CKD Registry Improves Some Outcomes in Safety-Net Clinics

A team-based CKD registry improves some clinical measures and care processes for patients in a safety-net primary care setting, reports a trial in the *American Journal of Kidney Diseases*.

Many patients with CKD do not receive guideline-based care shown to improve clinical outcomes. Disease registries embedded in electronic health records can improve quality of care for some chronic diseases.

The pragmatic trial evaluated in the *AJKD* study looked at an electronic CKD registry designed to identify patients with CKD and provide primary care team members with data relevant to their care. The study included 746 patients at a public safety-net care setting in San Francisco that had a high burden of hypertension and CKD. Patients and providers were assigned to 1 year of the CKD registry or a usual-care registry.

The primary care CKD registry targeted all patients with CKD, those with blood pressure over 140/90 mm Hg, those without an ACEI/ARB prescription, and those without an albuminuria measurement in the past year. In addition to sending alerts to the primary care team, the registry provided quarterly feedback to promote outreach to patients with CKD. Change in systolic BP at 1 year was assessed, along with BP control, ACEI/ARB prescribing, measurement and severity of albuminuria, and eGFR.

The patients’ mean age was about 57 years; 53% were women. About 36% were black, 25% Hispanic, and 24% Asian. Based on albuminuria and/or eGFR measurements, 41.6% of patients had stage 1 or 2 CKD, 38.0% had stage 3a and 15% stage 3b CKD, and 4.8% had stage 4 disease. Thirty-eight percent of patients had a baseline albuminuria measurement; in this group, the average albumin-to-creatinine ratio was 421 mg/g. About 20% of patients had glycated hemoglobin greater than 6.5%, while 36% had uncontrolled BP. Overall, 30 primary care patients and 285 other patients were assigned to the CKD registry. Forty-nine primary care patients and 461 other patients were assigned to the usual care registry.

At 1 year, there was no significant difference in change in systolic BP (the primary outcome) between groups. There was also no difference in the percentage of patients with uncontrolled BP. Patients assigned to the CKD registry were twice as likely to have an ACEI/ARB prescription, adjusted odds ratio (OR) 2.25; and to undergo albuminuria measurement, OR 2.44. There was no significant difference in the degree of albuminuria or eGFR.

The CKD registry evaluated in this trial focused on behavior change throughout the healthcare team, not just for individual physicians.


Falling Amputation Rates in Dialysis Patients

Rates of lower-extremity amputation among ESRD patients on dialysis have decreased by about half in recent years, but mortality remains high among those who do undergo amputation, reports a study in *JAMA Internal Medicine*.

The study included 3.7 million records of ESRD patients receiving dialysis from 2000 through 2014, drawn from the US Renal Data System. Yearly cohorts were analyzed to assess trends in nontraumatic lower extremity amputations, classified as major (above- or below-knee) and minor (below-ankle). The effects of age, sex, diabetes, and hospital referral region were examined, along with one-year mortality after amputation.

In each annual cohort, more than half of patients were white; the percentage of women declined over the years. The adjusted rate of lower-extremity amputations declined from 5.42 per 100 person-years in 2000 to 2.66 per 100 person-years in 2014, for a relative decrease of 51%. The trend was driven by a 65.0% decrease in above-knee amputations and a 58.5% decrease in below-knee amputations, but there was also a 25.9% decrease in below-ankle amputations.

Amputation rates were more than five times higher in ESRD patients with diabetes, compared to nondiabetic patients. Adjusted amputation rates were higher for patients under age 65, compared to younger patients, and higher for men versus women. Adjusted 1-year mortality decreased from 52.2% in 2000 to 43.6% in 2013. Amputation rates decreased in all hospital referral regions, but remained higher in the South and Northeast regions. These regional variations persisted after adjustment for demographic variables and comorbidity.

Patients with ESRD receiving dialysis are at high risk of amputation, likely reflecting both traditional risk factors and risks specific to kidney disease. Recent studies have reported declining lower extremity amputation rates in the general Medicare population—possibly due to improved screening and management of peripheral arterial disease, especially in diabetic patients.

This retrospective study finds a 51% relative decrease in lower extremity amputations in dialysis patients since the year 2000. Reasons for this trend may include more aggressive management of cardiovascular risk factors and improved diabetic foot care.

One-year mortality after amputation in dialysis has improved as well, but remains over 40%. “Our results highlight the need for more research on ways to prevent lower extremity amputation in this extremely high-risk population,” the investigators conclude [Franz D, et al. Trends in rates of lower extremity amputation among patients with end-stage renal disease who receive dialysis. *JAMA Intern Med* 2018; 178:1025–1032].

Canagliflozin Reduces Risks Even at Lower eGFR Levels

In patients with type 2 diabetes, canagliflozin has cardiovascular and renal benefits even at lower levels of kidney function, according to an analysis of clinical trial data reported in *Circulation*.

The analysis included data on 10,142 patients with type 2 diabetes and high cardiovascular risk enrolled in the industry-sponsored “Canagliflozin Cardiovascular Assessment Study” (CANVAS). Patients were randomly assigned to treatments with canagliflozin, a sodium-glucose co-transporter 2 inhibitor, or placebo. About 20% of patients had glycated hemoglobin greater than 6.5%, while 36% had uncontrolled BP. Overall, 30 primary care patients and 285 other patients were assigned to the CKD registry. Forty-nine primary care patients and 461 other patients were assigned to the usual care registry.

At 1 year, there was no significant difference in change in systolic BP (the primary outcome) between groups. There was also no difference in the percentage of patients with uncontrolled BP. Patients assigned to the CKD registry were twice as likely to have an ACEI/ARB prescription, adjusted odds ratio (OR) 2.25; and to undergo albuminuria measurement, OR 2.44. There was no significant difference in the degree of albuminuria or eGFR.

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