

# Improvements within 1 hour of stroke treatment associated with better outcomes

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Patients with stroke who experience improvement within one hour of receiving the clot-dissolving medication tissue plasminogen activator appear more likely to do well three months later, according to a report in the November issue of *Archives of Neurology*.

Only one effective therapy has been approved for [acute ischemic stroke](#) (in which blood flow to an area of the brain is blocked or reduced), according to background information in the article. Within 4.5 hours of developing symptoms, patients receive an intravenous (IV) dose of the medication recombinant tissue plasminogen activator, which helps to break up clots in the [blood vessels](#). "However, not all patients respond to IV therapy; failure to respond to IV therapy is usually, but not always, associated with occlusion of large arteries and lack of recanalization [the formation of new blood vessel paths around the obstruction]," the authors write. "Additional IV thrombolysis [clot-dissolving] therapies, such as chemical and/or mechanical intra-arterial therapy, represent a promising approach to obtaining recanalization and better recovery."

Ioan-Paul Muresan, M.D., and colleagues at Assistance Publique—Hopitaux de Paris, France, analyzed 120 patients with acute ischemic [stroke](#) who were treated with IV recombinant tissue plasminogen activator between Nov. 11, 2002, and Dec. 24, 2007. Individuals were classified as having very early neurologic improvement at one hour if they had a National Institute of Health Stroke Scale score of zero at the end of medication administration or if their score had improved five or more points (on a severity scale of zero to 30)

compared with the beginning of therapy.

Of the 120 patients, 22 (18.3 percent) had very early neurologic improvement. After three months, 15 of these patients (68.2 percent) had a favorable outcome as assessed by a scale measuring disability following stroke, compared with 29 patients without early improvement (29.6 percent). None of the patients with very early improvement died, compared with 17.3 percent of other patients.

Asymptomatic brain bleeding occurred in two patients with early improvement (9.1 percent) and in 23 patients without early improvement (23.5 percent). Symptomatic brain bleeding occurred in five patients (4.2 percent), none of whom showed early improvement.

"A promising new approach in the treatment of acute ischemic stroke is bridging therapy with a dual approach: IV thrombolysis by recombinant tissue plasminogen activator followed by chemical or mechanical endovascular therapy," the authors write. "Our results suggest that very early neurologic improvement, as determined by a clinical routine tool (National Institutes of Health Stroke Scale) at a patient's bedside, might help to rapidly select patients who will not respond to IV recombinant tissue plasminogen activator but who could be candidates for bridging therapy."

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