Cognitive Disorders in Type 2 Diabetic Patients with Recognized Depression

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Abstract

OBJECTIVES: The most important factors in the pathogenesis of cognitive disorders in diabetes mellitus (DM) are metabolic changes directly caused by hyperglycemia. Impairment of cognitive function is accompanied by a decrease in cerebral insulin. Insulin improves cognitive processes, including somatosensoric cognitive functions. Cognitive disorders are especially pronounced if diabetic patients suffer also from depression.

MATERIAL AND METHODS: The evaluation of cognitive functions, especially sensomotoric skills were obtained from three study groups (aged 37-52 years): 30 healthy subjects, 40 diabetic patients with clinically documented depression and 30 depressive patients without DM. The sensomotoric skills were carried out using a SPS-2001E apparatus – a computer working stress simulator. The examination with Beck Depression Inventory (BDI) were also performed in all the investigated persons.

RESULTS: Sensomotoric skills investigation revealed slight cognitive disorders in the early stages DM (subgroup IA) and its intensification according to increasing BDI scores and HbA1c blood concentration (from subgroup IA to IC). Intensification of sensomotoric cognitive disorders was significantly higher (p<0.001) in the depressive patients with DM (group I), than in these without DM (group III).

CONCLUSIONS: The obtained results suggest that coincidence of aggravating factors, such as depression and metabolic disorders in DM, may cause mutual interactions leading to premature and more intense cognitive impairment. The method proposed by the authors may serve as a screening examination in early diagnosis of CNS disorders reflected by somatosensoric cognitive disorders. The presented work indicates importance of sensomotoric skills investigation for the early diagnosis of the nervous system damage related to DM.