

Transcatheter laser revascularization of the brain in atherosclerotic parkinsonism treatment

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Background: Atherosclerotic parkinsonism is becoming more common among American and European population. The research is dedicated to the possibility of recovery of motor and mental functions in patients suffering from atherosclerotic parkinsonism by means of transcatheter laser revascularization.

Methods: 37 patients aged 52-80 (average age 74) with severe forms of specific movement disorders, 28 male (75.68%), 9 female (24.32%), diagnosed with atherosclerotic parkinsonism were examined and operated on. Research plan included: CDR, MMSE, laboratory diagnostics, CT, MRI, MRA, SG, REG, MUGA of the brain. 31 (83.78%) patients had intracranial type of atherosclerotic lesions, 6 (16.22%) patients- a mixed type. 33 (89.19%) patients showed numerous signs of calcium salt deposits on the walls of brain arteries (anterior inferior, posterior inferior, superior cerebellar, paramedian and circumflex, posterior and anterior communicating, basilar, and middle cerebral arteries, the central branch of posterior and anterior cerebral artery). 31 (83.78%) patients had signs of involutive changes with subarachnoid space extension. Dementia symptoms characteristic of CDR-1 were detected in 18 (48.65%) patients; cognitive decline symptoms equal to 24-27 MMSE points were revealed in 20 (54.05%) patients. Endovascular laser interventions were conducted in a 2-8 years period after the manifestation of the disease symptoms. To perform transcatheter revascularization of main intracerebral arteries, high-energy pulsed lasers were used, for revascularization of distal intracerebral branches - continuous low-energy lasers.

Results: Good immediate angiographic outcome manifested in the reconstruction of intracranial vessels angioarchitectonics was obtained in 35 (94.59%) cases. 29 (78.38%) patients showed decline of involutive brain changes in 6-12 months. The recovery of cognitive and mental functions was observed in all patients with these disorders. Good clinical outcome followed by total cancellation of anti-parkinsonian drugs was observed in 9 (24.32%) cases. Satisfactory clinical outcome - a significant reduction in anti-parkinsonian drugs doses was observed in 26 (70.27%) cases. Lack of pronounced effect after the treatment was observed in 2 (5.40%) cases.

Conclusions: The results obtained demonstrate the high efficacy of brain endovascular laser revascularization in the treatment of patients with atherosclerotic parkinsonism.

Biography

Ivan V Maksimovich is a Member of ISTAART, ESC, EAPCI, WSO, ESO and EPA. He is the 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 works on this subject.

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