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Introduction

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: CDR, MMSE, CT, MRI with subsequent calculation of the temporal lobes volume and AD stage determination using the Tomography Dementia Rating Scale (TDR), SG, REG, and cerebral 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);
- 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. 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.