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## **Age-adapted CKD Definition and Mortality Risk: Results from the KNHANES linked Cause of Death data**

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**Objectives:** Current threshold of eGFR for CKD has limitation that cannot differentiate physiologic decrease from aging and kidney disease. This study aimed to evaluate the effect of age-adapted definition of CKD on mortality risk.

**Methods:** A total of 48,380 participants from the Korean National Health and Nutrition Examination survey linked Cause of Death data were analyzed to evaluate the association between standard(eGFR<60mL/min/1.73m<sup>2</sup>) vs. age-adapted(eGFR<75, 60, and 45mL/min/1.73m<sup>2</sup> for participant's age<40, 40-64, and ≥65 years, respectively) definitions of CKD with proteinuria, and mortality risks(all-cause and cardiovascular [CV] deaths).

**Results:** The mean age of participants was 49.4±16.1years and 43.3% were men. Overall prevalence of CKD was lower using age-adapted CKD definition(a-CKD) compared with using standard CKD definition(s-CKD)(1.8% vs. 5.4%, *P*=0.03). CKD prevalence assessed by a-CKD was markedly lower in individual over 65 years old(3.0% vs. 20%, *P*<0.001). During a median follow up of 11.0 [8.0-13.0] years, 2,790(5.7%) and 540(1.1%) of all-cause and CV death occurred. In multivariable Cox analysis for all-cause mortality, a-CKD was associated with higher risk than s-CKD(HR, 2.41; 95%CI, 2.08-2.80vs.HR,1.57; 95%CI, 1.43-1.73). For the risk of CV death, similar result was observed(HR, 2.15; 95% CI, 1.55-2.98 vs. HR, 1.68; 95 % CI, 1.36-2.06). When participants were divided b age groups(<40, 40-64, and ≥65 years), individuals ≥65 years old showed that a-CKD was associated with higher risks of all-cause and CV death than s-CKD. In age ≥65 years group, relative risk ratios for all-cause and CV mortality were higher in a-CKD than in s-CKD(1.67 vs.1.00, *P*<0.001; 1.93 vs.1.00, *P*=0.003) However, in individual <45 years, a-CKD showed a higher risk than s-CKD only for all-cause mortality.

**Conclusions:** Using a-CKD may result in more appropriate attention to individual at high risk of mortality, especially in those over 65 years old.