Transcatheter laser exposure in the treatment of vascular disorders in Alzheimer’s disease

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Background: Considering the importance of vascular disorders in AD progression, here presented are results of applying endovascular AD treatment method based on transcatheter revascularization and restoration of brain microvasculature by means of low-energy laser irradiation.

Methods: The research involved 46 patients aged 34-79 who had long had AD. Survey plan included: Severity of dementia (CDR), assessment of cognitive function (MMSE), laboratory examination, computed tomography (CT), magnetic resonance imaging (MRI) with subsequent calculation of the temporal lobes volume and AD stage determination using the Tomography Dementia Rating Scale (TDR), brain scintigraphy (SG), rheoencephalography (REG) and cerebral multi-gated angiography (MUGA). Patients were divided into: Group (TDR-0)-4 (8.70%): Preclinical AD stage; Group (TDR-1)-15 (32.60%): Mild dementia, mild cognitive impairment, mild disease manifestations (medical history of up to 2 years); Group (TDR-2)-20 (43.48%): Mild dementia, persistent cognitive impairment, more severe disease manifestations (history of up to 6 years) and Group (TDR-3)-7 (15.22%): Severe dementia, severe cognitive impairment, late-stage AD (7-12 years of history). All patients had the signs of dyscirculatory angiopathy of Alzheimer’s type (DAAT). Transcatheter interventions were carried out against growing memory disorders in the period of 1-12 years after the symptoms onset.

Results: Positive outcome accompanied by microcirculation restoration, dementia decline, memory improvement, cognitive disorders reduction was obtained in all cases; its degree depended on AD stage.

Conclusion: In early AD stages, transcatheter laser irradiation can restore cognitive functions and relieve patients from dementia. In late AD stages, the treatment helps not only halt further disease progression but also causes its regress. The process is accompanied by brain tissue regeneration.

Biography
Ivan V Maksimovich, MD, ISTAART member, 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. For a long time I have fully concerned myself with the diagnosis and treatment of Alzheimer’s disease. Over the past 15 years I have published over 60 scientific works on this subject.

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