adults with diabetes, but support more intensive targets than recommended in most present guidelines (i.e. SBP target <140 mmHg).

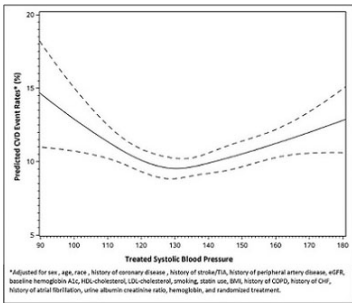


Figure: Adjusted Cardiovascular Disease Event Rates by Treated Systolic Blood Pressure at Baseline