Increased Stroke Risk in Long-Term Dialysis Patients

Patients receiving long-term hemodialysis or peritoneal dialysis are at substantially increased risk of stroke, reports a study in the American Journal of Kidney Disease.

The retrospective cohort study included approximately 74,000 hemodialysis patients and 6000 peritoneal dialysis patients in Taiwan, along with 670,000 control individuals not receiving dialysis. Both groups were drawn from a national insurance research database; the participants had no history of stroke or cancer at baseline. The rates of initial hospitalization for ischemic or hemorrhagic stroke, as either a primary or a secondary diagnosis, were assessed.

The incidence of hospitalization for ischemic stroke (per 10,000 person-years) was 102.6 in hemodialysis patients and 100.1 in peritoneal dialysis patients, compared with 42.5 in age- and sex-matched control individuals. For hemorrhagic stroke, the rates were 42.4 in hemodialysis patients and 59.4 in peritoneal dialysis patients, compared with 13.0 in the reference group.

In addition to dialysis, older age, male sex, diabetes, and hypertension were independent risk factors for both types of stroke. On adjusted analysis, including competing risks of death and propensity score matching, hemorrhagic stroke risk was one fourth lower in patients receiving peritoneal dialysis versus those receiving hemodialysis: hazard ratio 0.75. Ischemic stroke risk was not significantly different between the two dialysis groups.

The study helps to clarify the excess stroke risk associated with maintenance dialysis. Ischemic stroke risk is higher in hemodialysis and peritoneal dialysis patients than in population control individuals. Both groups are also at increased risk of hemorrhagic stroke, although peritoneal dialysis patients are somewhat less so. "Comprehensive control of hypertension and diabetes is necessary when delivering dialysis treatment," the investigators conclude [Wang H-H, et al. Risk of stroke in long-term dialysis patients compared with the general population. Am J Kidney Dis 2014; 63:604–611].

No Benefit of Renal Denervation for Refractory Hypertension


The randomized, single-blind SYMPLICITY HTN-3 trial included 535 patients with severe resistant hypertension despite maximally tolerated doses of three or more drugs including a diuretic. In a 2:1 ratio, patients were assigned to catheter-based renal denervation or a sham procedure. The effects on blood pressure at follow-up were assessed, along with safety outcomes.

At 6 months, the mean change in office systolic blood pressure (the primary efficacy outcome) was 14.13 mm Hg in the renal denervation group versus 11.74 mm Hg in the sham group. There was also no significant difference in 24-hour ambulatory systolic blood pressure response: 6.75 and 4.79, respectively.

Analysis of diastolic blood pressure showed similar patterns. The rates of a composite safety outcome of death, ESRD, and other serious complications were not significantly different.

Unblinded studies have suggested a benefit of renal denervation for severe hypertension that is resistant to medical therapy. However, this single-blind trial found no significant difference in systolic blood pressure at 6 months’ follow-up. The authors discuss possible reasons for the discrepant results compared with