

## Stroke risk factors may signal faster cognitive decline in elderly

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Older Americans with the highest risk of stroke, but those who have never suffered a stroke, also have the highest rate of cognitive decline, researchers reported at the American Stroke Association's International Stroke Conference 2008.

“Everyone knows that people lose some cognitive function as they age,” said George Howard, Dr.P.H., the principal investigator of the ongoing study. “We found that people at high risk of stroke, decline twice as fast as those persons considered at low-risk.”

Howard and his colleagues correlated the stroke risks of 17,000-plus study participants with the results from a simple cognitive test and found the stroke risk scores tracked closely with the average age-, race-, and gender-adjusted annual cognitive decline.

“The higher your stroke risk score, the more the cognitive decline,” said Howard, professor and chair of biostatistics at the University of Alabama in Birmingham. “This is important because it shows that if you have these stroke risk factors, even if you don't have a stroke, they are bad for you.”

Using the Framingham Stroke Risk Function (FSRF) assessment – which uses risk factors to estimate the chance of having a stroke in the next 10 years – researchers found that those with the highest stroke risk also had an accelerated rate of cognitive decline.

“The difference in the annual rate of cognitive decline between a person with a 2 percent chance of a stroke in the next 10 years and a person with at 22 percent chance was 95 percent as great as the average rate of cognitive decline – suggesting that this difference in the risk of a stroke roughly doubles the normal rate of decline,” Howard said.

The study is part of REGARDS (Reasons for Geographic and Racial Differences in Stroke), a novel, long-term research project that involves 30,000 African-American and white volunteers age 45 and older who live in the 48 contiguous states. Its main goal is to understand the high stroke death rate in the Southern United States – sometimes called the Stroke Belt – and among black Americans.

REGARDS is unique because everything from recruitment to follow-up – except for an in-home physical examination at enrollment – is done by telephone. Participants receive follow-up calls every six months to check their health status, including whether they had suffered a stroke or heart attack. A cognitive functioning assessment is conducted annually.

These preliminary findings came from one of several studies conducted by REGARDS researchers who analyzed cognitive data from 17,626 people (38.6 percent black) enrolled in the REGARDS study as of June 1, 2007. The participants had never suffered a stroke and had at least two cognitive assessments.

The participants were an average age of 65.9 and had average systolic blood pressure of 127.9. Fifty-six percent of them had hypertension; 19.3 percent had diabetes, 21.9 percent suffered from heart disease; 6.5 percent had left ventricular hypertrophy, and 13.1 percent smoked.

The cognitive assessment used in this study consisted of six questions, including giving study members three common words and asking them later in the telephone call to repeat them.

“A lot of people couldn’t remember the words,” Howard said. “If you extrapolate these effects, our findings suggest that would be an average 8 percent larger increase in missed questions after 10 years in the high-risk group,” he added. “That’s a large difference.”

Besides relating FSRF scores to cognitive decline, researchers also assessed the influence of the eight individual items that make up the FSRF. They identified three specific risk factors significantly associated with memory loss – high systolic blood pressure, diabetes, and left ventricular hypertrophy (the thickening of muscle in the heart’s main pumping chamber that often results from hypertension). Diabetes was associated with about a 56 percent increase in the rate of cognitive decline while left ventricular hypertrophy was associated with about a 60 percent increase in the rate of decline. A 31 mm Hg-higher level of blood pressure was associated with a 29 percent increase in the rate of cognitive decline, Howard said.

“Others have shown the Framingham Stroke Risk Function is related to cognitive decline,” Howard said. “I believe we are the first to say it’s because of these particular components.”

Identifying the three conditions could have important implications for slowing the age-related decline in mental functioning. “Physicians and patients should be as vigilant as possible in controlling hypertension and diabetes because it may slow cognitive decline,” Howard said.

He called this conclusion a logical assumption, but said a clinical trial is required to confirm it.

According to the American Stroke Association, there are two types of stroke risk factors – those you can change and those you can’t. Those you can’t change are age, heredity, gender and previous stroke. But factors that can be changed or treated include high blood pressure, cigarette

smoking, heart disease, diabetes, atrial fibrillation, high cholesterol, poor diet, physical inactivity and obesity.

Source: American Heart Association

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