Carotid Endarterectomy Beats Stenting at 30 Days

In a metaanalysis, rates of periprocedural death and stroke were higher in patients treated with stents.

BY MITCHEL L. ZOLER
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PHILADELPHIA — The periprocedural rate of death or stroke in patients undergoing carotid artery stenting was about 40% higher than for similar patients who had a carotid endarterectomy, on the basis of a metaanalysis that included data from seven trials with nearly 3,000 patients.

This is the first statistically significant difference seen in serious adverse events during the first 30 days following treatment with these two alternatives for managing clinically significant carotid stenosis. The new analysis included recently reported results from two European studies, which together doubled the number of patients available for the combined analysis, Dr. Hans-Henning Eckstein said at the Vascular Annual Meeting.

He cautioned that the finding was from a preliminary analysis that included as-yet unpublished data.

In addition, "we have to wait for at least 2 years, and even better would be to wait for 3, 4, or 5 years to look at stroke prevention" by the two interventions, said Dr. Eckstein, head of the division of vascular surgery at the Technical University of Munich. But, he added, the new metaanalysis and its focus on the rate of 30-day death or stroke is useful for helping patients select the type of carotid intervention they would prefer.

Until this spring, five reported studies had compared carotid artery stenting with endarterectomy in randomized, controlled trials. These five studies involved a total of 1,269 patients, and a metaanalysis published about a year ago, showed that the incidence of any stroke or death during the first 30 days was 33% higher in patients treated with stenting, compared with those who had endarterectomy (Stroke 2005;36:905-11). But this difference did not reach statistical significance.

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One of the new studies, the Stent-Protected Percutaneous Angioplasty of the Carotid vs. Endarterectomy (SPACE) trial, included 1,183 patients, who were treated at any of 37 medical centers in Germany, Austria, or Switzerland.

All of the SPACE patients were symptomatic (with amaurosis fugax, a transient ischemic attack, or a stroke within the previous 180 days) and also had at least 50% stenosis in their carotid artery based on the criteria of the North American Symptomatic Carotid Endarterectomy Trial (NASCET).

Patients who were randomized to stenting could be treated with any of three different carotid stents: the Acculink, the Precise, or the Wallstent. Treatment with an embolic-protection device was optional, and was used on about a third of the patients. The outcomes of the patients treated with embolic-protection devices were no different from those in whom no device was used. The study was primarily sponsored by the German Ministry of Science, but it also received support from Guidant Corp., which markets the Acculink stents, and from Boston Scientific Corp., which markets the Wallstent.

The periprocedural rate of death or stroke was 6.84% in the patients treated with carotid stenting and 6.34% in those treated with endarterectomy—a nonsignificant difference Dr. Eckstein reported.

Results from a similarly designed French study were reported in mid-May at the European Stroke Conference in Brussels. The Endarterectomy vs. Angioplasty in Patients with Symptomatic Severe Carotid Stenosis (EVA-3S) study enrolled 520 patients. The 30-day rate of death or stroke was 9.6% in 261 patients treated with carotid stenting and 3.9% in those treated with endarterectomy.

When the results of both the SPACE and EVA-3S trials were added to the previously reported metaanalysis results, the overall numbers showed an 8.2% periprocedural death or stroke rate among 1,492 patients treated with stenting, and a 5.9% rate among 1,480 patients treated with endarterectomy, a significant difference.

"I'm sure there will be a place for carotid stenting in the future," but randomized, controlled trials against endarterectomy must be done to determine its proper role, Dr. Eckstein said.

In addition, there may now be enough experience in the metaanalysis database to run stratified analyses and identify which subgroups of patients did best. The experience and technique of the operators will also be an important factor. In the multicenter results that Dr. Eckstein reported, there was a clear difference in outcomes among the centers; one hospital had a perioperative event rate of more than 20%. ■

Repair for High-Risk Aneurysms

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the repairs required conversion to open surgery. The five unsuccessful patients included one who died immediately after the procedure and four with vessels that could not be accessed because of occlusions or tortuosity.

Because these are complex procedures, the average duration was 320 minutes. The average fluoroscopic time for each patient was 74 minutes, and each patient received an average of 210 mL of contrast medium. The median length of hospitalization after treatment was 9 days.

Of the treated patients, four died in the 30 days following their procedure, and another six died during later follow-up. The actuarial survival rate was 85% after 6 months and 81% after 1 year. Freedom from aneurysm-related death was 89% at 12 months after treatment.

Major complications occurred in 15 patients, including 5 with prolonged intubation, 4 with perioperative myocardial infarctions, 2 with spinal cord injuries, and 1 with stroke.

During follow-up, there were no documented graft migrations, barb fractures, or component separations.

All 10 patients who were followed for 12 months showed aneurysm regression of more than 5 mm, which provided evidence that this repair could reverse the natural history of the disease, Dr. Roselli said. ■

EVAR for Ruptured Abdominal Aortic Aneurysms Cuts In-Hospital Deaths, Bleeds

BY MITCHEL L. ZOLER
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PHILADELPHIA — Endovascular aneurysm repair should be used more aggressively to treat ruptured abdominal aortic aneurysms, Dr. Richard W. Lee said at the Peripheral Vascular Surgical Society session at the Vascular Annual Meeting.

A 4-year, single-center experience repairing ruptured abdominal aortic aneurysms (AAA) suggested that endovascular aneurysm repair (EVAR) resulted in a lower mortality rate during initial hospitalization, compared with open repair. Surgeons at Strong Memorial Hospital and the University of Rochester (N.Y.) tended to use EVAR in patients who had hemodynamic stability. The best reason to use EVAR is the right aortic anatomy in the patient, but the review showed that an anatomic assessment was not always used to guide the choice of repair, said Dr. Lee, a vascular surgeon at the University of Rochester.

The chart review included 52 patients with a ruptured AAA who were treated at the University of Rochester during June 2002 through March 2006. The series included 17 patients who were treated with EVAR, 20 who underwent an infrarenal open repair, and 15 who had a pararenal open repair.

Death while in hospital occurred in 35% of patients treated with EVAR, 47% of patients who had a pararenal repair, and 75% of those with an infrarenal repair. Estimated blood loss and hospital length of stay were also reduced by EVAR (see box).

The overall 54% in-hospital mortality rate in the series compares with a 53% rate at the same hospital during the 4 years immediately before June 2002, Dr. Lee said.

Although EVAR appeared to cut the rate of perioperative mortality, the review raised the question of whether this finding was primarily caused by a selection bias, with a higher proportion of hemodynamically stable patients undergoing EVAR.

Among the 17 patients treated with EVAR, 53% were stable, compared with 33% of patients who had pararenal repair and 25% of those who had infrarenal repair. Hemodynamic instability was defined as a systolic blood pressure of less than 120 mm Hg, a heart rate of more than 100 beats/minute, and a respiration rate of 20 breaths/minute or greater.

But EVAR appeared to result in better survival even among unstable patients. In this subgroup, EVAR led to a 25% mortality rate, compared with a 40% death rate following pararenal repair and a 73% mortality rate following infrarenal repair.

The series review also showed that about half of the patients who underwent open repair had an aneurysm anatomy that was amenable to EVAR. In order to ensure that patients who are suitable are given the EVAR option, get a CT scan on all patients and then decide whether EVAR is possible based on the patient's anatomy, Dr. Lee said. ■

Repair Outcomes for Ruptured Abdominal Aortic Aneurysms

Type of Repair	Number of Patients	Estimated Blood Loss	Hospital Length Of Stay
Endovascular	17	790 mL	10.7 days
Pararenal open repair	15	6,675 mL	29.5 days
Infrarenal open repair	20	5,387 mL	25.8 days

Source: Dr. Lee