

Researchers to explore why there is a high risk of second stroke

November 9 2010

Neurological researchers at Rush University Medical Center are part of a multicenter, National Institutes of Health (NIH) study to determine the levels of stroke risk and stroke recurrence in patients with narrowed brain arteries.

In this first-of-its-kind study, called Mechanisms of Stroke in Intracranial Stenosis (MoSIS), non-invasive imaging tests such as ultrasound and quantitative magnetic resonance angiography will be used to see if experts can identify the causes of strokes in patients with intracranial atherosclerotic disease, which hardens arteries and narrows the blood vessels, thus preventing blood flow to parts of the brain.

Intracranial atherosclerosis disease (ICAD) is the most common cause of stroke worldwide, and each year, approximately 60,000 Americans experience intracranial atherosclerotic disease-related strokes. Risk of stroke recurrence due to intracranial atherosclerosis disease is estimated to be 25 percent within two years of initial stroke and the condition has only recently been systematically studied.

"This study aims to unravel the high-risk condition and explain why strokes are recurring at such an alarming rate," said Dr. Shyam Prabhakaran, co-principal investigator of the study and director of the stroke program at Rush. Prabhakaran, a neurologist at Rush, is also an assistant professor in the department of Neurological Sciences and is the head of the section of the cerebrovascular diseases and neuro-critical care.

"Currently, there are several mechanisms that we postulate that cause plaque formation and plaque particles to break off and lodge in blood vessels, which can cause stroke," said Prabhakaran. "The objective of this study is to understand the mechanisms that underlie stroke recurrence in intracranial atherosclerotic disease so we can identify those individuals at greatest risk for recurrent stroke."

Investigators will use transcranial Doppler imaging and quantitative magnetic resonance angiography, which are non-invasive imaging techniques that can assess brain blood flow characteristics and examine the intracranial arteries of patients who are being treated with medical therapies such as aspirin. Stroke rates with maximal medical therapy range from as low as 10 percent to as high as 30 percent per year, making intracranial atherosclerosis about four to five times more dangerous than an unruptured aneurysm. This is particularly the case in patients with greater than 70 percent narrowing.

The MoSIS study is a supplementary study to the Stenting versus Aggressive Medical Management for Preventing Recurrent Stroke in Intracranial Stenosis (SAMMPRIS) trial, which is the first study to look at the long-term benefits of inserting stents to open clogged arteries in the brain. Stroke experts from Rush along with researchers from the University of Miami will evaluate six specific mechanisms of stroke in the medically-treated subjects from the SAMMPRIS trial.

Researchers from the MoSIS trial will examine sudden [blood flow](#) changes, embolization caused by blood clots breaking off, or further progression of narrowing of the [blood vessels](#).

"With this gained knowledge from the MoSIS study, we hope that more targeted, individualized treatments may be developed to reduce [stroke risk](#) in patients with this condition," said Prabhakaran.

To be eligible for the MoSIS or SAMMPRIS trials, patients must be between the ages of 30 and 80 years, have had a [stroke](#) or TIA within 30 days, and have stenosis (narrowing) of a major intracranial artery (blood vessel in the brain).

Provided by Rush University Medical Center

Citation: Researchers to explore why there is a high risk of second stroke (2010, November 9) retrieved 16 January 2023 from <https://medicalxpress.com/news/2010-11-explore-high.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.