

Women, Mexican-Americans at higher risk of ruptured brain aneurysm

June 11 2008

A type of stroke that can strike at any age, and kills one-third of its victims, appears to be more common in women and Mexican-Americans than in non-Hispanic white men, according to a new study from the University of Michigan Stroke Program.

In a paper published online June 11 by the journal *Neurology*, the researchers report that women had a 74 percent greater chance of suffering a type of stroke related to a ruptured brain aneurysm. Mexican-Americans of both genders had a 67 percent greater chance.

The type of stroke measured in the study is called a subarachnoid hemorrhage, or SAH. The new research may help public health officials reach out to higher-risk groups with information on prevention and the importance of rapid treatment.

The new paper also gives a "real world" picture of the risk of dying from an SAH, which was nearly one in three in the geographic region in the study. That region, Nueces County, Texas, where the city of Corpus Christi is located, has a large Mexican-American population and does not have a major university health system.

Although African Americans and Asian Americans were included in the initial screening portion of the study, which reviewed the medical records of 6,550 stroke patients, their numbers were too small to assess any differences in risk of SAH.

"Physicians and public health officials should help Mexican Americans and women take steps that might prevent subarachnoid hemorrhage, and other types of stroke that have already been shown to be more common in these two groups," says senior author Lewis Morgenstern, M.D.

"Given that Mexican Americans are the largest and fastest-growing minority group in the United States, it's important to understand how this condition might affect them differently, and tailor messages to them."

Morgenstern, who directs the Stroke Program at the U-M Cardiovascular Center, is a professor of neurology and neurosurgery at the U-M Medical School, and of epidemiology at the U-M School of Public Health. The first author on the study, Sonia Eden, M.D., is a former chief resident in neurosurgery at U-M.

The study is the latest to arise from the BASIC project, whose name comes from Brain Attack Surveillance in Corpus Christi. The project involves surveillance for all strokes and mini-strokes in Nueces County, and detailed analysis of anonymous patient records.

Previously, using data from BASIC, Morgenstern and his colleagues have shown differences between ethnic groups and genders in other types of stroke – including the most common type, ischemic.

The new paper is based on data from 107 subarachnoid hemorrhage patients over the age of 44 who experienced their stroke between 2000 and 2006. All of their diagnoses were validated by neurologists who reviewed their records in detail.

The reasons for the ethnic and gender differences seen in the new study are unclear, because the researchers were able to account and adjust for blood pressure, age, excessive alcohol use, smoking and health insurance status.

In all, 40 percent of the 107 SAH cases were in non-Hispanic whites, although 52 percent of the over-45 population in the study area is non-Hispanic white. Meanwhile, 60 percent of the SAH cases occurred in Mexican Americans, who make up 48 percent of the population over age 45 in the study area.

At the same time, 67.3 percent of SAH patients were women, though 53.5 percent of the population in the area is female. The researchers found that Mexican American women had the highest risk.

Subarachnoid hemorrhages account for 3 percent of the 780,000 strokes that occur in the United States each year. Because these strokes arise from ruptured aneurysms, which are weak bulging spots in the brain's blood vessels that arise for unknown reasons at any stage of life, subarachnoid hemorrhages can occur at any time of life.

An SAH is different from the other type of "bleeding stroke," intracerebral hemorrhage or ICH, which can also result from a ruptured aneurysm or a misformed blood vessel called an arteriovenous malformation.

Both types of bleeding stroke are somewhat more dangerous than ischemic or "blockage" strokes, which result from a clot or other blockage inside a brain blood vessel. Ischemic strokes account for more than 85 percent of U.S. strokes.

The signs of an SAH usually include a sudden, extremely severe headache, often compared to a "thunderclap" inside the head. Patients may also experience neck pain, nausea and vomiting, or may lose consciousness.

No matter what the signs, a stroke or suspected stroke of any kind is a life-threatening emergency and needs immediate medical attention, says

Morgenstern. Although SAH carries daunting odds, it can be treated if a patient reaches a hospital where a neurosurgeon or interventional radiologist can close off the ruptured aneurysm and stop the bleeding.

Source: University of Michigan

Citation: Women, Mexican-Americans at higher risk of ruptured brain aneurysm (2008, June 11)
retrieved 9 May 2023 from

<https://medicalxpress.com/news/2008-06-women-mexican-americans-higher-ruptured-brain.html>

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