Chronic kidney disease and risk of death from infection.

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Abstract

BACKGROUND: Infection, bacteremia and sepsis are major sources of morbidity and mortality in patients with end-stage renal disease. This study sought to determine the association between predialysis chronic kidney disease (CKD) and infection-related mortality.

METHODS: We analyzed participants in the Third National Health and Nutrition Examination Survey (NHANES III). The study included adults ≥45-years-old without end-stage renal disease. Estimated glomerular filtration rate (eGFR) was categorized as ≥60, 45-59.9 and <45 ml/min per 1.73 m(2), and urinary albumin-to-creatinine ratio (ACR) as <30, 30-299.9 and ≥300 mg/g. The study identified infection-related mortality, including septicemia, respiratory, abdominal and gastrointestinal, cardiac, kidney and genitourinary, neurologic, and other infections over a median of 13 years using the National Death Index.

RESULTS: Of 7,400 participants included in the study, 206 died from infections. Compared to individuals with eGFR ≥60 ml/min per 1.73 m(2), infection-related mortality was higher for those with lower eGFR [adjusted HR = 1.36 (95% CI: 0.81, 2.30) and 2.36 (1.04, 5.38) for eGFR of 45-59.9 and <45 ml/min per 1.73 m(2), respectively; p trend = 0.06]. Compared to individuals with ACR <30 mg/g, infection-related mortality was higher for ACR levels of 30-299 and ≥300 mg/g [adjusted HR = 1.68 (95% CI: 0.97, 2.92) and 2.84 (0.92, 8.74), p trend = 0.02].

CONCLUSIONS: Reduced eGFR and albuminuria are associated with increased risk for infection-
related mortality. Efforts are needed to reduce its incidence and mitigate the effects of infections among individuals with CKD.