Insulin Resistance May Flag Ischemic Stroke Risk

BY MARY ANN MOON

FROM THE ARCHIVES OF NEUROLOGY

Insulin resistance appears to be associated with a nearly threefold increased risk for ischemic stroke, independently of established cardiovascular risk factors such as diabetes, obesity, and the metabolic syndrome, according to a prospective cohort study.

If this conclusion is confirmed in further studies, "insulin resistance may [become] a novel therapeutic target for stroke prevention," said Dr. Tatjana Rundek of the neurology department at the University of Miami and her associates.

The investigators used data from the Northern Manhattan Study, a prospective, population-based cohort study of stroke, to examine the issue. The study population comprised 1,509 older adults residing in a multiethnic urban community who were enrolled between 1993 and 2001 and followed for a mean of 8.5 years.

The study subjects had no stroke, MI, or diabetes at baseline. The mean age was 68 years. About 60% were Hispanic, 20% were black, and 20% were white. In all, 23% of the men and 26% of the women were estimated to have insulin resistance, as measured indirectly by the homeostasis model assessment (HOMA).

Overall, 180 subjects had one or more symptomatic vascular events, including 46 ischemic strokes, 45 MIs, and 121 vascular deaths.

Study subjects with insulin resistance – those in the highest quartile of HOMA scores – showed a significant 2.8-fold higher risk of ischemic stroke than those with lower HOMA scores. This association was stronger in men than in women, and it persisted when the data were adjusted to control for sociodemographic factors, the presence or absence of the metabolic syndrome, and vascular risk factors.

In contrast, neither the association between insulin resistance and MI nor the association between insulin resistance and vascular death were significant, Dr. Rundek and her colleagues said (Arch. Neurol. 2010;67:1195-200).

The findings should not be considered conclusive, since replication "with larger data sets and more end points" is still necessary, they added.

Support for the study included the Goddess Fund for Stroke Research in Women, the National Institute of Neurological Disorders and Stroke, the American Heart Association, and Columbia University. No financial conflicts of interest were reported. ■

VIEW ON THE NEWS

Suggestion, Not Proof

The findings do not prove that insulin resistance may be a significant causal risk factor for stroke, independent of other factors, noted Dr. Graeme J. Hankey and Dr. Tan Ze Feng.

If insulin resistance is confirmed as a causal risk factor rather than just a marker of increased risk, the implications are exciting "because insulin resistance cannot only be measured but also treated," they said.

Measuring insulin resistance in certain cases may help refine prognostic estimates of stroke risk. "Its measurement may have a role in particular cases in which traditional risk stratification schemes suggest that the patient is at intermediate risk of stroke … and in whom an additional finding of insulin resistance may be sufficiently compelling to supplement lifestyle advice with pharmacological interventions to lower stroke risk," they wrote.

DR. HANKEY AND DR. FENG are in the department of neurology at Royal Perth (Australia) Hospital. They reported no conflicts of interest. These comments are taken from their editorial (Arch. Neurol. 2010;67:1177-8).