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CONTENT

AGRICULTURAL SCIENCES

- Zhukov V., Andreev N., Lukin N.**
PECULIARITIES OF POTATO FLESH SAMPLE
DEFORMATION BY UNIAXIAL COMPRESSION3
- Khrameshin R., Enders M., Khrameshin A.**
MODELING OF OPERATING MODES OF THE MODULE
OF CLEANING THE VACUUM-SORTING-DRYING
MACHINE DURING THE PRODUCTION OF FROZEN
SEMI-PRODUCTS FROM THE POTATO6
- Mardvayev N., Shapsovich S.**
SUDAN GRASS IN BURYATIA - THE MOST EXTREME
ZONE OF ITS CULTIVATION IN RUSSIA.....10

BIOLOGICAL SCIENCES

- Gladyshev G.**
THE TIME HAS COME TO REVIVE AND DEVELOP THE
CLASSICS: HIERARCHICAL THERMODYNAMICS AND
LIFE15
- Kuznetsova D., Krasnoshtanova A.**
OBTAINING CHITOZAN-ALGINATE MICROPARTICLES
LOADED WITH 5-FLUORORACIL AND FOLIC ACID AS A
SUBSTANCE FOR COMPLEX PREPARATION FOR
CHEMOTHERAPY20

CHEMICAL SCIENCES

- Kyrii S., Krimets G., Kosogina I.,
Astrelin I., Fedorenko O.**
APPLYING AOPS FOR ANTIBIOTICS EXCSTRACTION
FROM WASTEWATER26
- Gladyshev G.**
ON THE THERMODYNAMIC DIRECTION OF THE
ORIGIN OF LIFE AND ITS EVOLUTION: A NEW
CONFIRMATION OF THE THEORY31
- Makarov A., Tikhomirova I.**
EFFECT OF SYNTHESIS CONDITIONS ON THE MASS-
MOLECULAR DISTRIBUTION OF SILICON-OXYGEN
ANIONS IN AQUEOUS SOLUTIONS OF LITHIUM36

MEDICAL SCIENCES

- Dubivska S., Grygorov Y.,
Bitchuk N., Lantuhova N., Syrchina V.**
DYNAMICS OF CHANGES IN THE CONDITION OF
COGNITIVE FUNCTION ACCORDING TO THE RESULTS
OF THE FAB SCALE TEST ON THE BACKGROUND OF
NEUROPROTECTIVE THERAPY41
- Zots Ya.**
DIAGNOSTIC VALUE OF DETERMINATION THE STATE
OF THE PITUITARY-ADRENAL AND PITUITARY-
THYROID SYSTEM IN PATIENTS WITH ACUTE
BACTERIAL MENINGITIS COMPLICATED BY BRAIN
EDEMA43
- Mashchenko I., Gudaryan A.,
Idashkina N., Yunkin Y.**
LIPID PEROXYGENATION AND ANTIOXIDANT DEFENSE
SYSTEM IN PATIENTS WITH INFLAMMATORY
COMPLICATIONS OF THE MANDIBULAR
FRACTURES.....49
- Krasovsky V., Karamova L., Basharova G.,
Карамова Л.М., Башарова Г.Р.**
PROFESSIONAL RISKS TO HEALTH OF THE PERSONNEL
OF SERVICE OF THE FIRST HELP52
- Panagov Z., Iraskhanov A., Mirzoev U.**
INJURY AS A MEDICAL AND SOCIAL PROBLEM
(ACCORDING TO STATISTICS SBIH «CENTRAL DISTRICT
HOSPITAL» TEREK CITY FOR 2017)58
- Poseryaev A., Gumerov I.,
Krivoschekov E., Elschin E.**
ACUTE VARICOTHROMBOPHLEBITIS: DIAGNOSTIC
AND TREATMENT TACTICS62

MEDICAL SCIENCES

DYNAMICS OF CHANGES IN THE CONDITION OF COGNITIVE FUNCTION ACCORDING TO THE RESULTS OF THE FAB SCALE TEST ON THE BACKGROUND OF NEUROPROTECTIVE THERAPY

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Abstract

The aim of the study was to study the dynamics of changes in the state of cognitive function on the FAB scale in patients after surgery using general anesthesia on the background of neuroprotective therapy. The dynamics of changes in the state of cognitive function in patients after surgery using general anesthesia on the background of neuroprotective therapy were examined in 126 patients. Patients on the background of standard postoperative therapy added neuroprotective drug according to the scheme.

In patients of young and middle age, the dynamics of recovery and improvement of the state of cognitive function were observed on the background of neuroprotective therapy more quickly for 7 days. During the month, the improvement in patients of middle age was stored for 7 days for up to 30 days, and in patients of young and old age it improved further. The resulting changes in cognitive function against the background of neuroprotective therapy, according to the results of this test, are possibly related to the age-related features of the plasticity of cognitive function and the depletion of compensatory abilities.

Keywords: anesthesia, cognitive function, neurology, general anesthesia.

Postoperative cognitive dysfunction is an emerging cognitive disorder that develops early and persists in the late postoperative period. Clinically, this condition manifests itself in the form of memory impairment, impaired concentration of attention, and impairment of other higher functions of the cerebral cortex [1].

In clinical studies, it was found that when using general anesthesia, there are changes in brain perfusion, intracranial hypertension, other disorders of the brain, as a consequence of the use of drugs for anesthesia. Such actions may cause further the occurrence of various and varying degrees of violations of higher brain function. So, in the early postoperative period, cognitive dysfunction is determined in approximately 30% of surgical interventions performed using general anesthesia, and continues to be observed for three months in 10% of patients [2-10].

In general, cognitive dysfunction is associated with the integrative activity of the brain. The most subtle and important functions and the main ones, which help to carry out the rational awareness of the world, are understood as cognitive functions [2].

Knowledge of the question of the mechanisms of theories is important in the development and improvement of general anesthesia schemes, determining the doses and ratios of drugs to achieve a minimum toxic effect. This is also achieved by obtaining knowledge on the effects of general anesthesia, taking into account cellular molecular mechanisms. Based on this, the authors developed a biochemical theory [11].

In the pathogenesis of the occurrence of cognitive dysfunction, in the postoperative period, the main factors of general anesthesia are distinguished: metabolic, hemorheological, hypoxic, toxic.

The aim of the study was to study the dynamics of changes in the state of cognitive function on the FAB scale in patients after surgery using general anesthesia on the background of neuroprotective therapy.

The study was conducted in the surgical departments of various profiles on the basis of the Kharkiv City Clinical Hospital of Emergency and Emergency Medical Care. prof. A.I. Meshchaninov. All patients underwent standard intravenous premedication. Surgery was performed under conditions of general multi-component anesthesia with artificial ventilation of the

lungs using propofol and fentanyl, sodium thiopental and fentanyl.

The dynamics of changes in the state of cognitive function in patients after surgery using general anesthesia on the background of neuroprotective therapy were examined in 126 patients.

Patients on the background of standard postoperative therapy added neuroprotective drug according to the scheme.

The duration of the operation is 89.6 ± 31.2 , age from 18 to 80 years.

Group 1 (n = 43) - young patients (18-44 years); mean age 32.3 ± 2.4 years, 24 people, 19 women.

Group 2 (n = 41) - patients of middle age (44-60 years); mean age 48.7 ± 6.1 years, 19 men, 22 women.

Group 3 (n = 42) - elderly patients (60-80 years); mean age 73.1 ± 6.1 years, 20 men, 22 women.

Before the operation, the state of cognitive function according to the test on the FAB scale was 16.6 ± 0.7 points, and had a strong inverse relationship with the age of the patients. Patients in group 1 were 17.5 ± 0.3 , in patients of group 2, 17.3 ± 0.6 , and patients in group 3, 15.1 ± 1.4 .

In the course of the study, against the background of treatment with neuroprotective drugs, changes in cognitive function were obtained, which depended on the age of the patient and the period after the operation.

For 1 day in patients of all groups after surgery, the test score on the FAB scale was 11.6% lower than the maximum possible value of this test and 4.2% lower than the value of this test in the period before the operation.

The test score on the FAB scale also differed in all groups of patients for 1 day.

In patients of group 1, on a day after surgery, the test score on the FAB scale was 5.0% lower than the maximum possible value for this test and 2.2% lower than the value for this test in the period before the operation in patients of this group.

In patients of group 2 on day 1 after surgery, the test score on the FAB scale was 6.1% lower than the maximum possible value for this test and 2.3% lower than the value for this test in the period before the operation in patients of this group.

In patients of group 3 on day 1 after surgery, the test score on the FAB scale was 23.8% lower than the maximum possible value for this test and 9.2% lower than the value for this test in the period before the operation in patients of this group.

On the 7th day in patients of all groups after surgery, the test score on the FAB scale was 8.3% lower than the maximum possible value of this test and 0.6% lower than the value of this test in the period before the operation.

The test score on the FAB scale also differed in all groups of patients on the 7th day. On the 7th day of the study, the state of cognitive function in patients improved relative to the state on day 1, and in patients of groups 1 and 3 improved.

In patients of group 1 on day 7 after surgery, the test score on the FAB scale was 2.2% lower than the maximum possible value for this test and 0.5% higher

than the value for this test in the period before the operation in patients of this group.

In patients of group 2 on day 7 after surgery, the test score on the FAB scale was 4.4% lower than the maximum possible value for this test and 0.5% lower than the value for this test in the period before the operation in patients of this group.

In patients of group 3 on day 7 after surgery, the test score on the FAB scale was 18.8% lower than the maximum possible value for this test and 3.3% lower than the value for this test in the period before the operation in patients of this group.

A month later, in patients of all groups after surgery, the test score on the FAB scale was 6.1% lower than the maximum possible value of this test and 1.8% higher than the value of this test in the period before the operation.

The test score on the FAB scale also differed in all groups of patients after 1 month. After a month of research, the state of cognitive function in patients with tests on the FAB scale was significantly improved, and in patients of groups 1 and 3, it became better compared to the values before the operation in patients of these groups.

In patients of group 1, three months after surgery, the test score on the FAB scale was 0.5% lower than the maximum possible value for this test and 2.2% higher than the value for this test in the period before the operation in patients of this group.

In patients of group 2, three months after surgery, the test score on the FAB scale was 4.4% lower than the maximum possible value for this test and 0.5% lower than the value for this test in the period before the operation in patients of this group.

In patients of group 3, three months after surgery, the test score on the FAB scale was 12.7% lower than the maximum possible value for this test and 3.9% higher than the value for this test in the period before the operation in patients of this group.

On day 1 of the study, on the background of neuroprotective therapy, there is a strong inverse correlation between the degree of reduction in the FAB value and patient age: -0.94. The trends of correlation dependence are observed on the 7th day and one month after the operation: - 0.96 and - 0.99, respectively.

Thus, on day 1 after surgery, the results of the FAB test values deteriorated from the values to the operation, more significant in patients of group 3 (9.2% of the level to the operation). Within 7 days, the condition of the FAB test indicators was significantly improved (3.3% of the values before the operation). A less significant decrease in the FAB test values on day 1 was observed in patients of the 1st group (5.0% of the values before the operation). On day 7, a statistically significant increase in the rate of this test is more than the values of this test from the values for the operation in group 1 by 2.2%. On the 30th day of the study, the reliable value of the index was better in patients of the 1st group by 2.2% more than the values for the operation. And in patients of group 2, the improvement in the index for 7 days after surgery was kept for 30 days.

Indicators of the FAB test after surgery on the background of neuroprotective therapy from the highest possible result in all study periods had a proportional dependence on age for 1 day (5.0%, 6.10%, 23.8%), for 7 days (2.2% , 4.4%, 18.8%), after 1 month (0.5%, 4.4%, 12.7%, respectively).

In patients of young and middle age, the dynamics of recovery and improvement of the state of cognitive function were observed on the background of neuroprotective therapy more quickly for 7 days. During the month, the improvement in patients of middle age was stored for 7 days for up to 30 days, and in patients of young and old age it improved further. The resulting changes in cognitive function against the background of neuroprotective therapy, according to the results of this test, are possibly related to the age-related features of the plasticity of cognitive function and the depletion of compensatory abilities.

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DIAGNOSTIC VALUE OF DETERMINATION THE STATE OF THE PITUITARY-ADRENAL AND PITUITARY-THYROID SYSTEM IN PATIENTS WITH ACUTE BACTERIAL MENINGITIS COMPLICATED BY BRAIN EDEMA

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ДИАГНОСТИЧЕСКОЕ ЗНАЧЕНИЕ ОПРЕДЕЛЕНИЯ СОСТОЯНИЯ ГИПОФИЗАРНО-НАДПОЧЕЧНИКОВОЙ И ГИПОФИЗАРНО-ТИРЕОИДНОЙ СИСТЕМЫ У БОЛЬНЫХ ОСТРЫМИ БАКТЕРИАЛЬНЫМИ МЕНИНГИТАМИ, ОСЛОЖНЕННЫМИ ОТЕКОМ ГОЛОВНОГО МОЗГА

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Abstract

Presents results of a study of ACTH, cortisol, TSH, free T3 and T4 in the cerebrospinal fluid and blood serum of 66 patients with acute bacterial meningitis caused by the meningococcus and pneumococcus. The dependence between the studied parameters and the severity, outcome, etiology of the disease.