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Stroke prevention surgery less effective than meds, lifestyle change

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The final results of a stroke prevention study in patients with narrowed brain arteries confirm earlier findings: Medication plus lifestyle changes are safer and more effective at preventing stroke than a surgical technique called stenting.

Enrollment in the trial was halted two years ago when it became apparent that stenting was associated with a higher risk of early strokes and death.

"Surgical interventions often have increased risk of complications early on, so we continued to follow the patients to see if the long-term effects of surgery were beneficial," said lead author Colin Derdeyn, MD, professor of radiology at Washington University School of Medicine in St. Louis and director of its Stroke and Cerebrovascular Center at Barnes-Jewish Hospital. "That did not turn out to be the case."

The study, led by researchers at Washington University School of Medicine, the Medical University of South Carolina, Emory University and the State University of New York at Stony Brook, appears Oct. 26 in *The Lancet*. The same day, the researchers will present their findings at joint meetings of the 6th International Conference on Intracranial Atherosclerosis and the 6th annual meeting of the Society of Vascular and Interventional Neurology in Houston.

Each year in the United States, about 800,000 people have a stroke. Physicians think about 10 percent of those strokes result from a narrowed artery inside the brain. For decades, doctors have treated these

patients with medications that help to prevent clots by thinning the blood and with drugs to lower cholesterol and blood pressure.

Recent advances in surgical techniques and tools have allowed physicians to improve blood flow in narrowed brain arteries by adapting procedures used to open clogged arteries in the heart.

To assess the effectiveness of the new treatments, the SAMMPRIS (Stenting and Aggressive Medical Management for Preventing Recurrent Stroke in Intracranial Stenosis) trial, which was funded by the National Institutes of Health (NIH), enrolled 451 patients at high risk of having a repeated stroke. All participants had a brain artery with at least a 70 percent narrowing that had already caused a stroke or a transient ischemic event (often referred to as a mini stroke).

Participants were divided into two groups. In one group, each participant had a metal stent surgically inserted into the narrowed brain artery to open it up. Each also received strong medications to reduce clot formation and lower cholesterol and blood pressure. Participants in the second group received the same medications but did not receive stent implants. Both groups were contacted regularly by lifestyle modification coaches, who encouraged participants to exercise more, stop smoking, improve their diet and lose weight.

For the final analysis, the scientists followed the patients for at least two years after treatment. Some patients were followed for as long as four years.

"We were expecting that at some point the incidence of new strokes in those who had surgery would drop below that of those who did not, but that didn't happen," said Derdeyn, who was the neurointerventional principal investigator of the study. "This proves that medical therapy is better than surgery for these patients."

In August 2012, the early results of SAMMPRIS led the FDA to alter the criteria for using the "wingspan" stent tested in the trial.

"The new guidelines include restricting use of this stent to patients with at least a 70 percent blockage who already have had two previous strokes while on aggressive medical management," said Marc Chimowitz, MBChB, professor of neurology at the Medical University of South Carolina and neurological principal investigator of the study.

This small subset of high-risk stroke patients was not specifically assessed in the SAMMPRIS trial. But Chimowitz noted that the study did compare stenting with medical therapy in several other subsets and did not identify any that benefited more from stenting than medical therapy.

More information: Derdeyn et al. "Aggressive Medical Therapy With or Without Stenting in High-Risk Patients With Intracranial Artery Stenosis: Final Results of a Randomized Trial," Lancet, October 26, 2013.

Provided by Washington University School of Medicine