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New guidelines recommend brain stents to fight strokes in certain patients

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New devices called stent retrievers are enabling physicians to benefit selected patients who suffer strokes caused by blood clots. The devices effectively stop strokes in their tracks.

For the first time, new guidelines from the American Heart Association/American Stroke Association recommend the treatment for carefully selected patients who are undergoing acute ischemic strokes and who meet certain other conditions.

Loyola University Medical Center stroke specialist Jose Biller, MD, is a member of the expert panel that wrote the guidelines, published in the journal *Stroke*. Dr. Biller is chair of the Department of Neurology of Loyola University Chicago Stritch School of Medicine. Lead author is William Powers, MD, neurology chair at the University of North Carolina at Chapel Hill.

About 85 percent of strokes are ischemic, meaning they are caused by clots that block blood flow to the brain. Treatment with the intravenous clot-busting drug tissue plasminogen activator (tPA) can restore blood flow before major brain damage has occurred, provided the drug is given within 4.5 hours of the onset of the stroke. But in many patients, intravenous tPA alone is not sufficient to restore blood flow. In such cases, mechanical devices deployed with catheters can be used to remove the clot from a cerebral artery.

The latest mechanical device is a stent retriever. The device is a self-

expanding mesh tube attached to a wire, which is guided through a catheter. The physician inserts the catheter in an artery in the groin and guides it through various blood vessels up to the blood clot in the brain. The stent retriever pushes the gelatinous blood clot against the wall of the blood vessel, immediately restoring blood flow. The stent retriever then is used to grab the clot, which is pulled out when the physician removes the catheter. This technique is known as an endovascular treatment.

Dr. Biller said intravenous tPA remains the first-line therapy for treating appropriate patients with acute ischemic strokes. "In carefully selected patients, endovascular treatment with a stent retriever can provide additional benefit," Dr. Biller said.

After reviewing results of six recent randomized clinical trials, the AHA/ASA expert panel recommended endovascular treatment for patients who are at least 18 years old; have suffered an acute, severe ischemic stroke; have a clot blocking a large artery supplying blood flow to the anterior circulation of the brain; and meet other criteria.

The guidelines say endovascular treatment is quite effective if begun within six hours of the onset of an acute ischemic stroke.

"Time is brain," Dr. Biller said. "In the right patient, treatment with intravenous tPA and a stent retriever potentially can reduce stroke damage significantly. Every effort should be made to treat these patients as early as possible by a multidisciplinary and integrated team of experts."

Provided by Loyola University Health System