

For release Monday, March 5, 2001

CLOT BUSTER MAY PROVIDE NEW HOPE IN TREATING STROKE

AT A GLANCE

- ✍ The clot-busting drug reteplase, approved for heart attack, appears to be effective in treating stroke, reducing complications and extending the treatment opportunity.
- ✍ Reteplase is a genetically engineered modification of tissue plasminogen activator (t-PA).
- ✍ More than 500,000 people suffer strokes each year and it is the third leading cause of death.

SAN ANTONIO — A clot-busting drug approved to treat heart attacks may also be effective for stroke, resulting in fewer complications and extending the treatment window from three to six hours, suggests preliminary data being presented here today at the 26th Annual Scientific Meeting of the Society of Cardiovascular & Interventional Radiology (SCVIR).

Reteplase, a genetically engineered modification of tissue plasminogen activator (t-PA), appears to break up stroke-causing clots a majority of the time when administered directly into the clot

in the brain by a specialist such as an interventional radiologist within six hours of the onset of stroke.

“Even though this is preliminary data in a handful of patients, a number of my colleagues nationwide have also been using reteplase for stroke and getting equally encouraging results. The lack of bleeding complications is very encouraging,” said John D. Barr, M.D., director of interventional neuroradiology at Baptist Memorial Hospitals, Memphis. The patients were treated at Cleveland Clinic, Ohio, Trumbull Memorial Hospital, Warren, Ohio, and at Baptist Memorial.

Currently, intravenous t-PA is the only clot-busting drug approved for treating stroke. Studies have shown the most common complication encountered with t-PA is bleeding.

More than 500,000 people suffer strokes every year, and stroke is the third leading cause of death. Blood clots that break off and travel to the brain, cutting off blood flow, are the major cause of stroke.

Neurological symptoms, including weakness and difficulty speaking, improved significantly in 6 of 9 patients (67 percent) treated with reteplase. One patient (11 percent) died two days after treatment as a result of the stroke, not from bleeding complications. Two patients (22 percent) had minor bleeding related to treatment, but this caused no new symptoms or problems.

T-PA is approved to treat stroke when administered intravenously. However, treatment must begin within three hours of the onset of stroke, meaning a patient must recognize the signs of stroke, report to a hospital that offers the clot-buster as a treatment, and receive imaging tests to determine that using clot-busting drugs would be appropriate treatment. Some strokes are caused by bleeding, rather than a clot, and should not be treated with the drugs, which could aggravate the problem.

Researchers have been studying the effectiveness of delivering the clot-busting drugs directly to the site of the clot, rather than infusing them through an IV. With this nonsurgical procedure, a physician, such as an interventional radiologist, makes a small nick in the skin of the groin to reach the femoral artery, inserts a catheter (a thin tube), and guides it to the site of the clot in the brain. A drug, such as reteplase, is infused through the catheter directly into the clot to break it up.

When infused intra-arterially, clot-busters can be used up to six hours after the onset of stroke, doubling the window of treatment time over intravenous infusion.

Reteplase is “basically a t-PA molecule chopped in half,” said Dr. Barr. Reteplase appears to be more similar than t-PA to an older drug, urokinase, which is no longer available in the United States. Many physicians have been concerned that substitution of t-PA for urokinase is associated with more bleeding complications.

Retepase is FDA-approved for intravenous infusion to treat heart attack.

Risk factors for stroke include: older age (stroke risk doubles each decade past age 55), being male, having diabetes, being African-American or having a family history of stroke. People with high blood pressure, atrial fibrillation (rapid heart beat), coronary heart disease or high cholesterol are also at increased risk. Excessive alcohol consumption, smoking and being overweight are common risk factors.

Untreated, stroke can cause brain damage, paralysis, memory problems, difficulties in speaking and a host of other problems, including death.

Co-authors of a paper based on the data being presented by Dr. Barr are R. Loges, M.D.; and M. Magdinec, M.D.

An estimated 5,000 people are attending the SCVIR Annual Scientific Meeting. The Society, based in Fairfax, Va., is the professional association for physicians who specialize in minimally invasive interventional radiology procedures.

An interventional radiologist is a physician who has special training to diagnose and treat conditions using miniature tools and imaging guidance. Typically, the interventional radiologist performs procedures through a very small nick in the skin, about the size of a pencil tip.

Interventional radiology treatments are generally easier for the patient than surgery because most involve no surgical incisions, less pain and shorter hospital stays.

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Editor's note: Numbers are current as of February 19, and may change upon presentation at the SCVIR annual meeting.

General consumer information on interventional radiology is available online at www.scvir.org.