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Diagnosis of preclinical AD stage

Ivan V Maksimovich
Clinic of Cardiovascular Diseases named after Most Holy John Tobolsky, Moscow, Russia

Background: Diagnosis of preclinical Alzheimer's disease (AD) stage is one of the most acute problems now-a-days. The research was conducted on descendants of patients suffering from AD.

Methods: Fourteen patients aged 34–48 (mean age: 42) were examined, five (35.71%) men, nine (64.29 %) women, one of whose parents was diagnosed with AD and one of whose grandparents suffered from mental disorders. The examination included: clinical dementia rating (CDR), mini–mental state examination (MMSE), tomography dementia rating scale (TDR), cerebral computed tomography (CT), magnetic resonance imaging (MRI), cerebral scintigraphy (SG), rheoencephalography (REG) and cerebral multi-gated angiography (MUGA).

Results: The examination revealed memory disorder in 14 (100%) patients; signs of dementia were not detected in any case; cognitive functions decrease to 26–28 MMSE points in 14 patients (100%); reduced blood flow in the cerebral hemispheres in 14 patients (100%); decrease in volume pulse blood filling in carotid basins in 12 (85.71%) patients. Involuntary changes in the brain were detected in 14 (100%) patients with widening of the subarachnoid space in 13 (92.86%) patients; 4–8% decrease in the temporal lobes volume in 14 (100%) patients; Sylvian fissure expansion in 14 (100%) patients; initial manifestations of non-occlusive hydracephaly in 4 (28.57%) patients. Symptoms of dyscirculatory angiopathy of Alzheimer's type (DAAT) were detected in 14 (100%) patients who had reduction of the number of capillaries in temporal and frontal parietal areas in 14 (100%) patients; development of multiple arteriovenous shunts in the basins of arteries supplying blood to temporal and frontal parietal areas in 14 (100%) patients; early venous discharge of arterial blood into the venous bed in 14 (100%) patients; abnormal widening of lateral veins in 12 (85.71%) patients; stagnation of venous blood at the border of the frontal and parietal areas in 11 (78.57%) patients and increased looping of intracerebral arteries in 12 (85.71%) patients.

Conclusions: The data obtained indicated that in 14 (100%) patients, amid a decrease in memory, there is a decrease in the volume of temporal lobes by 4–8% (TDR–0), as well as dyscirculatory angiopathy of Alzheimer's type (DAAT), which clearly shows that they have preclinical AD stage.

Biography

Ivan V Maksimovich is a member of ISTAART, ESC, EAPCI, WSO, ESO, EPA and Head Physician of Clinic of Cardiovascular Diseases named after Most Holy John Tobolsky, Moscow, Russia, since 1993. One of the major problems the clinic deals with is the diagnosis and treatment of various brain lesions including Alzheimer's disease. Over the past 20 years, he has published over 200 scientific publications on this subject.

carvasc@yandex.ru

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