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## **Study for the therapeutic standards of Korean hypertension: A nationwide population-based cohort study**

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**Objectives:** Although AHA/ACC recently updated the guidelines for the prevention, detection, evaluation, and management of high blood pressure (BP) in adults, there was no study, to our knowledge, for the therapeutic standards of high BP with Korean healthcare big data.

**Methods:** Using Korean National Healthcare Insurance Service Sample Cohort data from 2002 to 2013, 260,448 subjects were enrolled and had conducted more than 3 times of nationwide health examinations, periodically. Considering 120/80mmHg as a normal BP reference, those populations were stratified into 4 groups [Group 1 (n=68,970); SBP<120 and DBP<80, Group 2 (n=23,836); 120≤SBP<130 and DBP<80, Group 3 (n=125,038); 130≤SBP<140 or 80≤DBP<90, and Group 4 (n=42,604); SBP≥140 or DBP≥90]. We performed time-dependent Cox hazards analyses to evaluate the associations of high BP with the incidence of following end-outcomes; major adverse cardiac and cerebrovascular events (MACCE) or chronic kidney disease (CKD). In addition, we also investigated these associations between high BP and the occurrence of end-outcomes in the stratified groups based on age, gender, the presence of diabetes mellitus, and proteinuria, respectively.

**Results:** During the mean follow-up duration of 91.10 months, the hazard ratios for the composite outcomes in Group 2, 3 and 4 were 1.218 (1.155-1.284), 1.323 (1.275-1.373), and 1.806 (1.723-1.894) compared with Group1, respectively. Additionally, similar results were revealed, irrespective of the stratification according to age and gender, but only Group 4 had a significant association with the incidence of composite outcome in 70s or older. In those participants with proteinuria, all of the Group 2, 3, and 4 were significantly related to the occurrence of composite outcome, irrespective of age and gender, but only Group 4 had significant association with the incidence of end-outcomes in 70s or older.

**Conclusions:** These findings showed that intensive BP (120/80mmHg) control were more effective on keeping healthy status among Korean populations except for 70s or older.