

Is Diabetes a Risk or Protective Factor in ALS?

BY PATRICE WENDLING

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CHICAGO — Diabetes mellitus appears to delay the onset of motor symptoms in patients with amyotrophic lateral sclerosis, but it also may be associated with diminished cognitive functioning in these patients, according to the findings of a retrospective study.

Although a cause-and-effect relationship could not be determined, it is hoped the data will stimulate research into whether increasing blood glucose level might benefit patients who have ALS, said the study's lead investigator Dr. Paul E. Schulz of Baylor College of Medicine, Houston.

Among 2,359 consecutive patients with ALS, mean patient age at the onset of motor symptoms was significantly greater in 174 patients with diabetes than in 2,185 patients without diabetes (60.3 years vs. 56.3 years). Patients in the study were diagnosed with ALS from 1977 to 2006, and were tested for diabetes at ALS diagnosis.

Overall, the mean age at first ALS symptom was 56.6 years; 62% of the patients were male and 89% were white. Later age of onset for ALS is typically associated with a faster rate of progression of motor symptoms.

However, the mean rate of progression on the Appel scale (3.1) and the mean duration of ALS (3.2 years) were similar between diabetics and nondiabetics at baseline, Dr. Schulz and his associates reported in a poster at the annual meeting of the American Academy of Neurology.

"To my knowledge, diabetes mellitus is the first factor that has been associated with a later age of onset for ALS,

and hence one that might be protective against ALS," Dr. Schulz, director of the cognitive disorders clinics at Baylor, said in an interview.

On neuropsychological testing that controlled for age, ALS patients with diabetes performed significantly worse than did nondiabetics on memory tasks, confrontation naming, semantics, and processing speed. Some of these domains tend to be relatively preserved in ALS, Dr. Schulz said.

ALS patients with diabetes also did significantly worse on executive function tasks, including the Verbal Series Attention Test, both time to completion (VSAT-T) and errors (VSAT-E), and phonemic fluency (FAS test).

Cognitive status by FAS scores was "intact" in 228 patients, of which 3% were diabetic; "mild" in 163 patients, of which 5.5% were diabetic; and "moderate" in 50 patients, of which 16% were diabetic. The difference between diabetics and nondiabetics was significant, indicating that the severity of cognitive function correlated with the presence of diabetes, he said.

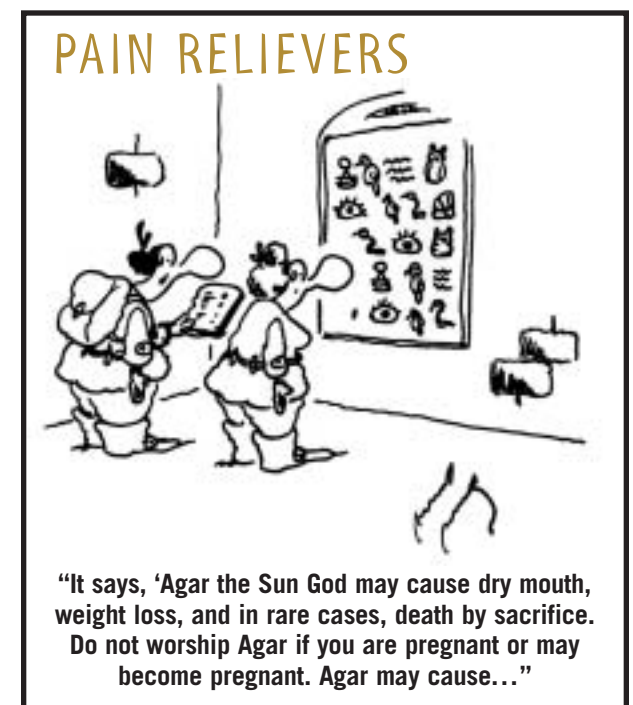
ALS patients with diabetes were also significantly more likely than nondiabetics to have depression on the Beck Depression Inventory.

There are several possible explanations for the poor cognitive findings, Dr. Schulz said. It could be that diabetes advances the loss of neurons in the cognitive areas of the brain or that diabetes protects against motor neuron loss, but not cognitive neuronal loss.

Or, "it could be that diabetes produces a different kind of dementia than we normally see in ALS patients, which is frontotemporal dementia," Dr. Schulz said.

Previous work has shown some degree of cognitive impairment in about 50% of patients with ALS.

Dr. Schulz disclosed that he has given talks on Alzheimer's disease that were sponsored by Pfizer Inc. and Forest Pharmaceuticals Inc., which market Aricept (donepezil) and Namenda (memantine), respectively. ■



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