

Adding endovascular therapy to tPA didn't improve recovery after stroke

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Adding endovascular therapy to clot-busting therapy for stroke did not significantly improve stroke recovery at three months, according to a study presented in a special symposium at the American Stroke Association's International Stroke Conference 2013.

The lack of benefit was despite an approximately 40 percent greater likelihood of re-opening blocked arteries and improving blood flow to the brain with endovascular treatment added to intravenous (IV) treatment with the clot-busting drug [tissue plasminogen activator \(tPA\)](#), researchers said. "This is an important finding whether or not patients are eligible for IV tPA," said Joseph P. Broderick, M.D., study author and professor and chair of the Department of Neurology and [Rehabilitation Medicine](#) at the University of Cincinnati College of Medicine in Ohio.

"Endovascular treatment remains an important option for [acute stroke](#) since some patients with large intracranial occlusions cannot receive IV tPA during the 4.5-hour time window from stroke onset in which IV tPA is used. However, we need additional trials to better define the use of endovascular therapy."

Researchers had been hopeful that clearing vessel blockages with endovascular therapy would improve recovery from stroke.

Delivered through a vein in the arm, IV tPA is the only emergency [stroke treatment](#) proven to improve recovery. It must be given within 4.5 hours of [symptom onset](#) and faster start of treatment with IV tPA leads to better recovery.

Endovascular therapy involves inserting a catheter directly into a blocked artery in the brain to deliver clot-busting drugs or use a device to remove the clot. This treatment has been used in patients with bigger or more stubborn clots that have not dissolved with IV t-PA or after the 4.5-hour [time](#)

[window](#) of eligibility for treatment with intravenous clot-busting therapy.

In the Interventional Stroke Management III (IMS 3) trial, 656 patients received IV tPA within three hours of [stroke](#) onset and 423 were randomized to receive endovascular therapy in addition to IV tPA if a clot was revealed at angiography

Researchers compared 90-day recovery of the IV tPA-plus-endovascular treatment group to the IV tPA-only group to determine if patients' recovered "functional independence," which is a modified Rankin score of 2 or lower.

They found:

- No statistical difference in the proportion of patients achieving functional independence occurred between the two groups (40.8 percent of those receiving both therapies vs. 38.7 percent of those receiving IV tPA only).
- Patients with the most severe strokes and those with more rapid treatment tended to have better outcomes with endovascular treatment, but the differences were not significant.
- Death rates and bleeding in the brain that worsened the patients' clinical condition were similar for endovascular therapy and t-PA only groups.

Researchers ended the multicenter international trial early, with about two-thirds of planned participants enrolled. The trial was stopped in April 2012, after an interim analysis determined the additional therapy was highly unlikely to benefit patients.

A larger trial of patients with severe strokes and larger artery occlusions might show an effective use for endovascular therapy, researchers said.

Provided by American Heart Association

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