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**Risk of cardiovascular disease, chronic kidney disease, cerebrovascular disease, and cardiovascular mortality according to blood pressure categories in diabetes patients: A population-based study**

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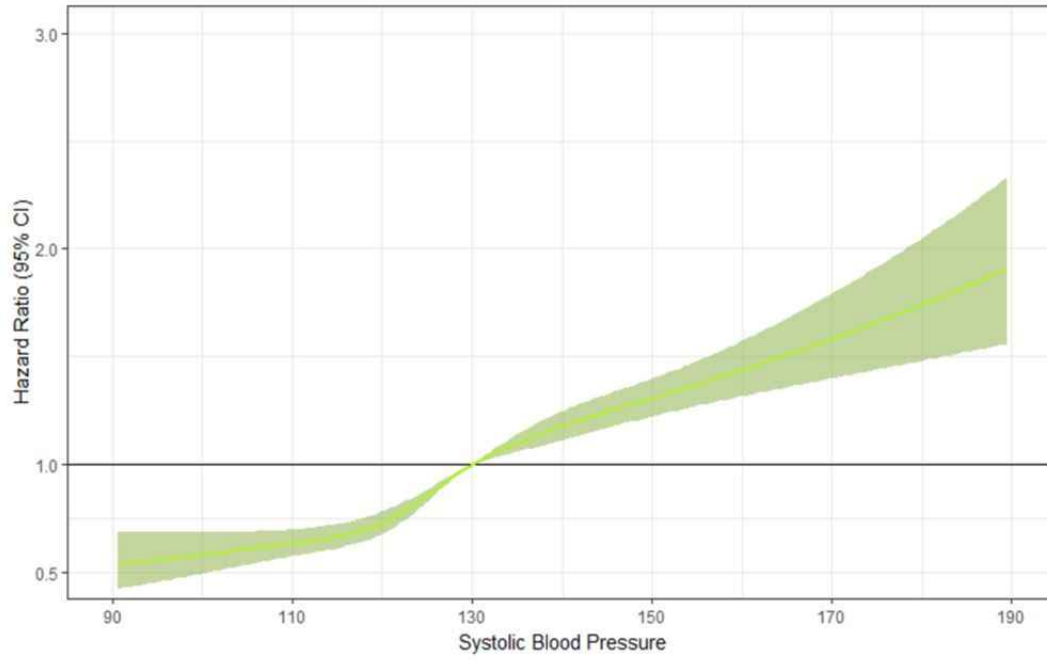
**Objectives:** We aimed to examine the effects of BP categories defined by the 2017 ACC/AHA guidelines in diabetes patients on the risk of CVD and CKD.

**Methods:** In this population-based cohort study, we analyzed data from the National Health Information Database in Korea during 2009-2017. The BP categories were defined as per the 2017 ACC/AHA guidelines: level 1 (systolic <120 mmHg and diastolic <80 mmHg), level 2 (systolic 120-129 mmHg and diastolic <80 mmHg), level 3 (systolic 130-139 mmHg or diastolic 80-89 mmHg), and level 4 (systolic ≥140 mmHg or diastolic ≥90 mmHg). We obtained the risk of CVD, CKD, cerebrovascular disease and CVD mortality.

**Results:** Overall, 490,352 diabetes patients (men 313,753 [64.0%], women 176,599 [36.0%]) were included in the analysis. Over a mean follow-up of 5 years, 6,508 CVD events occurred. Compared to people with BP levels 1, the adjusted hazard ratios (HRs) for CVD in people with BP levels 2, 3, and 4 were 1.07 (95% confidence interval [CI], 0.98-1.16), 1.12 (95% CI, 1.04-1.20) and 1.17 (95% CI, 1.08-1.26), respectively. There were also increased risks of CKD [1.18 (95% CI, 1.12-1.24) and 1.22 (95% CI, 1.15-1.29)], cerebrovascular disease [1.21 (95% CI, 1.14-1.29) and 1.52 (95% CI, 1.42-1.63)], and CVD mortality [1.31 (95% CI, 1.09-1.56) and 1.91 (95% CI, 1.58-2.32)] among subjects with BP levels 3 and 4 compared with those with BP level 1. Moreover, among people not taking antihypertensive medications, there were higher risks of CVD, CKD, cerebrovascular disease, and CVD mortality in those with BP levels 3 and 4 than in those with BP level 1

**Conclusions:** The risks of CVD, CKD, cerebrovascular disease, and CVD mortality significantly increased in patients with a systolic BP of 130 mmHg and diastolic BP of 80 mmHg. These findings provide evidence supporting the 2017 ACC/AHA guidelines for BP targets in diabetes patients.

Risk of CKD according to blood pressure



Blood pressure, mm Hg	<90	90-109	110-129	130-149	150-169	≥170
No. of participants	33	11848	142723	110362	13048	997
No. of events	2	354	5154	5397	761	83