Diastolic Pressure, Cognitive Impairment Linked

BY SHARON WORCESTER
Southeast Bureau

NEW ORLEANS — Increased diastolic blood pressure levels are associated with cognitive impairment, findings from the Reasons for Geographic and Racial Differences in Stroke study suggest.

More than 27,800 participants from REGARDS—a long-term, ongoing study designed to investigate the reasons why stroke-related mortality is more common in portions of the southeastern United States (the "stroke belt") and among blacks—were included in the analysis. The patients were evaluated in an effort to identify associations between blood pressure indices and cognitive function, as well as any potential interactions between blood pressure indices and age in cognitive function, and any possible racial differences in the relationship between blood pressure and cognition, Dr. Georgios Tsivgoulis, lead author in this portion of the study, reported at the International Stroke Conference 2008.

Findings from previous studies have been conflicting in regard to such interactions, but in this very large cohort of patients, the relationship between diastolic blood pressure levels and cognitive impairment persisted even after adjusting for a host of demographic characteristics, environmental factors, vascular risk factors, health behaviors, and depressive symptoms (odds ratio, 1.08 per 10-mm Hg change for cognitive impairment with increased diastolic blood pressure), said Dr. Tsivgoulis of the University of Alabama at Birmingham.

No interactions were seen between blood pressure and age in impaired cognitive function, nor were racial differences noted in the associations between blood pressure and cognitive status, he said at the conference, which was sponsored by the American Stroke Association.

Participants were at least 45 years of age (mean age, 66 years in the current cohort), and lived in various areas across the United States, with oversampling in the stroke belt. Whites and blacks, as well as men and women, were equally represented.

Cognitive status was assessed using the 6-item screen derived from the Mini-Mental State Examination. Patients with a score of 4 or less were considered to have cognitive impairment. Cognitive status was validated against other cognitive measures for the diagnosis of dementia, and depression was assessed using the Center for Epidemiologic Studies Depression 4-item scale.

The findings suggest that careful monitoring and control of elevated blood pressure may contribute to the preservation of cognitive function, Dr. Tsivgoulis concluded.

The study was funded by the National Institute of Neurological Disorders and Stroke. ■

Mechanical Clot Removal Device Shows Promise for Stroke Prevention

BY SHARON WORCESTER
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NEW ORLEANS — A novel clot removal device appears safe and effective for revascularizing patients with acute ischemic stroke secondary to large vessel occlusion, according to results of a multicenter study of 125 acute stroke patients.

Of those patients in a prospective, single-arm trial designed to assess the safety and efficacy of the Penumbra System (Penumbra Inc.), 82% were successfully revascularized. Successful revascularization—the primary end point in the study—was defined as a change from a Thrombosis in Myocardial Infarction (TIMI) risk score of 0 or 1 to a score of 2 or 3 following treatment with the device, Dr. Cameron McDougall reported at International Stroke Conference 2008.

The Penumbra System comprises multiple device options, including a reperfusion catheter for aspirating clots, a separator designed to allow the reperfusion catheter to aspirate continually, and a thrombus removal ring designed to grasp and capture calcified clots that are not aspirated. The operator selects the appropriate device platform based on the nature of the thrombotic occlusion and the angio-architecture of the target vessel.

In the current trial (the Penumbra Stroke Trial), TIMI 2 or 3 revascularization scores were achieved in 81% of patients using only the aspiration device platform; only one patient required use of the extraction (clot grasping) device, for a revascularization rate of 82% when both were used, Dr. McDougall of Barrow Neurological Institute, Phoenix, reported.

A favorable outcome, defined as either a 4-point improvement on the National Institutes of Health Stroke Scale (NIHSS) at discharge, a 10-point improvement on the NIHSS (or a score of 0-1) at discharge, or a 90-day modified Rankin Scale score of 2 or less, occurred in 58%, 27%, and 25% of patients, respectively. Better outcomes occurred in those with a baseline NIHSS score of 20 or less, compared with those with higher scores (see graphic). All-cause mortality was 26% at 30 days, and 33% at 90 days.

The trend for improved outcome with revascularization was consistent across all neurologic functional measures, noted Dr. McDougall, who had no financial or other relationships to disclose.

The device also proved safe, he said at the conference, which was sponsored by the American Stroke Association.

Four procedural serious adverse events were reported in four patients, but none were attributed to the device, and no device malfunctions or breakage occurred. A total of 35 patients (28%) had intracranial hemorrhage at 24 hours, including 14 (11%) who were symptomatic.

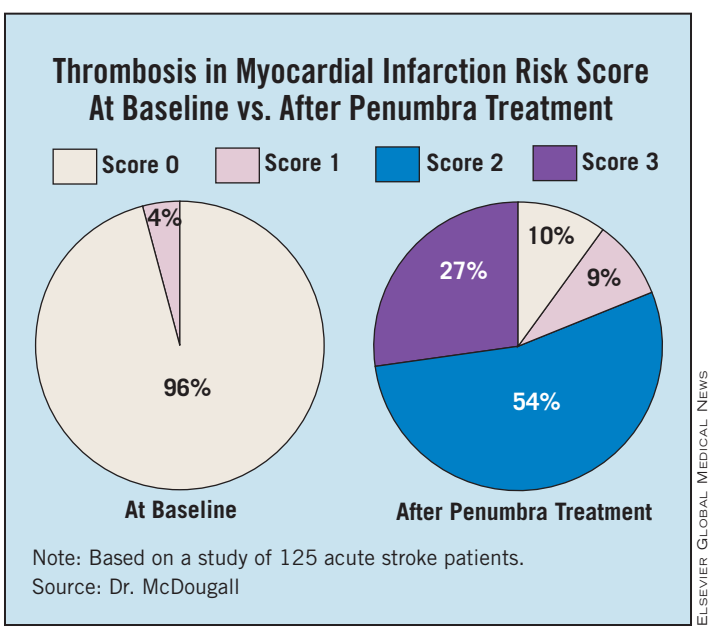
Patients in the trial had a mean age of 63 years, baseline NIHSS scores of at least 8, and presented within 8 hours of symptom onset. Those who presented within 3 hours of symptom onset had to be ineligible for, or refractory to recombinant tissue-type plasminogen activator (rTPA) therapy to be enrolled.

The target vessel was the internal carotid artery in 18% of patients, the middle cerebral artery in 70%, the vertebrobasilar artery in 9%, and another vessel in 3%.

The median time to arterial puncture from the time of symptom onset was 4 hours, and the median time to revascularization was 45 minutes.

Serious adverse events that occurred in study participants included two perforations, and two intracerebral hemorrhages, including one that was a result of perforation, for a serious adverse event rate of 3%.

Compared with historic controls from a trial of the Mechanical Embolus Removal in Cerebral Ischemia (MERCI) clot retrieval device—as established prior to the Penumbra Stroke trial—the outcomes with the Penumbra System were superior (82% vs. 48% recanalization rates). ■



Note: Based on a study of 125 acute stroke patients.
Source: Dr. McDougall

ELSEVIER GLOBAL MEDICAL NEWS

Controlling Hypertension After Stroke Cut the Risk Of Mortality at 3 Months

NEW ORLEANS — Treatment of dangerously high blood pressure in the period immediately following an acute stroke was associated with significantly reduced 3-month mortality in the randomized, placebo-controlled Control of Hypertension and Hypotension Immediately Post-Stroke trial.

Patients in the CHHIPS pilot trial did not immediately benefit from antihypertensive medications because the trial's primary end point—the rate of death and dependency at 2 weeks after the stroke—was no different between treated and placebo patients, even though the patients who received antihypertensive drugs had significantly greater decline in systolic blood pressure (SBP) within the first 24 hours than did those who received placebo, Dr. John Potter reported at International Stroke Conference 2008.

"We know that elevated blood pressure levels are important in predicting primary and secondary [stroke] prevention, but we don't know much about the relationship in the acute situation," said Dr. Potter of the University of East Anglia, Norwich, England.

Dr. Potter and his colleagues randomized 179 patients older than 18 years with a stroke onset within 36 hours and stroke symptoms lasting more than 60 minutes.

Patients who could swallow oral medications received 5 mg lisinopril, 50 mg labetalol, or oral placebo. If after 4 hours, their SBP had not dropped to a target range of 145-155 mm Hg or decreased by at least 15%, then the investigators gave another round of the same doses. If necessary, this was repeated at 8 hours if necessary. During the next 13 days, patients received 5-15 mg lisinopril, 50-150 mg labetalol, or placebo.

For dysphagic patients, the investigators combined sublingual lisinopril with an intravenous placebo, oral labetalol with sublingual placebo, or sublingual and intravenous placebos. Between days 1 and 5, dysphagic patients were switched to oral medications or received their medications through a nasogastric or percutaneous endoscopic gastrostomy tube.

Although the active treatment groups had a significantly greater mean decline in SBP than did placebo-treated patients within the first 24 hours (21 mm Hg vs. 11 mm Hg) and at 2 weeks (31 mm Hg vs. 24 mm Hg), there was no difference between the treatment groups in the rate of death and dependency at 2 weeks (61% vs. 59%).

Patients who received labetalol or lisinopril reached the target SBP outcomes in significantly higher proportions than did placebo-treated patients at 4 and 8 hours after stroke, but not at 24 hours. There were no differences in neurological status between the groups at 72 hours. However, patients who received placebo had a 2.2 times higher risk of dying by 3 months than did actively treated patients, Dr. Potter said at the conference, which was sponsored by the American Stroke Association.

—Jeff Evans