Urine Potassium Linked to Mortality, but Not Kidney Failure Risk

In patients with chronic kidney disease (CKD), higher urine potassium excretion—as a surrogate for dietary potassium intake—is associated with a lower risk of death but no difference in the risk of kidney failure, reports a study in American Journal of Kidney Diseases.

The study was a post hoc analysis of 812 participants from the Modification of Diet in Renal Disease study. That trial, performed between 1989 and 1993, analyzed the effects of blood pressure control and dietary protein restriction on progression of stage 2 to 4 CKD. The current study analyzed the association of 24-hour urine potassium excretion, measured at baseline and at various times during the study, with the occurrence of kidney failure, defined as dialysis initiation or transplantation. All-cause mortality was also assessed.

At a median follow-up of 6.1 years, kidney failure occurred at a rate of 9 events per 100 patient-years. At a median of 19.2 years, all-cause mortality was 3 deaths per 100 patient-years. The patients' baseline mean 24-hour urinary potassium excretion was 2.39 g/d. Urine potassium excretion was unrelated to the risk of kidney failure, but was associated with mortality. For each one-standard deviation increase in baseline urine potassium excretion, there was a 17% decrease in all-cause mortality (hazard ratio 0.83).

In the general population, low urine potassium excretion is associated with increased risks of hypertension and cardiovascular disease. The new study is one of the few to evaluate the association of potassium intake with CKD outcomes.

The results suggest lower all-cause mortality in CKD patients with higher urine potassium excretion, but no significant association with kidney failure risk. “Higher potassium intake may provide some benefit even in a population with nondiabetic CKD,” the researchers conclude that “routine pumping... may be a potent and cost-effective way to increase the organ supply by reducing discard.” [Stewart DE, et al. Diagnosing the decades-long rise in the deceased donor kidney rate in the United States. Transplantation 2017; 101:575–587].

In Nondiabetic CKD, No Overall Benefit of Intensive BP Control

Intensive blood pressure control does not further reduce the risk of kidney disease progression among nondiabetic patients with kidney disease, concludes a meta-analysis in JAMA Internal Medicine.

A systematic review identified nine randomized controlled trials comparing intensive BP control—targeting levels less than 130/80 mm Hg—with standard BP control in CKD patients without diabetes. The studies included a total of 8127 patients with a median follow-up of 3.5 years, including more than 800 kidney disease progression events. Meta-analysis was performed for the outcomes of annual rate of change in glomerular filtration rate (GFR), doubling of serum creatinine or 50% reduction in GFR, end-stage renal disease, a composite renal outcome, and all-cause mortality.

In the overall patient population, there was no significant difference in progression of renal disease or mortality with intensive versus standard BP control. However, there was a trend toward lower kidney disease progression with intensive BP control among nonblack patients and those with higher levels of proteinuria. Adverse events were similar between groups, except for a higher rate of dizziness with intensive BP control.

Most CKD patients do not have diabetes, and BP control can reduce decline in renal function and cardiovascular risk. Previous studies of intensive BP control in this large group of patients have yielded conflicting results.

The new meta-analysis of more than 8000 nondiabetic CKD patients with 3 years’ follow-up shows no reduction in kidney disease progression with intensive versus standard BP control. However, the data show a trend toward reduced kidney disease progression in nonblack patients and those with high proteinuria. Adverse events appear similar at both BP targets [Tsiu WC, et al. Association of intensive blood pressure control and kidney disease progression in nondiabetic patients with chronic kidney disease: a systematic review and meta-analysis. JAMA Intern Med. Published online March 13, 2017; doi:10.1001/jamainternmed.2017.0417].