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II-Й МІЖДИСЦИПЛІНАРНИЙ КОЛЕГІУМ
З НЕВРОЛОГІЧНИХ ЗАХВОРЮВАНЬ



УКРАЇНСЬКИЙ
МЕДИЧНИЙ
КЛУБ



RESOLUTION

of Teleconference the «II-nd Interdisciplinary Collegium of Neurological Diseases»

October 7, 2021
Kyiv, Ukraine

Almost 5 000 health care specialists have registered to participate in the «II-nd Interdisciplinary Collegium of Neurological Diseases».

Interdisciplinary format of the Teleconference was assured by involvement of speakers from different special fields, such as: neurologists, anesthesiologists, cardiologists, neurological surgeons.

Seven reports were offered to the participants for review and discussion and they were dealing with management of patients with acute ischemic stroke, secondary prevention of stroke, diagnostics and treatment of neuroinfections.

The panel of experts «Clinical journey of a patient with suspected acute cerebral stroke: standard and nonstandard situations» took place within the frames of the event and the following issues were considered there:

- Where should the emergency team transport patients with suspected acute cerebral stroke?
- Journey of patients with COVID stroke: current problems.
- Journey of patients for performance of thromboextraction and thrombolysis.
- The issue related to transportation of patients to another district or oblast.
- The presence of clinical journeys of patients at the level of each healthcare facility as a condition for purchase of clinical services.
- What's new in requirements of the Program of Medical Guarantees for 2022? Equipment, staff, brain death criteria.
- Payment issues of the NHSU.

Conclusions and decisions based on discussion of reports:

1. Stroke is the major cause of disability in Ukraine. Every year, more than 130,000 brain strokes occur in Ukraine. Stroke belongs to emergencies and requires provision of emergency medical services and immediate hospitalization in healthcare facilities providing secondary health care. A person suspected of an acute cerebral stroke must be transported by an emergency team according to the approved route to the nearest healthcare facility, which has signed a contract with the NHSU for provision of stroke treatment services. In the emergency medical aid system it is not possible to transport a patient to the healthcare facility without a signed contract because the provision of emergency medical care is not covered by the PMG. In 2022 a clinical journey of a patient approved by the chief medical officer/medical director in the healthcare facility dealing with treatment of ischemic and haemorrhagic stroke, which provides for the possibility to transfer the patients to other facilities, is a main condition for procurement of medical services. The document determines the clinical journey of a patient and the volume of diagnostic and treatment measures according to the material and technical support and staff composition of the healthcare facility.

2. Ischemic stroke remains a pressing issue of today. Its pathogenesis consists of consequential cascade of reactions in the brain which, in addition to ischemia, are responsible for further damaging of brain tissue and slow down development of compensatory and regenerative mechanisms. Attempts to interrupt the pathological cascade have continued for decades. MCI-186 became the first promising molecule that demonstrated the potential of scavenger (cleaner, absorber) of excessive aggressive peroxides in pre-clinical researches. It is widely used in clinical practice under the name of edaravone.
3. The purpose of multicenter research SCTX (Stroke Concomitant Treatment with Xavron), an open multicenter research «event – control», was to determine clinical effects of edaravone (Xavron) application as a concomitant treatment of acute period of ischemic stroke in actual clinical practice. As a result, a dichotomous analysis of the distribution of the mRS estimate on the 90th day of the disease demonstrated an advantage in favour of the use of additional treatment with edaravone in the range of 0-1 grade (almost recovered): 32.7 % in control group and 42.4 % in the treatment group, $p = 0.0018$. Furthermore, the same result was achieved during analysis of the range of 0-2 grades (recovery or a minimum deficit that allows for full self-service procedures and independence in daily life): the portion of patients of the control group belonging to this range was 56.1 %, and of the active treatment group – 65.4 % ($p = 0.0029$). The result was confirmed by the secondary assessment point: an evident positive dynamics (decrease of the mRS estimate for 1 grade or more) in the control group was demonstrated by 136 patients (34.8 %), and by 345 patients (62.6 %) in the active treatment group. Pearson's chi-squared test results on difference estimate were equal to 69.78 ($df = 1$), $p < 0.001$.
4. SCTX research demonstrated that less patients had deterioration of the state of consciousness and neurological deficit in the acute period of stroke and such deterioration was shorter in the group treated with edaravone; the patients became stable in the somatic and neurological sense earlier, they had less somatic complications in the progress of disease; the frequency of clinically significant hemorrhagic transformations was less than half.
5. Ferroptosis is a unique way of cell death caused by oxidative stress characterized with lipid peroxidation and glutathione depletion. Ferroptosis participates in many pathological conditions such as malignant tumours, neurodegenerative diseases and ischemic reperfusion traumas. Among ferroptosis inhibitors only one agent was used for treatment of patients with acute ischemic stroke. It was edaravone decreasing death of ferroptotic cells in ischemic cerebral tissues suffering from cystine deficit. Edaravone impedes ferroptosis with xCT (cystine–glutamate antiporter) or GPX4 (Glutathione peroxidase 4) inhibitors.
6. In patients with acute ischemic stroke, fluid injection must be at least daily needed to maintain the overall water-electrolyte balance and blood flow in the brain. Electrolytic solution in combination with other solutions – ready isotonic saline solution for infusions with balanced electrolytes content: in addition to sodium chloride it contains potassium chloride, calcium chloride dehydrate, sodium lactate physiological buffer. Lactate can correct metabolic acidosis and has an additional energy supply function.
7. Endothelial dysfunction of cerebral vessels plays an important role in development of cerebrovascular pathology, as well as other changes such as stenosis, thrombosis, embolia and occlusion of extracranial and intracranial vessels. Amino acid L-arginine is an important basic substrate for the synthesis of vascular NO. According to the theory of enantiomers and racemates the very levorotatory isomers provide maximum bioavailability. The addition of L-arginine in the early recovery period to the standard acute ischemic stroke therapy supports the recovery of vasodilatory mechanisms of cerebral blood flow autoregulation and improves functioning of cerebral endothelium.

8. Endothelium is a powerful endocrine organ. During COVID-19 acute phase it is damaged as a result of direct viral affection and cytokine storm, and in case of Long COVID syndrome – as a result of permanent activation of endothelium by cytokines. Endothelial dysfunction (endotheliitis) and simultaneous activation of coagulation are the key mechanisms of thromboembolic disorders (stroke, PATE) of Long COVID. L-arginine improves cerebral blood flow, balances NO deficit and decreases the risk of recurrent stroke and acute myocardial infarction. Prescription of infusion L-arginine in a daily dose of 4.2-8.4 grams with further oral intake in the corresponding dose within next 2 months may reduce the risk of development of strokes in patients with Long COVID due to protective action on the vascular component of the neurovascular unit.

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