Does 'bridging' therapy improve outcome for people with stroke?

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There has been debate over the best treatment for a certain type of stroke caused by a blockage of a large artery in the brain. A new meta-analysis finds that people who have this kind of stroke who can be treated within four-and-a-half hours after their symptoms start may do better after their stroke when treated with both a clot-busting drug and

physical clot removal, compared to physical removal only. The research is published in the February 16, 2022, online issue of *Neurology*, the medical journal of the American Academy of Neurology. Combining the two therapies, called bridging therapy, was linked to better chances of a person surviving and living independently after stroke.

The most common type of stroke is an ischemic stroke, occurring when a vessel supplying blood to the brain is blocked. When the blockage is in a major artery, it is called a large vessel occlusion stroke. Large vessel occlusions of the anterior circulation, which were examined in this study, occur in the front of the brain and are a leading cause of adult disability.

Two-step bridging therapy involves the following: intravenous thrombolysis, injecting clot-busting drugs; and mechanical thrombectomy, a minimally invasive procedure in which the blood clot is removed through a small incision.

"For people with this kind of stroke, our analysis suggests that using clot-busting drug therapy combined with physical removal may be associated with better outcomes compared to treating people with physical removal of the clot only," said meta-analysis author Gabriela Trifan, MD, of the University of Illinois Chicago and a member of the American Academy of Neurology. "We found that bridging therapy was also linked to better chances for more robust blood flow returning to the brain after stroke, and in turn, better functional independence for people after stroke."

For the meta-analysis, researchers looked at 41 studies involving 14,885 people with large vessel occlusion strokes with an average age of 70. Of those, 8,238 people were treated with bridging therapy and 6,647 were treated with clot removal alone. The drug alteplase was used for the clot-busting therapy.

Researchers found that people who had bridging therapy had 29% higher

odds of being able to live independently after three months. Trifan said that would translate into an anticipated additional 62 people out of every 1,000 people who would be able to live independently with bridging therapy versus clot removal alone. The people receiving bridging therapy also had 24% higher odds of blood flow returning to the parts of their brain affected by stroke compared to people who had clot removal alone, which translated into an anticipated 34 additional people out of every 1,000.

People who had bridging therapy also had 31% lower odds of dying 90 days after their stroke compared to people who had clot removal alone. Trifan said this would translate to an anticipated 59 fewer deaths per 1,000 people.

When the researchers restricted the analyses to the latest six high-quality randomized clinical trials, they found that functional independence and safety outcomes were similar between bringing therapy and clot removal alone. "While these results are not strong enough to change practice at this time, they constitute a step forward into the concept of individualized medicine, where for selected patients in the appropriate clinical settings, clot removal may be as efficient and safe as bridging therapy," said Trifan.

The meta-analysis does not prove that people with this type of stroke will have better outcomes when treated with both therapies; it only shows an association.

"This meta-analysis demonstrates that bridging therapy is safe and does not increase the risk of hemorrhage or delay the start of clot removal," Trifan said.

A limitation of the meta-analysis is that alteplase was the only drug allowed in this analysis. In addition, the results are only applicable to

people who go to medical centers that provide thrombectomy.

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