Findings

Prediabetes linked to increased risk of hyperfiltration and albuminuria

Middle-aged adults with prediabetes are at increased risk of developing glomerular hyperfiltration and albuminuria, reports a study in *The American Journal of Kidney Diseases*.

The researchers analyzed prospective data on a general population sample of 1261 Norwegian adults drawn from the Renal Iohexol Clearance Survey in Tromsø 6 (RENIS-T6) Study and the RENIS Follow-Up Study. At baseline, subjects were 50 to 62 years old and free of diabetes. On the basis of fasting glucose and hemoglobin A1c levels, 595 participants had prediabetes according to American Diabetes Association criteria, and 169 participants had prediabetes according to International Expert Committee of 2009 (IEC) criteria.

At a median follow-up of 5.6 years, change in measured GFR (mGFR) was compared between groups; hyperfiltration was defined as mGFR above the 90th percentile adjusted for age, sex, height, and weight. Rates of high-normal urinary albumin-to-creatinine ratio (ACR; greater than 10 mg/g) were assessed as well.

On multivariable analysis, both sets of prediabetes criteria predicted an increased mGFR at follow-up and a lower annual rate of decline in mGFR. Baseline fasting glucose and HbA1c were also significant predictors. In the smaller group of patients meeting IEC criteria, odds ratios were 1.92 for hyperfiltration and 1.83 for high-normal ACR. The associations remained significant after adjustment for baseline BP, use of antihypertensive medications, and other cardiovascular risk factors [Melsom T, et al. Prediabetes and risk of glomerular hyperfiltration and albuminuria in the general nondiabetic population: A prospective cohort study. *Am J Kidney Dis* 2016; 67:841–850].

What happens to kidney donors who develop ESRD?

A high proportion of living kidney donors who have developed ESRD are never waitlisted for kidney transplantation, reports a study in *Transplantation* that was part of a special issue on living organ donation.

Using data from the Scientific Registry of Transplant Recipients, the researchers identified 96,127 individuals who donated kidneys between 1994 and 2011. Of these, 99 developed ESRD. Median age at diagnosis of ESRD was 50 years old; 56 percent of patients were men, and 34 percent were black. Causes of ESRD were GN in 29.3 percent of donors, hypertension in 24.2 percent, diabetes in 5.1 percent, and other causes in 41.4 percent. Median times to developing ESRD in these groups were 7.4, 12.0, 9.9, and 9.6 years, respectively.

Initial treatment for ESRD was dialysis in 78 patients. Thirty-seven patients were waitlisted for kidney transplantation, and two received a live donor transplant without being listed. Twenty patients were listed pre-emptively, 19 of whom received a transplant. The remaining 39 patients were never listed and never received a transplant.

The donors were waitlisted earlier than a matched group of nondonors with ESRD (median of 14 versus 120 months) and transplanted earlier (2.8 versus 21.5 months). Donors were less likely than controls to receive a live donor kidney (13 versus 39 percent) and more likely to receive a standard criteria deceased donor kidney (87 versus 50 percent). The two groups had similar posttransplant graft and patient outcomes.

Living kidney donors have a "demonstrated, albeit low" risk of ESRD. This national study finds that living donors who develop ESRD are waitlisted and transplanted faster than matched nondonor controls. However, about 40 percent of donors with ESRD are never waitlisted, leading to very high mortality. This finding "warrants further study to ascertain why these donors with ESRD never gained access to the waiting list," the researchers write [Muzaale AD, et al. Outcomes of live kidney donors who develop end-stage renal disease. *Transplantation* 2016; 100:1306–1312].