Kozyolkin O. A., Runcheva K. A.

Zaporizhzhia State Medical University (Zaporizhzhia)

Influence of type 2 diabetes on the efficiency of rehabilitation measures in patients with cerebral ischemic stroke in the early recovery period

Cerebral ischemic strokes (CIS) is one of the leading problems of modern angioneurology, due to its high disability and mortality. According to WHO, stroke is the third most common cause of death after heart disease and neoplasms. Every year, more than 20 million people have stroke and about 7 million people die. The problem of stroke is very important for Ukraine, every year up to 100 thousand strokes are recorded, that is, the incidence is 280—290 cases per 100 thousand people Type 2 diabetes(T2D) is a risk factor for stroke and is associated with 6-fold increased risk.

Aim of the research. To analyze the influence of type 2 diabetes on the effectiveness of rehabilitation measures in patients with cerebral ischemic stroke in the early recovery period.

To achieve the goal, the following tasks were set:

1. To conduct a comparative analysis of the dynamics of neurological deficit in patients with cerebral ischemic stroke in the early recovery period, depending on the presence of T2D.

2. To study the effect of T2D on the course of the early recovery period in patients with cerebral ischemic stroke.

3. Evaluate the effectiveness of a comprehensive rehabilitation program in patients with ischemic stroke.

Materials and methods. In the department of neurorehabilitation of the angioneurological center on the basis of the KNP "6th City Hospital" in Zaporizhzhia, a study was conducted to assess the peculiarities of the course of the early recovery period in patients with cerebral ischemic stroke, depending on the presence of type 2 diabetes mellitus. A comprehensive examination of 45 patients was carried out in the early recovery period of cerebral ischemic stroke. The average patients'age was (61.4 ± 9.6) years. Patients were divided into two groups: the main group — patients with CIS and T2D ($n = 21$, average age 62.6 ± 8.3), the comparison group — patients with CIS without T2D, ($n = 24$, average age 60.3 ± 10.7). All patients were clinically and neurologically examined using modern scales — NIHSS, mRS. The diagnosis of CIS was based on a complex clinical-neurological and computed tomographic study of the brain at the acute period of the disease.

Results. The use of comprehensive rehabilitation measures in the early recovery period showed a worse recovery of impaired functions in the main group of patients. Patients with T2D had a more pronounced neurological deficit both during hospitalization and at the time of discharge from the hospital. Already at the beginning of the early recovery period, significant differences were noted between patients of clinical groups according to NIHSS (respectively, 6.6 ± 2.8 points; 4.8 ± 2.9 points; $p < 0.05$) and mRS (respectively, 2.9 ± 0.6 points; 2.4 ± 0.7 points; $p < 0.05$). After the rehabilitation course, positive dynamics were noted in the neurological status, the following indicators according to NIHHS: main group 5.2 ± 2.5 points; comparison group 3.1 ± 2.4 points ($p < 0.01$). The degree of disability and functional impairment in patients with CIS with T2D and CIS without T2D according to mRS significantly decreased (2.6 ± 0.7 points; 1.8 ± 0.9 points, respectively; ($p < 0.01$).

Conclusions:

1) Our clinical and neurological research shows that type 2 diabetes has a negative impact on recovery processes in patients who have suffered cerebral ischemic stroke and reduces the effectiveness of comprehensive rehabilitation measures

2) It was revealed that during the rehabilitation treatment of patients with cerebral ischemic stroke and type 2 diabetes there was a more pronounced neurological deficit according to NIHSS and mRS data.

3) Comprehensive rehabilitation measures in patients with CIS were effective, but in the comparison group (patients without T2D) the indicators were better.