

Correspondence

Does social support affect development of cognitive dysfunction in individuals with diabetes mellitus?

To the Editor

We read with great interest the article of Yilmaz et al,¹ which is investigating the effect of social support on cognitive impairment in diabetics. The cognitive impairment in diabetes is dependant on a complex mechanism, which cannot be simply explained by insulin secretion and glucose metabolism alone. Factors based on hyperglycemia, hypoglycemia, and abnormal insulin effects have been reported to contribute to diabetes-related cognitive impairment. Cognitive impairment could cover vascular cognitive impairment and Alzheimer's disease related symptoms.² Long-lasting hyperglycemia may impair synaptic plasticity and causes abnormalities in cerebral capillaries. Repeating, severe hypoglycemia, and increased second hour postprandial glycemic, fasting insulin, and insulin resistance levels may cause cognitive impairment. Prolonged hyperinsulinemia inhibits the insulin transport into the brain tissues, which might cause deficits in cognition due to a neuroglial energy crisis and amyloid accumulation. Lower insulin in cerebrospinal fluid inhibits the clearance of amyloid beta protein. Especially the management of vascular risk factors, glycemic control and symptomatic pharmacotherapy are the mainstay of dementia treatment.^{3,4} The cut-off value of the Turkish Mini Mental State Examination to determine mild cognitive impairment (MCI) has been determined as 23/24 (sensitivity=0.91 and specificity=0.95; positive predictive value =0.90 and negative predictive value =0.95).⁵ According to this study, setting the cut-off value to 24/25 would mean a decrease of 10% of real negative MCI's. Further, the share of literate participants in this study was 31.4%. The manual of Mini Mental State Examination respondents need an educational level of at least 5 years and patients with lower educational level qualify for the Modified Mini Mental State Examination (MMSE-E) for Turkish illiterate patients.⁷ This had to be considered during the study. According to TURDEP-II, which is a community-based study covering whole Turkey, mean HbA1c levels of newly diagnosed diabetes ranged between 5.9-7.6%. In this study,¹ the mean level of the sample was 10.78±2.74%, which is higher than the average level in community. A clarification, if the authors chose a study population

with low glycemic control needs to be made. The authors mention that more than half of diabetics might have cognitive dysfunction.¹ Large-scale epidemiological studies are supporting this and are reporting an increased 2-3 fold higher incidence in dementia in diabetics, where the relative risk for Alzheimer's disease was between 1.8-2.27 and for vascular dementia was between 1.82-2.77.²

The study of Yilmaz et al¹ is an important study shedding light on social support patterns of diabetics with cognitive dysfunction. Screening of patients at primary care level for cognitive problems⁸ and especially patients with diabetes are certainly important. Male diabetic patients have especially an increased risk for Alzheimer's disease and should be considered among the patients to be screened.²

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Reply from the Author

The study in annex is very important to demonstrate the effect of social support on cognitive function in individuals with diabetes. Publishing has been deemed appropriate by us.

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