

Obesity-Stroke Link Cuts Across Race, Sex Lines

BY ROBERT FINN

Obesity was a significant risk factor for ischemic stroke, regardless of sex or race, in a longitudinal study of black and white adults.

While earlier studies have demonstrated associations between stroke and hypertension, diabetes, and smoking, data regarding an association with obesity were conflicting. Dr. Hiroshi Yatsuya of the University of Minnesota, Minneapolis, and colleagues reported.

Investigators followed 13,549 individuals for a median of 16.9 years in the most thorough demonstration yet of a significant association between obesity and stroke.

The incidence of stroke ranged from 1.2 cases per 1,000 person-years in the lowest quintile of obesity among white women to 8.0 cases per 1,000 person-years in the highest quintile of obesity among black men.

Compared with people in the lowest quintile of obesity, those in the highest quintile had an increase in the relative risk of stroke of 38% if they were black women, 89% if they were black men, 70% if they were white women, and 51% if they were white men. All these differences were statistically significant.

Those relative risks were adjusted only for age. But they changed only slightly after additional adjustments for education, smoking status, pack-years, usual alcohol consumption, and physical activity.

The statistical relationship between stroke and obesity disappeared when the investigators also controlled for systolic blood pressure, hypertension medication, and diabetes, and blood levels of HDL cholesterol, von Willebrand factor, and albumin. This suggests that one or more of those factors accounted for the relationship between stroke and obesity.

"In fact, either blood pressure or diabetes mellitus alone ... could have eliminated significant associations between obesity measure quintiles and ischemic stroke incidence," the investigators wrote (*Stroke* 2010;41: doi:10.1161/STROKEAHA.109.566299).

Participants in the study were aged 45-64 years when they enrolled in the Atherosclerosis Risk in Communities (ARIC) Study from 1987 to 1989.

They came from four communities: Forsyth County, N.C., Jackson, Miss., Minneapolis, Minn., and Washington County, Md.

Investigators contacted the participants by phone annually, and they also saw them during four clinic visits.

It has long been recognized that blacks have a higher risk of stroke than whites, and that men have a higher risk than women. This study confirmed that relationship and extended it across the obesity range.

The investigators found few differences in the relationship between stroke and obesity no matter how obesity was measured. Increasing body mass index, waist circumference, and waist-to-hip ratio

were all significantly associated with an increased risk of stroke.

Investigators excluded ARIC participants from the stroke study if, at the time they enrolled, they had already suffered a stroke, coronary heart disease, or cancer, since those conditions and their treatment could have confounded the association between stroke and obesity. During

the period of follow-up investigators tabulated 598 incident strokes.

The authors noted their findings have limited generalizability to other cultural or socioeconomic situations because the blacks in the study were primarily from one field center while the whites were from the other three. ■

VITALS

Major Finding: Obesity, whether measured by BMI, waist circumference, or waist-to-hips ratio, is an independent predictor of stroke risk regardless of sex or race.

Data Source: A median of 17 years of follow-up with 13,549 participants in the Atherosclerosis Risk in Communities (ARIC) Study.

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For patients with
type 2 diabetes whose
blood glucose control
is not on track
with orals alone

“YOU MAY WANT TO
HAVE THE INSULIN
TALK SOONER”



“By the time of diagnosis, up to 50% of patients’ beta-cell function may have been lost.”⁴