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The Influence of Diabetes Mellitus Duration and Type of Therapy on Cognitive Decline

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Abstract

© 2016, Springer Science+Business Media New York.We studied 120 patients with compensated diabetes mellitus type 2 (DM-2). The inclusion criterion was the absence of memory loss complaints from the patient and/or his/her relatives. The exclusion criteria were diabetes decompensation, myocardial infarction and/or stroke in anamnesis, glomerular filtration rate below 60 ml/min, the presence of proliferative retinopathy, and/or other endocrine diseases. To diagnose the cognitive decline (CD) we used Mini-Mental State Examination (MMSE), the Montreal Cognitive Assessment (MoCA test), Trail Making Test (parts A and B). 77.5 % patients with type 2 diabetes out of 120 had moderate CD; 5 % had a significant CD (dementia). The control group consisted of 50 patients with arterial hypertension, which was comparable with the DM-2 group. In assessing the correlations, we found that the CD in DM-2 group is independent of disease duration and the type of diabetic therapy. We discovered a positive correlation between the age of patients and the speed of cognitive decline. Comparison of patients in DM-2 group with the control group showed that results in patients with hypertension (MMSE, MoCA test) were significantly higher ($p < 0.01$), and the test time of TMT part A and part B was significantly lower ($p < 0.01$) than that in patients with DM-2. The authors believe that the CD in DM-2 has different pathogenic mechanisms than other complications of type 2 diabetes mellitus, in particular, the insulin resistance of brain tissue.

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Keywords

Cognitive decline, Dementia, Diabetes mellitus type 2, Diabetic encephalopathy, Insulin resistance

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