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MODERN VIEWS ABOUT ANESTHESOLOGICAL CARE FOR EXTENSIVE ABDOMINAL OPERATIONS

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Relevance. For major abdominal surgeries, almost any type of general anesthesia is used [1]. One of the key goals of anesthesia is to protect the patient from surgical exposure and surgical stress. An unjustified choice of tactics for administering drugs for general anesthesia leads to stimulation of distress mechanisms, which are a source of perioperative complications [3,5]. In the last 10-15 years, combined anesthesia has proven itself well, as it not only provides good analgesia, neurovegetative protection and muscle relaxation, but also improves vascularization of the surgical area and accelerates the processes of regeneration and repair. However, the presence or absence of evidence cannot guarantee contraindications to a particular type of anesthesia favorable nature of the course of anesthesia [2,6]. Thus, the problem of predicting changes in physiological parameters under various types of anesthesia, and, accordingly, the problem of choosing an anesthesia method in each specific case during extensive abdominal interventions still remains open [4,7].

Purpose of the study: To study the course of long-term anesthesia according to central hemodynamics, gas and temperature homeostasis, depending on the functional state. In this regard, in our opinion, neurophysiological monitoring methods are promising.

Results of the study : The problem of using various characteristics of infraslow physiological processes (ISP) and their electrophysiological correlates to optimize anesthesia and intensive care during long-term abdominal operations has been successfully solved in the last decade and is associated with the works of I.B. Zabolotskikh and his school. Previous work on optimizing anesthesia and intensive care in abdominal surgery has already proven the importance of spontaneous and evoked dynamics of constant potential in predicting the course of intraoperative changes in homeostasis indicators under conditions of total intravenous anesthesia. We considered it necessary to expand the scope of the study by studying the indicators of hemodynamics, gas exchange and temperature homeostasis depending on the preoperative level of wakefulness, determined by the value of the omega potential stabilized in the background, both under conditions of total intravenous anesthesia, and under conditions of combined and combined anesthesia, which in

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Ultimately, it will allow individualizing anesthesia care and preventing the occurrence of complications.

1-3 days before the operation, the SMBP was recorded using the omegametry method, continuously with a sampling frequency of 3 seconds for 10 minutes in a state of quiet wakefulness with eyes closed. Registration of SMBP was carried out by the hardware-computer complex “Telepat - 104R” (certificate of conformity ROSS RUME95.B1432) according to the standard technique in the “central point of the forehead - thenar” lead. To register 1111, we used non-polarizing liquid silver chloride electrophysiological electrodes developed in the Laboratory of Physiology of Brain and Body Conditions of the Human Brain Institute of the Russian Academy of Sciences (St. Petersburg). The design of electrodes of this type practically eliminates the influence of polarization effects on the measured quantities 1111 [3]. The active electrode is installed in the frontal region along the midline at a distance of 2 cm from the brow ridges. The reference electrode is located in the thenar region of the right hand, and in left-handed people - the left hand [2]. The study of PP at the stages of anesthesia was also carried out using the Omega-4 hardware-computer complex. Electrode placement was similar to the preoperative examination. The study of indicators of central hemodynamics, gas exchange and thermoregulation was carried out at the following stages: stage I - initial level (before surgery), stage II - 1-3 hours, stage III - 4-6 hours, stage IV - 7-9 hours. Heart rate - determined by electrocardiographic monitor or pulse oximetry data. Systolic blood pressure and diastolic blood pressure were determined by auscultation using a sphygmomanometer and phonendoscope using the Korotkoff method. The state of vascular tone and the effective average pressure of the blood flow is characterized by the value of the average arterial pressure, which was calculated using the Hickam formula: SBP = ABP + (ABP - ADC) / 3, where ABP is systolic pressure, ABP is diastolic pressure. Under physiological conditions, the average pressure is relatively stable. The limits of its normal fluctuations are 80-110 mm Hg. Art. Pulse blood pressure PP was calculated using the formula: PP = BPs-BPd, where BPs is systolic blood pressure, BP is diastolic blood pressure. Stroke volume of the heart was calculated using the modified Starr formula (Vinogradova T.S., 1998; Zhiznevsky Ya.A., 1999). The relative accuracy of which is compensated by the speed and simplicity of calculating SVR - (90.7 + (0.54 x PP) - (0.57 x APP) - 0.61 x V) x k, where PP is pulse pressure, APP is diastolic arterial pressure, B - age in years from 17 to 70 years. Formula I. Starr (1954) modified from I.B. Zabolotskikh, I.A. Stanchenko (1999) - the coefficient k was introduced into the formula, taking into account the age group and the functional state of the cardiovascular system at the time of the study (up to 35 years - 1.25; from 35 to 60 - 1.55; over 60 - 1.7). The stroke index (SI) was calculated by relating the SVR value to the body surface area (Savitsky N.N., 1996): SI = SVI/8, where SVI is the stroke volume of the heart, S is the body area. Body area (S, m2) was determined by the following formula: S=(4xP+7)/(90+P), where P is the patient’s weight. The normal UI ranges from 35 to 46 l/m. The value of cardiac output makes it possible to estimate the total work performed by the heart over a given period of time. MVR can be defined as the product of the stroke volume of the heart and heart rate, and was calculated using the formula: MVR = SVxHR, where SV is the stroke volume of the heart, HR is the heart rate. The limits of normal fluctuations in MOC in adults are from 3.5 to 8 l/min (Zhiznevsky Ya.A.,1994). The cardiac index was determined by a calculation method by relating the MVR value to the body surface area: SI = MVR /S, where MVR is the cardiac output, S is the body area. The SI norm is from 2.5 to 3.5 l/(minhm). The effective functioning of the heart depends not only on the strength and volume of cardiac contraction, but also on the resistance of the vascular bed to blood flow - general peripheral vascular resistance. The relationship between OPSS and cardiac output is expressed by the Poiseuille formula (Savitsky N. N., 1974; Zhiznevsky Ya. A., 1994): OPSS = (1333 x 60 x SBP) / MOS, where SBP is mean arterial pressure, MOS is minute pressure heart volume, 1333 - conversion factor mmHg. Art. in dynes. The limits of normal fluctuations for OPSS are 900 to 1500 dinxs_1xcm"5. The correlation coefficient of indicators determined by the calculation method from the values determined by invasive methods, as well as thermodilution and Dopplerography methods ranges from 0.7 to 0.94, which indicates a high correlation.

Conclusions: Determining the evoked dynamics of a constant potential is necessary to predict those physiological parameters that determine the adequate course of anesthesia: parameters of central hemodynamics, gas homeostasis, thermoregulation, acid-base and water-electrolyte balance, features of the pharmacological provision of anesthesia. This technique will ultimately make it possible to predict the course of concomitant and combined anesthesia and prevent the occurrence of incidents and complications.

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