Clinical assessment of homeostasis parameters in evaluation of operation stress
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Background. The expansion of the range of clinical and physiological methods, also the development of ideas related with operational stress caused the increase in the number of indicators used to judge the adequacy level of anaesthetic protection.

Objective. The research aim was clinical evaluation of the informational content of homeostasis parameters in determining the adequacy of anaesthesia.

Materials and methods. The research was conducted on 92 patients, aged 21-79, who underwent large-scale surgical operations in abdominal cavity. Continuous monitoring was conducted to identify hemodynamic indicators: systolic, diastolic, medium and pulse arterial pressure, central venous pressure and heart rate. In the course of the anaesthesia the level of anaesthesia and consciousness of the patient...
were defined with the aid of BIS (Bispectral Index) monitor and the state of myorelaxation was evaluated according to the indicators of frontal muscle electromyography. Cortisol, adrenocorticotropic hormone (ACTH) and prolactin levels were defined in three stages: I – preoperative, II – at the peak of surgical aggression, III – 30 min after the end of the surgery. In addition to continuous monitoring of other indicators of anesthesia adequacy, comparisons were also made with the data obtained during these stages.

**Results.** At the peak of surgical aggression, which means during the II stage, the level of stress hormones (ACTH, cortisol) were considerably above their upper norm limit despite the fact that the hemodynamics, BIS monitor and electromyography indicators corresponded with the adequate anesthesia state. At this stage of the operation the attempts to normalize stress hormones values require high doses of analgesics and anaesthetics which can contribute to an increase in anaesthetic risk.

**Conclusions.** Of all the criteria for assessing the adequacy of the anesthesia, the indicators of hemodynamics and gas exchange together with BIS monitoring data are sufficiently informative and easy to provide in the operating period, which is also very important. These indicators respond fairly quickly to the body stress impact.

**Key words:** operation stress, the adequacy of anaesthesia, hormonal status.