

Risk of Diabetic complications according to 2017 ACC/AHA blood pressure categories in diabetes

연세대학교 원주의과대학 내과학 교실¹, 연세대학교 원주의과대학 의통계학과², 연세대학교 원주의과대학 정밀의학과³

고기호¹, 이준혁², 강대룡³, 김장영¹, 이미영¹, 이준영¹

Background/Aims: The association of between blood pressure (BP) defined by the 2017 American College of Cardiology/American Heart Association (ACC/AHA) guidelines with cardiovascular disease (CVD) and chronic kidney disease (CKD) in diabetes patients remains unclear.

Methods: This study used the National Health Insurance Database of Korea, that has health information of 8,922,940 persons who were screened from 2009 to 2014. We determined the BP status of 490,352 diabetes: 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).

Results: Over a mean follow-up of 5 years, 6,508 CVD events (1.3%), 14,318 cases of CKD development (2.9%), 9,094 cerebrovascular events (2.0%), and 1,150 CVD mortalities (0.2%) 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.

Conclusions: These findings provide evidence supporting the 2017 ACC/AHA guidelines for BP targets in diabetes patients.

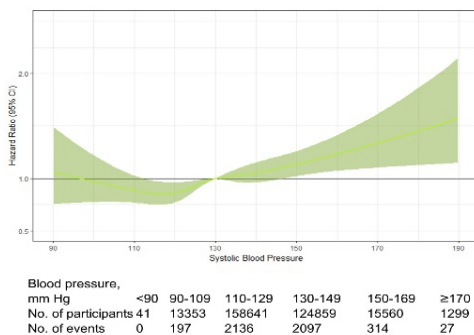


Figure 1. Hazard ratios (solid lines) with 95% confidence intervals (shaded areas) for cardiovascular disease according to systolic blood pressure in men diabetic subjects

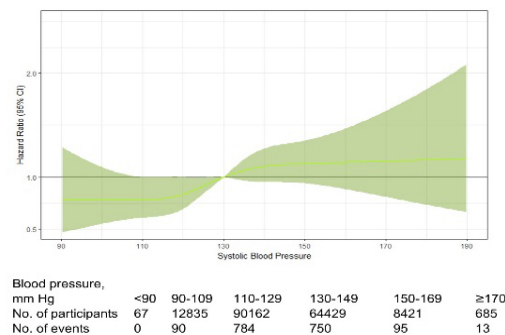


Figure 2. Hazard ratios (solid lines) with 95% confidence intervals (shaded areas) for cardiovascular disease according to systolic blood pressure in women diabetic subjects