

No Reduction in Cardiac Surgery–Related AKI with Spironolactone

The mineralocorticoid receptor blocker spironolactone does not reduce the risk of acute kidney injury (AKI) in patients undergoing cardiac surgery, concludes a trial in *American Journal of Kidney Diseases*.

The randomized, double-blind trial included 233 adults (mean age 53) undergoing cardiac surgery with cardiopulmonary bypass. Starting the day before surgery, one group received spironolactone—100 mg, with three further 25 mg doses given on postoperative days 0, 1,

and 2—while the other group received placebo. Patient characteristics were similar between groups: mean serum creatinine level was 0.9 mg/d, while the median Thakar score (used to estimate AKI risk) was 2. Patients were followed up for 7 days, or until ICU discharge.

Acute kidney injury occurred in 43% of patients assigned to spironolactone versus 29% in the placebo group. The difference was not significant on adjusted analysis, although “the odds ratio showed

a propensity toward risk.”

The spironolactone and placebo groups had a similar incidence of stage 2 and 3 AKI. Secondary outcomes were also similar, including renal replacement therapy, length of ICU stay, and mortality.

Aldosterone could play a role in kidney injury during renal ischemia. In rat models, the authors have found that spironolactone can prevent renal injury induced by ischemia-reperfusion.

However, this randomized trial finds no renoprotective effect of spironolactone in reducing the risk of AKI after cardiac surgery. However, it suggests a possible trend toward increased risk. The authors discuss possible reasons for the discordant results from their preclinical studies [Barba-Navarro R, et al. The effect of spironolactone on acute kidney injury after cardiac surgery: a randomized, placebo-controlled trial. *Am J Kidney Dis* 2017; 69:192–199]. ●

High Distress among Undocumented Immigrants with ESRD

Undocumented immigrants with end-stage renal disease (ESRD) suffer from serious physical symptoms and psychosocial distress—particularly related to receiving hemodialysis on an “emergent-only” basis, reports a qualitative study in *JAMA Internal Medicine*.

The investigators performed semi-structured interviews with 20 undocumented Latino patients with ESRD seen at a safety-net hospital in Colorado. The patients were 10 men and 10 women, mean age 51 years. All had been in the United States for at least 5 years before ESRD diagnosis.

Analysis of interviews identified themes in four major categories. Patients experienced a gradual and distressing increase in symptoms after emergency hemodialysis, identifying dyspnea as the most burdensome symptom. Because of high patient volume and inconsistent admission criteria, they had uncertain access even to emergent hemodialysis. To avoid being turned away at the hospital, some patients reported waiting until symptoms were severe enough to put them at risk of death.

The patients experienced high anxiety about their risk of death as symp-

toms accumulated. They described comforting relationships with other patients and suffered distress when those people died. They discussed the impact of emergent-only hemodialysis on their families, and the importance of family caregivers.

Patients understood that they were receiving suboptimal care owing to their undocumented immigration status, the investigators said. Many had a willing donor, but lacked access to transplantation. Participants said they appreciated the kindness and empathy of providers at the safety-net hospital.

The findings highlight the high symptom burden experienced by undocumented immigrants with ESRD who lack access to scheduled hemodialysis.

“This distress, coupled with higher costs for emergent dialysis, indicate that we should reconsider our professional and societal approach to ESRD care for undocumented patients,” the researchers said [Cervantes L, et al. The illness experience of undocumented immigrants with end-stage renal disease. *JAMA Intern Med*. Published online February 6, 2017. doi:10.1001/jamainternmed.2016.8865]. ●

Renal Biopsy Detects Nondiabetic Kidney Disease in Diabetic Patients

Renal biopsy can be useful in establishing the correct diagnosis and treatment in patients with diabetes—a population with a high prevalence of nondiabetic renal disease (NDRD), according to a meta-analysis in *Nephrology Dialysis Transplantation*.

The researchers identified and analyzed data on the frequency of diabetic nephropathy, NDRD, and “mixed” forms of kidney disease among patients with diabetes. The analysis included data on 4876 patients undergoing renal biopsy, reported in 48 studies.

For all three diagnostic categories, prevalence varied widely: from 6.5% to

94% for diabetic nephropathy, 3.0% to 82.9% for NDRD, and 4.0% to 45.5% for mixed kidney disease. IgA nephropathy was the most common NDRD diagnosis in 16 studies, membranous nephropathy in 9, focal segmental glomerulosclerosis in 6, and acute interstitial nephritis in 4.

The positive predictive value of renal biopsy was 50.1% for diabetic nephropathy, 36.9% for NDRD, 19.7% for mixed diagnoses, and 49.2% for the combination of nondiabetic and mixed kidney disease. On metaregression, factors explaining heterogeneity for NDRD were systolic blood pressure, HbA1c, duration

of diabetes, and diabetic retinopathy. In contrast, for diabetic nephropathy, serum creatinine was the only explanatory factor. Crude odds ratio for detecting diabetic nephropathy at renal biopsy was 69% higher than that for NDRD, and more than four times higher than that for mixed kidney disease.

There is ongoing controversy over the value of renal biopsy in patients with diabetes; its performance is commonly based on opinion or institutional policy. Rapidly declining kidney function or unusual clinical features in diabetic patients may lead to a “clinical diagnosis” of diabetic nephropathy. However, many such pa-

tients may have NDRD or a mixed diagnosis requiring different management.

This review and meta-analysis suggests a “seriously high” prevalence of NDRD on renal biopsy in patients with suspected diabetic nephropathy.

“Clinical judgment alone can lead to wrong diagnoses and delay the establishment of adequate therapies,” the researchers write. They highlight the need for further studies to better identify patients who can benefit from renal biopsy [Fiorentino M, et al. Renal biopsy in patients with diabetes: a pooled meta-analysis of 48 studies. *Nephrol Dial Transplant* 2017; 32:97–110]. ●



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