Findings

Are Anticoagulants Useful for CKD Patients with Atrial Fibrillation?

Anticoagulants don't reduce the risk of stroke in older adults with atrial fibrillation and chronic kidney disease, suggests a study in *Kidney International*.

The researchers analyzed data on 6544 Ontario residents aged 66 years or older with advanced CKD—estimated glomerular filtration rate less than 45 mL/min/1.73 m^2—and atrial fibrillation. Of these, 1475 filled an anticoagulant prescription, mainly for vitamin K antagonists. Propensity matching was used to identify 1417 matched pairs with or without anticoagulation; median follow-up was 269 and 254 days, respectively. Risks of ischemic stroke, hemorrhagic events, or death were compared between groups.

The rate of ischemic stroke was not significantly different for patients with and without an anticoagulant prescription: 41.3 and 34.4 per 1000 person-years, respectively. But hemorrhagic events were significantly more frequent in the anticoagulation group: 61.3 versus 34.3 per 1000 person-years, hazard ratio (HR) 1.42. In contrast, all-cause mortality was significantly lower in patients receiving anticoagulants: 122.6 versus 136.3 per 1000 person-years, HR 0.74.

In competing risk models, there was still no significant difference in ischemic stroke risk. For hemorrhagic events, the HR increased to 1.60 in the anticoagulation group. Sensitivity analysis accounting for variations in time of anticoagulant exposure yielded similar patterns.

It has been unclear whether anticoagulant therapy reduces the risk of stroke related to atrial fibrillation in patients with CKD. No studies have addressed this issue specifically in elderly CKD patients, who have a high incidence of atrial fibrillation.

This matched case-control study finds no reduction in ischemic stroke risk with anticoagulants among patients with atrial fibrillation and advanced CKD. Anticoagulation is also associated with increased bleeding risk, but lower all-cause mortality. Decisions about anticoagulation in elderly patients with atrial fibrillation and stage 3b to 5 CKD should be based on individual assessment of risks and benefits [Keskar V, et al. The association of anticoagulation, ischemic stroke, and hemorrhage in elderly adults with chronic kidney disease and atrial fibrillation. *Kidney Int* 2017; 91:928–936].

What's Behind the Jump in Kidney Discard Rate?

A broadening donor pool, increased risk aversion, and inefficient organ allocation may all contribute to the long-term increase in the percentage of deceased donor kidneys discarded, concludes a study in *Transplantation*.

The researchers analyzed Organ Procurement and Transplantation Network data to explore possible reasons for the well-documented, two-decade-long increase in the US deceased donor kidney discard rate (DKR). Beginning at 5.1% in 1988, the KDR rose more or less steadily to a high of 19.1% in 2009. This trend occurred at a time when the number of kidneys nearly doubled, from 7705 to 14,394. The KDR subsequently stabilized at 18% to 19% between 2010 and 2015. Multivariable regression and propensity analysis were performed to evaluate changes in donor characteristics and other potential explanatory factors.

The findings suggested that at least 80% of the increase in KDR was related to changes in the donor pool and in biopsy and pumping practices. Median donor age increased from 26 years in 1987 to 43 years in 2009, while the median Kidney Donor Risk Index increased from 1.1 in 1994 to 1.3 in 2009. There were also significant increases in black and Hispanic donors, diabetic donors, and donation after circulatory death.

Increased biopsy rates also contributed to the increase in KDR, as did an increase in kidneys pumped. During the 2000s, the percentage of kidneys placed on a pulsatile perfusion pump increased from 10% to 30%. Without this change in pumping practice, the increase in KDR would have been even greater.

The results suggest that the increase in deceased donor KDR from the late 1980s to the late 2000s largely reflected increased age and other changes related to the broadening of the donor pool. The unexplained residual increase may be partly related to behavioral factors including increased risk aversion, with transplant programs lowering their acceptance rates for less-than-ideal kidneys.

Inefficiencies in the organ allocation system may also be a contributing factor. In light of this and previous findings, the researchers conclude that "routine pumping . . . may be a potent and cost-effective way to increase the organ supply by reducing discards" [Stewart DE, et al. Diagnosing the decades-long rise in the deceased donor kidney discard rate in the United States. *Transplantation* 2017; 101:575–587].

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. "[H]igher potassium intake may provide some benefit even in a population with nondiabetic CKD," the researchers write. They call for further studies to examine these associations in other groups of kidney disease patients and to explore the underlying mechanisms [Leonberg-Yoo AK, et al. Urine potassium excretion, kidney failure, and mortality in CKD. *Am J Kidney Dis* 2017; 69:341–349].

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 time of 3.3 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 heavy proteinuria. Adverse events appear similar at both BP targets [Tasi W-C, 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.2017.0197].