# 2<sup>nd</sup> International Conference on

# **Brain Disorders and Therapeutics**

Chicago, USA October 26-28, 2016

# Transcatheter Cerebral Revascularization in the Treatment of Ischemic Stroke

#### Ivan V. Maksimovich

Clinic of Cardiovascular Diseases named after Most Holy John Tobolsky, Russia

**Background:** The research is dedicated to the possibility of treatment of patients with ischemic stroke by means of transcatheter laser technologies.

**Methods:** The research involved 798 patients aged 29-81 (mean age 73), predominantly with intracerebral atherosclerosis, after ischemic stroke: males - 591 (74.06%), females - 207 (25.94%). The evaluation of the clinical dementia rating (CDR), mini-mental state examination (MMSE), the Barthel index (IB) were conducted; cerebral CT, MRI, MRA, scintigraphy (SG), rheoencephalography (REG), cerebral MUGA:

- macrofocal strokes were detected in 134 (16.79%) patients;
- midfocal strokes were detected in 390 (48.87) patients;
- microfocal strokes were found in 274 (34.34%) patients.

Transcatheter interventions were conducted in 487 (61.03%) patients - Test Group.

To perform transcatheter revascularization of main intracerebral arteries, high-energy pulsed lasers were used, for revascularization of distal intracerebral branches - continuous low-energy lasers.

Conservative treatment including desagregate, anticoagulant, vasodilatory, antioxidant and nootropic therapy were conducted in 311 (38.97%) patients - Control Group.

## Results: Test Group.

After the intervention, a good immediate outcome was achieved in 477 (97.95%) patients due to the restoration of patency and lumen of the affected vessels, as well as to the collateral revascularization.

12 months after the treatment, the results depended on the size of the ischemic lesion and the timing of the intervention.

- Good clinical outcome (complete recovery of mental and motor functions IB 90-100) was obtained in 175 (35.93%) patients;
- Satisfactory clinical outcome (incomplete recovery of mental and motor functions IB 75-85) was obtained in 228 (46.82%) patients;
- Relatively satisfactory clinical outcome (partial restoration of mental and motor functions IB 60-70) was obtained in 84 (17.25%) patients;
- Relatively positive clinical outcome (absence of negative dynamics with insignificant reduction of mental and motor functions IB below 60) was not obtained in any case.

## **Control Group.**

- good clinical outcome was not obtained in any case;
- satisfactory clinical outcome was obtained in 46 (14.79%) patients;
- relatively satisfactory clinical outcome was obtained in 96 (30.88%) patients;
- relatively positive clinical outcome was obtained in 169 (54.34%) patients.

**Conclusion:** Transcatheter laser revascularization in the treatment of ischemic stroke with intracerebral atherosclerotic lesions is more effective than therapies. Restoration of intracerebral blood flow can significantly reduce the level of mental, cognitive, motor disorders and return patients to their active daily life.

carvasc@yandex.ru