Findings

How Much Faster Does Renal Function Decline in People with Diabetes?

Kidney function declines twice as rapidly in adults with versus without diabetes. According to the study used data on 15,517 racially diverse participants enrolled in the Atherosclerosis Risk in Communities study, with four study visits between 1988 and 1999 and 2011 to 2013. At baseline, 88% of participants were free of diabetes, 4% had undiagnosed diabetes, and 8% had diagnosed diabetes. Those in the two diabetes groups were older, more likely to be black, more likely to have hypertension and coronary heart disease, had a higher mean body mass index, and had a lower mean high-density lipoprotein cholesterol. Serial eGFR measurements over 26 years of follow-up were analyzed to characterize patterns of diabetes-related eGFR decline, along with risk factors associated with more rapid decline in kidney function. On adjusted analysis, eGFR declined by a mean of −1.4 mL/min/1.73 m²/year in participants without diabetes compared to −1.8 mL/min/1.73 m²/year in those with diabetes. The more rapid eGFR decline in the diabetes groups remained significant after adjustment for diabetes- and kidney-disease-related risk factors. In the diagnosed diabetes group, factors associated with more rapid eGFR decline were African American race, APOL1 high-risk genotype, systolic blood pressure 140 mm Hg or higher, insulin treatment, and higher glycated hemoglobin. Diabetics may contribute to half of all cases of ESRD, but relatively little is known about patterns of decline in kidney function before the development of advanced kidney disease. These community-based data confirm that diabetes is a major risk factor for decline in kidney function, with declines in eGFR occurring nearly twice as fast in adults without diabetes. The study identifies potentially modifiable risk factors for diabetes-related decline in kidney function, particularly hypertension and glycosylated control [Warren B, et al. Diabetes and trajectory of estimated glomerular filtration rate: a prospective cohort analysis of the Atherosclerosis Risk in Communities Study. Diab Care 2018; https://doi.org/10.2337/dc18-0277].