Hypertension Treatment Can't Explain Stroke Rates

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NEW ORLEANS — Low levels of hypertension awareness and treatment do not explain why African Americans and people who live in the Stroke Belt have a high incidence of stroke and stroke mortality, based on findings from a nationwide epidemiologic study of more than 11,000 people.

But African Americans do show a substantial shortfall in hypertension control, compared with whites, which provides a major explanation for the large excess of strokes among blacks, George Howard, Dr.P.H., said at the annual International Stroke Conference.

Analysis showed that African Americans were 30% more likely to be aware of their hypertension than whites and 75% more likely to be on therapy for hypertension.

In contrast, hypertension is as well controlled among residents in the southern Stroke Belt as in other regions of the United States, indicating that factors other than hypertension must explain this disparity, said Dr. Howard, chairman of the department of biostatistics at the University of Alabama, Birmingham.

Dr. Howard also reported on results from a second epidemiologic study by that showed that the risk of stroke death faced by African Americans who live in the Stroke Belt far exceeds their expected risk based on race or residence alone.

"There is an interaction of race and geography that causes an extra 15%-20% of risk that we don't understand," said Dr. Howard at the conference, sponsored by the American Stroke Association. "Whatever causes African Americans to have more strokes, African Americans who live in the South have more of it."

In fact, Dr. Howard and his associates have launched an epidemiologic study that's designed to examine possible explanations for this unexpectedly high risk among Southern African Americans, and it was the initial phase of this study that produced the findings on hypertension awareness, treatment, and control. The Reasons for Geographic and Racial Differences in Stroke (REGARDS) study is recruiting 30,000 volunteers, aged 55 or older, from across the United States. The aim is to have a group in which 20% reside in the regions where stroke rates are highest (the "buckle of the Stroke Belt," which includes North and South Carolina and Georgia), 30% reside in other areas of the Stroke Belt, and 50% live elsewhere in the United States. Half the participants will be African American and half will be white, with equal gender representation.

The initial analysis of hypertension was done on the first 11,701 people enrolled, minus 95 whose blood pressure records were missing. (As of early February, more than 15,000 people had been enrolled in REGARDS). Among the initial group, 6,023 had hypertension.

Hypertension awareness was defined as a correct self-report of the disease by the hypertensive participants. Hypertension treatment was positive if patients with high blood pressure were able to show their interviewer a medication supply. And hypertension control was based on whether the hypertensive participants had a pressure of less than 140/90 mm Hg when examined for the study.

In an analysis that controlled for socioeconomic status and risk factors, African Americans with hypertension were 30% more likely to be aware of their disease than whites, 75% more likely to be on treatment for hypertension than whites, and 30% *less* likely to be controlled by their treatment. All of these differences were statistically significant.

In the analysis by region, which again controlled for potential confounders, residents of the Stroke Belt had essentially the same level of hypertension awareness and control as people who lived elsewhere. Treatment frequency was about 25% higher among Stroke Belt residents, but this difference was not statistically significant.

"The implication for the Stroke Belt is that something other than hypertension awareness, treatment, and control must cause the disparity in stroke rates," said Dr. Howard. Many alternative factors have been hypothesized, including differences in diet, physical activity, infection rates, and quality of health care. For African Americans, the focus will now fall on trying to determine why hypertension control is so much worse than among whites.

The second study by Dr. Howard and his associates looked at stroke mortality data collected by the Centers for Disease Control and Prevention during 1997-2001. These data showed higher rates among African Americans and Stroke Belt residents. What was surprising, said Dr. Howard, was the way that race and residence location interacted.

In Florida, where residents had the highest stroke mortality, the rate among African Americans aged 65-74 years old was 150% higher than in similarly aged whites. In contrast, in New York, the state with the lowest stroke mortality rates in the country, African Americans aged 65-74 years old had a rate of stroke deaths that was 50% higher than in whites. In other words, the increased rate of stroke death associated with being African American was three times as high in Florida as it was in New York.

"The interaction between race and geography that we see is more than additive, and more than multiplicative," said Dr. Howard. The stroke mortality rate in Florida was 15%-20% higher than would be predicted based on race alone or location alone.

Researchers need to uncover what causes this excess risk of stroke mortality so that appropriate interventions can be applied, Dr. Howard said. ■

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