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Association of glycemic control with kidney outcome and mortality in CKD patients with Type 2 diabetes: The results from the KNOW-CKD

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Objectives: Optimal glycemic control is important to prevent complications in patients with diabetes. We studied the association of glycated hemoglobin level with mortality and progression of chronic kidney disease (CKD) in Korean patients with diabetes and CKD.

Methods: We analyzed a total of 698 CKD patients with type 2 diabetes from the KoreaN cohort study for Outcome in patients with CKD (KNOW-CKD), a prospective community-based cohort study. The study endpoints were all-cause mortality and a kidney composite outcome of halving eGFR from baseline value or the incident end-stage kidney disease.

Results: During 2,600 person-years of follow-up (median 3.9 years), 44 (6.3%) deaths and 278 (39.8%) kidney outcome events occurred. In multivariable Cox analysis after adjustment of confounders, higher hemoglobin A1c (HbA1c) level was associated with increased risk of mortality: the hazard ratios (95% confidence interval) for HbA1c levels of 6.5-7.9% and ≥8% were 1.10 (0.48-2.55) and 3.08 (1.36-6.96), respectively, compared to HbA1c level <6.5%. When HbA1c was treated as a continuous variable, a 1% increase in HbA1c level was associated with a 1.29-fold higher risk of mortality (95% CI). However, there was no significant association between HbA1c level and the composite renal outcome.

Conclusions: In this longitudinal cohort study, elevated HbA1c was associated with higher risk of mortality but not associated with CKD progression in diabetic CKD patients.