INTERNATIONAL JOURNAL OF COGNITIVE NEUROSCIENCE AND PSYCHOLOGY

INNOVATIVE TECHNOLOGIES IN CRITICAL CONDITIONS IN PATIENTS WITH CRANIO-BRAIN INJURY

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Abstract: The results of the study show that lymphotropic anti-edematous and antibacterial therapy in the complex of treatment improves the results of TBI treatment in the acute period, thereby reducing the mortality rate.

Key words: lymphotropic, decongestant, antibacterial therapy.

Relevance. At present, the molecular mechanisms of the development of BT are being actively studied and the search for targets for targeted therapy is underway [1,2].

Research work on the search for biomarkers is carried out in all areas of medicine, including in the field of cerebrovascular pathology and traumatic brain injuries. Due to its epidemiological characteristics, traumatic brain injury (TBI) undoubtedly seems to be an important object, since, in addition to high mortality, it is accompanied by a significant frequency of complications and disability, which ultimately turn into significant economic costs, since it allows individualizing the approach to treatment and rehabilitation of patients [11].

In practice, procalcitonin (PCT), presepsin (PSP), C-reactive protein (CRP) are most often used. All of these markers can play a significant role in the diagnosis of infection, but none of them has absolute sensitivity and specificity. Therefore, the search for available reproducible and highly informative markers is still ongoing.

Today, clinical laboratory medicine has a huge number of methods for early and accurate diagnosis of a large number of diseases, dynamic control over the pathological process. Quantitative analysis of the leukocyte formula is an important research method that has diagnostic value in critical conditions. A thorough analysis of the leukoformula makes it possible to judge the course of the disease, the occurrence and severity of inflammatory manifestations, and the effectiveness of the therapy [2]. Along with modern neuroimaging methods such as MSCT and MRI, successful therapy of critically ill patients with severe TBI is based on laboratory parameters [6]. In order to objectify the assessment of these results, a number of indices have now been proposed that make it possible to judge the course of the pathological process in the body, including the severity of inflammatory manifestations and the effectiveness of the therapy [9]. According to some authors, one of these indicators is the index of the ratio of neutrophils to lymphocytes (INL) in the blood [5,8] .

The use of inflammatory biomarkers is one of the routine tools in monitoring the postoperative period. Surgical interventions are closely associated with the development of a systemic inflammatory response of the body, characterized by metabolic and immunological changes. During this period, there is an increase in the level of circulating neutrophils in the blood and a decrease in the level of lymphocytes, which leads to immunosuppression as one of the key aspects of the development of an infectious complication [7]. In this regard, the assessment of the level of the neutrophil-lymphocyte ratio can serve as a simple and effective tool for identifying patients with a high risk of developing infectious complications [10]. biomarkers will allow, as knowledge is accumulated, to detail the criteria for prescribing a particular type of therapy, to conduct timely preparation for possible complications, which undoubtedly increases the effectiveness of treatment of patients with neuroresuscitation profile [4] .

Studies aimed at studying the prognostic significance of laboratory tests and their evaluation as biomarkers, due to the insufficiency and inconsistency of existing information, continue to be relevant and in demand.

Purpose of the study: to study the effect of lymphotropic therapy on SNL in critical conditions in patients with TBI.

Materials and methods of research: data of 50 patients who were treated in the neurocritical care unit were studied as the object of the study. Bukhara branch of the Republican Scientific Center for Emergency Medical Care during 2021-2022. 35 patients with traumatic brain injury, whose data were analyzed as the source of the study, who were injured as a result of a traffic accident. Due to the possibility of data confounding, the study did not include patients with injuries of the musculoskeletal system and with damage to other organs. During the primary CT scan of patients of the main group (22 patients), 15 patients had subdural , 4 epidural and 3 intracerebral hematomas. In cases when a hematoma detected on CT scan led to dislocation of the median structures of the brain, the hematoma was surgically removed (n=18) - resection decompressive craniotomy was performed. At the time of admission to the hospital, the level of consciousness was assessed: in 4 patients - in a state of stupor (GCS 12-14 points), 8 patients - in stupor (GCS 10-11 points), 5 - in superficial coma (according to GCS 8-9 points, and 3 were regarded as deep coma (below GCS scores 7), 2 patients were treated in clear consciousness (GCS scores 15).Clinical symptoms of brain contusion (amnesia, vomiting, psychomotor agitation) occurred in almost all patients with focal cerebral symptoms - anisocoria, hemisymptomatics... In patients who at the time of admission, consciousness was assessed below 10 points on the Glasgow scale and all patients treated surgically, artificial lung ventilation was performed. The duration of mechanical ventilation ranged from 2 to 18 days.

On the first day after the operation, patients whose level of impaired consciousness was less than 20 points on the Glasgow- Pittsburgh scale underwent controlled mechanical ventilation in the CMV mode (controlled mechanical ventilation). And in the following days, depending on changes in neurostatus , in patients with a level of impaired consciousness, which was within the coma of I-II degree (according to the Glasgow- Pittsburgh scale 20-29 points), as well as on the restoration of independent respiratory movements, mechanical ventilation continued in the mode SIMV (synchronized intermittent mandatory ventilation) - synchronized intermittent forced ventilation of the lungs. As consciousness recovered above the stupor (more than 30 points on the Glasgow-Pittsburgh scale), mechanical ventilation was carried out in the ASV mode (adaptive support ventilation) - adaptive supportive ventilation.

lymphotropic therapy in the intensive care complex . Submastoid injections carried out doctor in conditions chambers branches resuscitation. Bone landmark was mastoid offshoot temporal bones. Pal patorno _ determined lower edge offshoot and in this point produced injection ordinary subcutaneous needle attached to syringe With medicinal mixture. After puncture skin at entry needles in subcutaneous fiber injected mixture. Depth introductions needles in average was 3-4mm. Introduction medicinal mixtures carried out in two dots–right and left, multiplicity introductions–each day starting from the second day TBI, in within 5 days. Decongestant lymphotropic therapy: lidocaine 2%-1ml, dexamethasone 4mg-1ml, 10% glucose solution 3ml. in one syringe multiplicity administration once daily. Lymphotropic antibiotic therapy: Ceftri a Xon 100 mg, multiplicity administration once daily within 5 days. Everyone patients held single standard survey, which included in yourself: common analysis blood, general analysis urine, biochemical analysis blood, research liquor, research eye fundus, CT scan of the skull , evaluation functions central nervous systems. But for solutions delivered goals were defined main options comparisons: evaluation on scale Glasgow (GCS) and ISNL on first, fifth day TBI and at translation from neuro intensive care units in profile. The control group consisted of 15 patients with TBI.

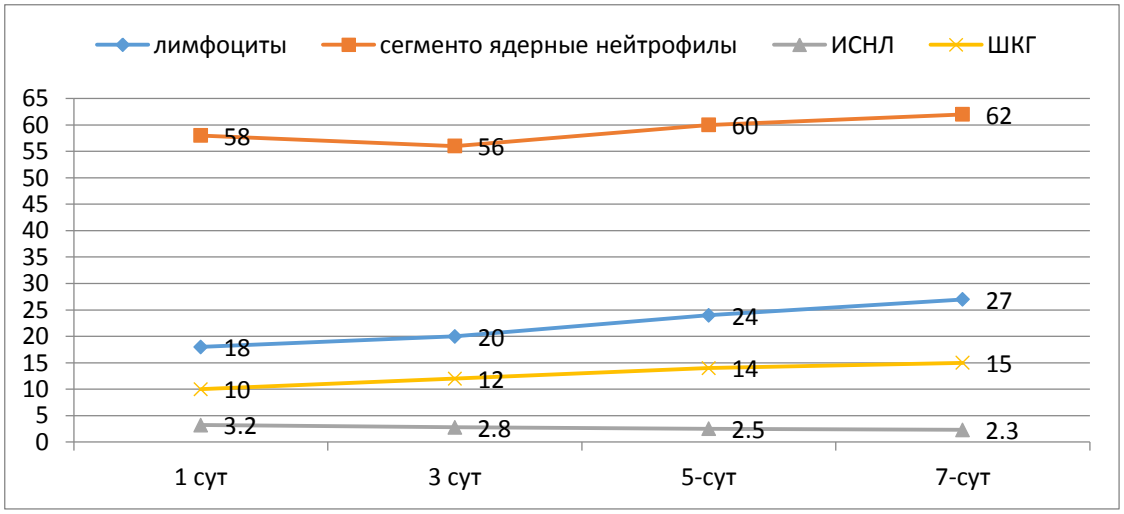
Results and their discussions

At conducting lymphotropic decongestant and antibiotic therapy in combination with standard therapy the most important criterion estimates efficiency ongoing therapy were the deadlines recovery level

consciousness, which fixed on scale Glasgow and the dynamics of the ISNL. On the moment first estimates on GCS results in group control amounted to 8.1+1.3 points, and in basic group - 7.5 + 1.8, respectively, which testifies about comparability groups given research.

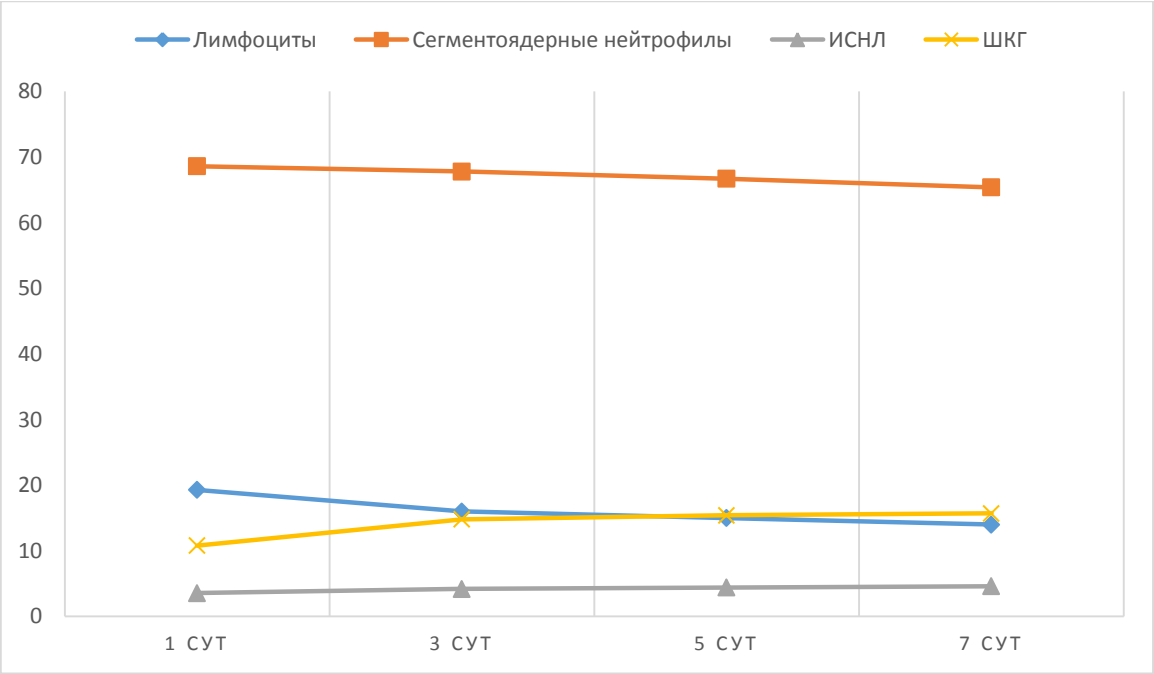
Patients basic groups With severe cranial injury (n=22) were divided on the three subgroups in dependencies from quantity points on GCS with an estimate on the 1st and 5th day finding in hospital after TBI: 1) 3-4 points for GCS - 2 patients; 2) 5-8 points according to GCS - 4 patients; 3) 8-10 points on GCS – 7 patients. Having distributed patients on original subgroups, we got the following results on the fifth day TBI: 1) 3-4 points - 0; 2) 5-8 points - 10; 3) 8-10 points - 3 patients. On the background ongoing therapy on the 5th day noted reliable improvement estimates on GCS at patients basic groups: from 7.5 + 1.8 points up to 10.97+1.33 respectively. Mortality in flow first five days TBI in basic group was 2 patients. Translation in profile department after 5 days stay in department resuscitation took place in all 20 cases this noted further improved score on GCS up to 12.88+1.20, but this is It was statistically few significant, $p \geq 0.05$. Survival patients after 5 days TBI in the main group was 100%.

In the study of laboratory tests and clinical and neurological changes in patients of the main group, compared with the control, quantitative changes in neutrophils and lymphocytes in the blood were observed in accordance with changes in the general condition of patients. The general condition of 20 patients changed in a positive direction against the background of intensive therapeutic measures carried out after the operation, which manifested itself in the form of a clarification of consciousness and an increase in the total GCS score. During dynamic MSCT examination, it was noted that the dislocation of the median structures of the brain in these patients was eliminated, the sizes of the basal cisterns and ventricles of the brain were normalized, there were no signs of impaired CSF circulation. The results of laboratory analysis showed that the ratio of segmented neutrophils to lymphocytes in these patients was below 3.2 (graph. 1).



Graph 1. Indicators of the main group of patients with TBI.

For comparisons efficiency ongoing therapy in groups research Patients control groups (n=15) also were divided on the three subgroups like patients basic groups in dependencies from quantity points on GCS:1) 3-4 points in GCS - 0; 2) 5-8 points - 3 patients; 3) 8-10 points - 12 patients. On the fifth day TBI received the following results: 1) 3-4 points - 0; 2) 5-8 points - 2 patients; 3) 8-10 points - 9 patients. 4 patients control groups on the fifth day It was from 10 to 12 points. On the background standard therapy on the 5th day noted trend to improvement estimates on GCS at patients control groups: from 8.1 + 1.3 points up to 9.97+1.16 points respectively, at this $p \geq 0.05$. Mortality in flow first five days TBI in control group observed in 5 patients. Translation in profile department after 5 days stay in department resuscitation took place in 10 cases, this noted further improvement estimates on GCS at these patients from 9.97+1.16 points up to 12.57+1.03 points. But survival patients after 5 days TBI in group control was 76% (graph. 2).



Graph. 2 . Indicators of the control group of patients with TBI.

Thus, carrying out lymphotropic decongestant and antibiotic therapy for TBI in the acute period allowed effectively influencing the course of the pathological process and improving the results of treatment. which is confirmed by significantly better data on GCS, ISNL and mortality and length of stay in the neuro-reanimation ward in patients of the main group compared to the control group.

Conclusion. Carrying out lymphotropic decongestant and antibiotic therapy for TBI in the acute period allows you to effectively influence the course of the pathological process and improve the results of treatment of patients with TBI.

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