

Clinical Trial Uses Bat Saliva Enzyme for Stroke Treatment

December 30 2008

(PhysOrg.com) -- Vampires aren't usually cast in the role of saviors, but stroke experts are hoping a blood thinner that mimics a chemical in vampire saliva will help save brain cells in stroke patients.

University of Wisconsin School of Medicine and Public Health is one of several centers worldwide currently enrolling patients in a large new clinical trial of desmoteplase, a drug based on an enzyme in vampire bat saliva.

The enzyme thins the blood of the bats' victims to prevent it from clotting as the bats feed. Its name comes from the scientific name for vampire bats, *Desmodus Rotundus*.

Early trials of the drug were encouraging that it may be able to extend the window of medical treatment up to nine hours after the onset of a stroke. The current gold standard for stroke treatment, alteplase, has been shown to be effective only up to four and one-half hours, and carries a risk of serious bleeding in a small percentage of patients.

Desmoteplase may be safer, and when used in combination with advanced brain-imaging techniques it may be effective hours later than the conventional clot-busting medicine.

After the initial promising findings, desmoteplase showed disappointing results in the second round of trials in which the entire group of patients taking it did only as well as those who got the placebo. But Dr. Matt

Jensen, a UW Health stroke neurologist, says that a more careful look at the data suggest that there may be some patients who are better suited for the drug.

"We think that there is a group of patients who may benefit," he says. "With more advanced imaging, we hope to be able to identify people who are more likely to respond to the drug."

In an ischemic stroke (the most common kind), a blood clot blocks an artery to part of the brain, and over several hours without oxygenated blood, the brain cells begin to die. But Jensen explains that some patients have better circulation to the brain that allows enough blood to get around the blockage through other arteries.

This can allow the brain cells to survive longer until the blood clot is broken up, and good blood flow is restored. Physicians at UW Hospital will use advanced imaging techniques using MRI (magnetic resonance imaging) and CT (computed tomography) to find stroke patients who are better candidates for later treatments.

Jensen says that the physicians of the UW Health Comprehensive Stroke Program take calls from around the state from doctors looking to help patients who arrive too late for the standard treatments.

"As part of this trial, we will be able to treat certain people up to nine hours after the onset of stroke symptoms," he said. "With ground and helicopter transfers we can get people here quickly and potentially offer them a chance for this investigational treatment."

The DIAS-III trial, Desmoteplase In Acute Ischemic Stroke, plans to enroll 302 patients between December 2008 and December 2010.

Jensen stressed that it can be difficult for patients to recognize that they

are having a stroke, and many people miss the chance for treatment by delaying getting medical evaluation in the nearest emergency department. The UW Health stroke site, www.uwhealth.org/stroke , has educational material including the following stroke warning signs, which should prompt an immediate 9-1-1 call:

- Sudden weakness or numbness of the face, arm or leg, especially on one side of the body
- Sudden confusion, trouble speaking or understanding
- Sudden trouble seeing in one or both eyes
- Sudden trouble walking, dizziness, loss of balance or coordination
- Sudden severe and unusual headache

Provided by University of Wisconsin

Citation: Clinical Trial Uses Bat Saliva Enzyme for Stroke Treatment (2008, December 30)
retrieved 27 April 2024 from
<https://medicalxpress.com/news/2008-12-clinical-trial-saliva-enzyme-treatment.html>

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