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 Diseases.

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 SYMPLECTIC 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...

HbA1c Doesn’t Aid Risk Prediction in Nondiabetic Patients

Glycated hemoglobin (HbA1c) does not provide additional information on cardiovascular risk in patients without diabetes or cardiovascular disease (CVD), suggests a meta-analysis in the Journal of the American Medical Association.

The meta-analysis included individual-level data on 294,998 participants, all initially without known diabetes or CVD, from 73 prospective cohort studies. Glycated hemoglobin level was evaluated as a predictor of initial cardiovascular events in patients in different 10-year cardiovascular risk categories: low, less than 5 percent; intermediate, 5 percent to less than 7.5 percent; or high, 7.5 percent or greater. The analysis included measures of risk discrimination and reclassification.

The data included 20,840 fatal and nonfatal CVD events—13,237 coronary heart disease and 7,603 stroke outcomes—at a median follow-up time of 9.9 years. After adjustment for some conventional cardiovascular risk factors, the slope of the association between HbA1c and CVD risk was approximately J-shaped. There was little effect of further adjustment for total cholesterol and triglyceride levels or estimated GFR. The association was attenuated by adjustment for high-density lipoprotein cholesterol and C-reactive protein.

Risk discrimination was little improved by the addition of HbA1c data to a model incorporating conventional cardiovascular risk factors, and net reclassification improvement was not improved at all. The results were similar in all 10-year CVD risk categories. The additional risk information from HbA1c was similar to or greater than that provided by fasting, random, or postload plasma glucose levels.

Higher levels of glycemia have been linked to increased CVD risk, suggesting a role of HbA1c for cardiovascular risk assessment in asymptomatic, nondiabetic adults. However, the new analysis showed limited value of adding HbA1c to conventional models for predicting initial CVD events. The authors call for further studies to evaluate the significance of the “consistent J-shaped associations between various glycemia measures and CVD incidence” [The Emerging Risk Factors Collaboration. Glycated hemoglobin measurement and prediction of cardiovascular disease. JAMA 2014; 311:1225–1233].

ACEIs, but Not ARBs, Reduce Mortality in Patients with Diabetes

Two classes of renin-angiotensin system blockers have differing effects on mortality in diabetic patients, concludes a meta-analysis in JAMA Internal Medicine.

A systematic review identified 35 randomized trials evaluating the effects of renin-angiotensin system blockers on all-cause and cardiovascular mortality and major cardiovascular events in patients with diabetes. There were 23 trials comparing angiotensin-converting enzyme inhibitors (ACEIs) with placebo or active drugs, including 32,287 patients, and 13 trials comparing angiotensin II receptor blockers (ARBs) with no treatment, including 23,867 patients. The outcomes with ACEIs and ARBs were separately evaluated in random-effects meta-analyses.

With ACEIs, there were significant reductions in all-cause mortality, odds ratio (OR) 0.87; cardiovascular death, OR 0.83; and major cardiovascular events, OR 0.86. The reduction in cardiovascular events was significant for both

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