

Racial differences for brain bleeds suggest stroke risk greater than thought for blacks

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Small, clinically silent areas of bleeding in the brain appear to be more common in black versus white stroke patients hospitalized for new brain bleeds, say researchers at Georgetown University Medical Center. These findings may help explain the higher risk of hemorrhagic stroke among the black population, especially in those who are medically underserved.

So-called "microbleeds" are essentially drops of blood detected by magnetic resonance imaging (MRI) scans of the brain. This study of 87 stroke patients shows that blacks had 32 percent more microbleed than whites, investigators report in the October 7, 2008, issue of *Neurology*[®], the medical journal of the American Academy of Neurology. Black patients were also shown to have microbleeds in multiple areas of the brain more frequently than did white patients.

The researchers say these findings "are not surprising," considering that blacks are between two and three times more likely than other racial groups to suffer from a hemorrhagic stroke, the type of stroke caused by excessive bleeding. This type accounts for only 15 percent of all strokes, and research has shown that microbleeds are found in 50 to 80 percent of hemorrhagic strokes.

"This study suggests that there are significant racial differences in frequency in microbleeds associated with stroke, and we hope this new knowledge will help us better understand underlying risk factors in order to improve treatment and guide stroke prevention," says the study's lead author, Chelsea Kidwell, M.D., professor of neurology and medical

director of the Georgetown University Stroke Center.

In addition to race and age, the researchers found that hypertension and alcohol use were associated with microbleed frequency in the patients studied. "Race is the strongest risk factor, and hypertension clearly plays a role," she says. "But other unknown risk factors could also be involved, such as genetic susceptibility."

Kidwell also points out that the black patients who participated in the study were medically underserved, and that this study is the first one to detail the frequency and location of brain microbleeds in this population. Such a study is important, she says, "because it suggests that the burden of this kind of disease in blacks may be even greater than previously believed, and this will help physicians better care for stroke risk factors in this population."

With improved brain scanning technology that can detect tiny iron deposits, scientists have recently discovered these pinpoint drops of blood – smaller than a pen tip - in the brains of people who have had a stroke as well as in older patients with no discernable brain injury.

Microbleeds found near the outer surface of the brain have been associated with deposition of the amyloid protein in the blood vessels. This is the same protein that is found in great quantities in the brains of people diagnosed with Alzheimer's disease. Tiny bleeds deeper in the brain – in the mid and lower subcortical sectors - have been linked to hypertension, which is high blood pressure. Both of these types of bleeds are associated with intracerebral hemorrhages.

Few studies have compared the prevalence of microbleeds by race or ethnicity, so the Georgetown researchers set out to test if differences exist in the frequency and location of these bleeds between racial groups. They enrolled 87 patients receiving care at two Washington hospitals.

The researchers found that the 42 black patients studied were younger and more frequently had hypertension compared to the 45 older white patients. They also discovered that microbleeds were much more prevalent in the black patients: 74 percent had one or more microbleeds compared to 42 percent in white patients.

Furthermore, they found that while the location of the primary hemorrhage that caused a stroke did not differ by race, white patients had more surface microbleeds and black patients had more subcortical deep bleeds. And, importantly, 38 percent of black participants had a greater frequency of microbleeds in both the brain's outer layer and deep within, compared to 22 percent of white patients who demonstrated microbleeds in both areas.

"This is a small study, and we don't yet know the significance of the greater frequency of microbleeds in our black patients nor why they are located in several different brain areas," Kidwell says. "We would like to know if the presence, location, and quantity of these microbleeds provide information that can be used to better tailor patient care."

Source: Georgetown University Medical Center

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