

Markova O. A., Pototskaya L. A., Ilkaeva V. N., Pichugova A. N.
GENERAL ANESTHESIA AND ITS EFFECTS ON THE BRAIN

Tutor PhD, associate professor Morozov A. M.

*Department of General Surgery
Tver state medical university, Tver*

The problem of complications of general anesthesia is one of the urgent due to the high frequency of occurrence. Among the complications, the leading place is occupied by neurological.

One of the main purposes of anesthesia is pain relief.

The mechanism of action of many general anesthetics is to suppress the transmission pain impulse in the nociceptive system and increase action of the antinociceptive system (ANS). The mechanism analgesic action of general anesthetics is based on the blockade of opioid receptors and activation of endogenous ANS, inhibition of pain transmission at various levels of the central nervous system, reticular formation and spinal cord.

Many authors believe that the manifestations of clinical disorders of the central nervous system after the action of general anesthesia persist for some period of time, the more the duration of general anesthesia, the longer complications appear. However, even the content of minimal concentrations of anesthetics in the central nervous system has a negative influence on the functioning of the most complex complexes and associations of neurons.

Recently, as the main potential development mechanism cognitive disorders began to be considered: neuroinflammation and neurohumoral changes as components of the syndrome of the systemic inflammatory response of the body; anesthetic-mediated brain damage; and oxidative stress. The massive release of inflammatory mediators often exacerbates the processes of tissue damage due to an excessive increase in the level of interleukins. In development of neurodegenerative processes, great importance is attached to oxidative stress. Lipid peroxidation provokes oxidative damage to neurons, leading to their death and accompanied by the production of highly reactive biomolecules, with neurotoxic properties.

After the action of general anesthetics, memory impairments are possible, which can manifest itself in different ways, from subtle isolated cases to regular and bright expressions, arising abruptly. After the use of anesthesia, some note violations sleep, which can haunt even several months after surgery.

Another complication immediately after surgery, the use of anesthesia can cause headaches, hallucinations, hearing and speech disorders. The effects of anesthesia always deliver a lot of trouble in the postoperative period of the patient. Violation of memory, decreased attention, and deterioration in the ability to learn in medicine is called postoperative cognitive dysfunction. emergence cognitive deficit leads to a decrease in a person's ability to think, learn, active perception of information, decision-making, deterioration of other psychophysiological functions, followed by a pronounced social and everyday maladaptation, restriction or loss of professional activity, which is severe a burden on the family and society as a whole. Patients are usually concerned about what happened after anesthesia with their memory, how long it will last, what can be done to alleviate the condition. Anesthesiologists, in turn, cannot give clear answers to the questions posed above. Memory impairment after anesthesia is not such a rare complication.

It can be concluded that general anesthesia has various effects on the central nervous system, and this is due to the fact that general anesthetics have their action directly on the central nervous system, disrupting the functionality of various structures, in particular on the reticular formation, which is mainly responsible for the formation cognitive functions.