Stenting Was Good Fallback In Large-Vessel Strokes

BY MITCHEL L. ZOLER

FROM THE INTERNATIONAL SYMPOSIUM ON ENDOVASCULAR THERAPY

MIAMI BEACH – Deployed stents produced unexpectedly good outcomes in a series of 19 stroke patients with large-vessel occlusions that resisted recanalization by more conventional treatments.

"Stenting is a safe and very effective option," Dr. Italo Linfante said at the meeting. In the series of 19 patients he reported, 8 (42%) had a modified Rankin score of 2 (slight disability) or less at 90 days after stent placement after failing recanalization with intra-arterial tissue plasminogen activator (tPA) as well as treatment with either the Merci clot retriever or the Penumbra clot suction device.

Without stent treatment as a last resort, expected mortality in the series would have been about 90%, said Dr. Linfante, director of interventional neuroradiology at the Baptist Cardiac & Vascular Institute in Miami Beach. This series included five deaths – a 26.3% mortality.

"These are desperate cases." When clot lysis or removal fails "there is nothing else to do" but try stent deployment or stent placement and retrieval, Dr. Linfante said in an interview. For patients with large-vessel occlusions, "we usually try one or two passes with a device," either Merci or Penumbra, but this fails in about 40% of patients, who then immediately become candidates for stenting.

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DR. LINFANTE

Stenting was also relatively safe, with no device-related complications. The five deaths comprised three patients who died from hemorrhagic transformations and two who died from large ischemic infarctions. Dr. Linfante attributed the hemorrhages to delayed recanalization rather than to any stenting-related problems.

"Some patients had huge strokes. You can open their arteries beautifully, but it's too late because by the time you have tried everything else and then go to a stent you're already 2 hours into the procedure. Then when you open the artery it's either too late or the patient bleeds," he said.

Selected patients with large-vessel strokes are likely good candidates for immediate stenting, an approach that would avoid delaying treatment with failed attempts to remove the clot, he added. But currently, no evidence-based method exists for identifying which stroke patients with large-vessel occlusions are likely to fail conventional clot-removal treatments.

VITALS

Major Finding: In a series of patients with large-vessel strokes who failed conventional treatment, deployment of either a Wingspan or Enterprise stent resulted in TIMI grade 2 or 3 blood flow in 95% of treated patients. At 90 days after treatment, 42% of patients had a modified Rankin score of 2 or less.

Data Source: Single-center series of 19 patients with large-vessel strokes who failed initial treatment with a combination of intra-arterial tissue plasminogen activator and attempted clot removal using either the Merci or Penumbra devices.

Disclosures: Dr. Linfante said that he has served as a speaker for or as a consultant to Codman (the company that markets the Enterprise stent), Micrus Endovascular, and Surpass Medical.

In Dr. Linfante's experience, clot removal typically fails in patients with occlusions that also involve a substantial amount of plaque. As experience with acute stroke stenting grows and more reports appear in the literature it will become easier to skip an attempt at clot removal in such patients and proceed directly to stenting, he said.

Dr. Linfante treated the 19 patients in his series during August 2008–September 2010. They ranged in age from 28 to 91 years, with an average age of 65 years. Their average NIH stroke scale score was 18, with one patient having a score as high as 28. All had complete obstructions with no blood flow in their affected vessel. Ten patients had obstructions at the M1 level of the middle cerebral artery; in four, the block occurred at the terminus of the internal carotid, three had occlusions of their basilar artery, and two had tandem occlusions in both the middle and internal carotid arteries.

Despite the time needed for the initial, failed attempts at clot removal, 14 patients underwent stenting within 8 hours of symptom onset. Thirteen patients received a Wingspan stent (Boston Scientific), the only stent with approval from the Food and Drug Administration for use in stroke occlusions, Dr. Linfante said. In six patients, vessel tortuosity prevented deployment of a Wingspan stent and so he used an Enterprise stent (Codman).

In 13 patients (68%), stenting resulted in TIMI 3-level blood flow through the affected vessel, and in another five patients it produced TIMI 2 flow. In the final patient from the series stenting led to TIMI 1 flow. In addition to the eight patients who had a modified Rankin score of 2 or less 90 days after treatment, another four patients had a modified Rankin score of 3 (moderate disability) at follow-up. ■

Thrombectomy for Acute MI Not Yet Embraced

BY MITCHEL L. ZOLER

FROM THE ANNUAL SCIENTIFIC SESSIONS OF THE AMERICAN HEART ASSOCIATION

CHICAGO – Most interventional cardiologists remain wary of using thrombus aspiration as initial treatment for an acute myocardial infarction, despite the striking mortality benefit reported for this approach in a single-center study more than 2 years ago.

"Interventional cardiologists feel that a definitive randomized, controlled trial is needed," according to results from an Internet-based survey with responses from 477 interventionalists, Dr. Sanjit S. Jolly said at the meeting.

Based in part on the equipoise the survey revealed among interventionalists between aspiration thrombectomy followed by percutaneous coronary intervention (PCI), and PCI alone, for treating an acute myocardial infarction, Dr. Jolly said that he and his associates began TOTAL, a multicenter Trial of Routine Aspiration Thrombectomy With Percutaneous Coronary Intervention versus PCI Alone in Patients With ST-Segment Elevation Myocardial Infarction Undergoing Primary PCI.

The researchers designed TOTAL to randomize 4,000 patients, said Dr. Jolly, a cardiologist at McMaster University in Hamilton, Ont. He said they hope to have the study completed within the next 2 years.

VITALS

Major Finding: Survey results showed that 36% of responding interventional cardiologists routinely use aspiration thrombectomy when treating patients with an acute ST-segment elevation myocardial infarction.

Data Source: Internet-based survey with responses from 477 interventional cardiologists worldwide.

Disclosures: TOTAL is using the Export catheter, which is marketed by Medtronic. Medtronic is cofunding this trial along with the Canadian Network and Centre for Trials Internationally. Dr. Jolly said that he has received grant support from Medtronic, and has received speakers' honoraria from GlaxoSmithKline, Sanofi-Aventis, and Boehringer Ingelheim.

Aspiration thrombectomy as initial treatment for an acute ST-segment elevation myocardial infarction burst onto the scene in June 2008 with the publication of results from the Thrombus Aspiration During Percutaneous Coronary Intervention in Acute Myocardial Infarction Study (TAPAS), which involved 1,071 patients treated at the University Medical Center Groningen (the Netherlands).

In that study, at 1 year after treatment, the rate of cardiac death reached 3.6% in the patients randomized to thrombectomy plus PCI and 6.7% in those treated by standard PCI alone. The difference was statistically significant (Lancet 2008;371:1915-20).

This "unexpected" substantial advantage in favor of thrombectomy "created a lot of press," Dr. Jolly commented.

However, a subsequent meta-analysis of thrombectomy for treating acute myocardial infarctions that included 21 studies (including the results from TAPAS) with a total of nearly 4,300 patients failed to find that adding thrombectomy led to a significant improvement in survival compared with primary PCI alone (Circ. Cardiovasc. Interv. 2010;3:6-16).

'Interventional cardiologists feel that a definitive randomized, controlled trial is needed.'

DR. JOLLY

To get a better sense of the worldwide use of thrombectomy, Dr. Jolly and his associates distributed their survey to 1,651 interventionalists worldwide and received 477 responses. The results showed that 36% of respondents reported using thrombectomy routinely along with PCI when treating patients with an acute ST-segment elevation MI.

This usage rate appeared similar in all world regions. The respondents most commonly used the Medtronic 6F Export aspiration catheter, the same device used in the TAPAS study. Of respondents, 80% said that they had the suction turned on before crossing the lesion, and 83% left it on as they withdrew the catheter.

In addition, 20% of the respondents said that they had at least one significant complication when using the device, "an important issue," Dr. Jolly said.

The most common specific complication cited was thrombus pulled back into the left main coronary artery, reported by 5% of respondents.

Finally, 89% of respondents said that they thought a large randomized trial should assess the safety and efficacy of aspiration thrombectomy in this setting, and 85% expressed a willingness to randomize their patients.

Even among cardiologists who said that they already routinely used thrombectomy for treating patients with an acute myocardial infarction, a similar, large majority voiced their preference for running the trial, Dr. Jolly said. ■