

scalpel and traditional surgery, this method refers to radiation therapy, that is, the use of radiation to destroy tumors. There are no incisions, scars or complications associated with surgery.

Materials and methods: the expert evaluation of the treatment of 6 patients with brain tumors by non-invasive radiation therapy and 32 patients by traditional surgical method for 2019-2021 was studied and conducted. We analyzed the results of treatment of glial tumors of the brain in 38 patients, men - 26 and women - 12 aged 36 to 65 years. It was found that the survival time for traditional treatment (surgery, radiation therapy and chemotherapy) is on average from 9 months to two years, and for therapy using a cyber-knife from 6 months to 1.5 years.

Therefore, according to our data, the main method of treatment is the surgical method. For a long time it was believed that surgical removal of a brain tumor is associated with high risk and complications, but in the last 15-20 years there has been a revolution in the technique of neurosurgical operations. However, surgery is not always possible, for example, due to the large size of the tumor, or due to the location of the tumor in a vital area of the cortex. If surgery is not possible, as well as after surgery, in order to destroy cancer cells that may remain in the operating field radiation therapy is conducted. Radiation therapy is selected individually and depending on the cell composition of the tumor, its size and location.

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PHASE TOMOGRAPHY OF THE POLYCRYSTALLINE OF BLOOD FILMS

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Our study is aimed at developing the principles of differential diagnosis of the severity of the septic process by using a digital technique of phasometric mapping of microscopic images of blood films of laboratory rats. This technique is based on determining the medical-relevant relationships between the phase maps of microscopic images of blood films of laboratory rats and the severity of the septic process. The experimental measurement of the coordinate distributions of the magnitude of the phase shifts was carried out at the location of the laser micropolarimeter. The structure of the study of the polycrystalline component of rat blood biological films in the differential diagnosis of septic severity by digital polarization-phase microscopy consists of the following experimental and analytical steps: 1. Representative samples of polycrystalline blood films of the following groups of rats are formed: Intact rats - "control" group 1 (39 samples); Sick rats (sepsis – light form) - "research" group 2: duration 12 hours. (39 samples) - "experimental" subgroup 2.1; duration 48 hours. (39 samples) - "experimental" subgroup 2.2. Sick rats (sepsis – middle form) - "research" group 3: duration 12 hours. (39 samples) - "experimental" subgroup 3.1; duration 48 hours. (39 samples) - "experimental" subgroup 3.2. Sick rats (sepsis – severe form) - "research" group 4: duration 12 hours. (39 samples) - "experimental" subgroup 4.1; duration 48 hours. (39 samples) - "experimental" subgroup 4.2. Within each of the four groups for each sample of blood films carried out: measurement of the coordinate distribution of the magnitude of the phases in pixels of a digital microscopic image calculating the size of the set of statistical moments of the 1st – 4th orders characterizing the average S , dispersion D , asymmetry A , and excess E of phase size distributions. For the obtained group sets (average S , dispersion D , asymmetry A and excess E), average values and fluctuations of the statistical moments of the 1st – 4th orders are determined/For all groups of biological preparations, a cross-analysis of the statistical reliability of the obtained data is carried out and objective criteria for differential diagnosis of the presence of the septic process and its severity are determined by polarization-phase microscopy. From the obtained results it follows that for septic conditions, a decrease in the phase-shifting ability of the polycrystalline component of rat blood films from all research groups is inherent. This fact is indicated by a decrease in the average and dispersion of phase shifts at the points of microscopic images. Such a transformation of the statistical structure of phase maps is associated with necrotic degradation (anemia) of optically anisotropic hemoglobin structures, as well as with a decrease in the number of optically active red blood cells in rat blood altered due to the inflammatory process with different severity of the inflammatory process.

A structural-logical scheme and design of a phase-metric study of microscopic images and blood films of laboratory rats has been developed. A model analysis of the polycrystalline structure of blood films of laboratory rats is proposed. Experimentally tested the optical arrangement of the system of phase-metric mapping of microscopic images of blood films of laboratory rats. An album of maps of the distribution of phase magnitude of the points of the digital microscopic image of polycrystalline blood films of rats from control group 1 and research groups 2–4 with different severity of septic pathology was obtained. The statistical confidence of the differentiation of phase maps of the microscopic image of polycrystalline blood films of rats from control group 1 and research groups 2 - 4 with different severity of septic pathology was determined. The most diagnostic-sensitive statistical criteria for differentiating phase maps of the microscopic image of polycrystalline blood films of rats from control group 1 and research groups 2–4 with different septic pathology severity were found. The operational characteristics of the diagnostic strength of the method of polarization- phase microscopy of polycrystalline blood films of rats of the control and experimental groups are determined. Set balanced accuracy: differentiation of healthy and sepsis-infected rats; intergroup differentiation of the severity of the septic process in sick rats; intragroup differentiation of rat sepsis patients.

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EARLY POSTOPERATIVE CHANGES OF PRIMARY HAEMOSTASIS UNDER ABDOMINAL SEPSIS

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Violations of hemostasis play significant role in pathogenesis of sepsis e.g. multiple organ damage caused by sepsis is created in part by the tight relationship between haemostasis and inflammation. Markers of coagulation have been found to have pathogenetic and prognostic value in sepsis patients. Both clinical and experimental studies prove importance of further investigation of coagulation haemostasis including its prognostic and therapeutic potential for abdominal sepsis.

The aim of the study was to analyze changes in the system of primary thrombocyte-vascular haemostasis in patients with peritoneogenic and pancreatogenic abdominal sepsis in early postoperative period.

The study covers 52 patients with peritoneogenic and pancreatogenic forms of abdominal sepsis, aged 18-69 years (41.93 ± 3.47). The control group consisted of 17 patients who underwent elective surgery not related to abdominal cavity. Primary haemostasis analyzed according to prostacyclin (6-keto-PGF₁), thromboxane A_2 (TXA_2) and soluble fibrin monomer complexes (ELISA). Bioethics requirements were strictly obeyed.

According to the obtained data, in control group patients the TXA_2 level during 1 day after surgery was 156.11 ± 12.19 pg/ml (n=9), and 6-keto-PGF₁ – $166,56 \pm 6.92$ pg/ml (n=9). Under pancreatogenic sepsis, these figures grew: TXA_2 – 48% (p<0.01, n=5), 6-keto-PGF₁ to 177.67 ± 12.33 pg/ml (n=5); in peritoneogenic sepsis TXA_2 was 209.50 ± 16.99 pg/ml (<0.05; n=8) and prostacyclin – 172.75 ± 19.05 pg/ml (n=8).

Severe course of abdominal sepsis was marked by the highest concentration of TXA_2 (384.11 ± 49.52 pg/ml, <0.001; n=9) with lowest level of 6-keto-PGF₁ (86.89 ± 19.75 pg/ml, <0.001; n=9). Soluble fibrin monomer complexes grew significantly: 5.40 ± 0.31 mkg/ml (control, n=15); 12.40 ± 1.73 mkg/ml (pancreatogenic sepsis, n=5; <0.001); 22.40 ± 4.67 mkg/ml (peritoneogenic sepsis, n=5; <0.001); 54.50 ± 5.21 mkg/ml (heavy sepsis, n=9; <0.001). In addition, statistically reliable regressive dependencies between the soluble fibrin monomer complexes content in blood and TXA_2 concentration (positive correlation) and the level of 6-keto-PGF₁ (negative relationship) were identified.

Significant changes revealed in the system of primary haemostasis in abdominal sepsis patients during the first 24 hours after surgery demonstrate the need for the active correction of thromboxane-prostacyclin system's violations to prevent postoperative thrombotic complications.