

CURRENT PROBLEMS IN MEDICINE

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ABSTRACT: The problem of nausea and vomiting after surgery has accompanied the development of anesthesiology since the very inception of the specialty in the mid- 19th century after the discovery of ether for anesthesia (Moroz V.V., 2004, 2006). However, for a long time these symptoms were not given due attention, considering them a natural and insignificant side effect of anesthesia. In the group of neurosurgical patients, the particular danger of postoperative nausea and vomiting (PONV) is associated with an increase in intracranial and arterial pressure, as well as cerebral blood flow, which is associated with the risk of postoperative hematoma and cerebral edema, and therefore life-threatening dislocations and wedging of the brain (Tseitlin A.M., 2003; Lee K ., 2012; Matta D . F ., 2011). Emetogenic reactions are the most common reasons for patient dissatisfaction after anesthesia. Thus, foreign colleagues, having surveyed 10,000 patients after surgery, found that patients with PONV were 4 times more likely to be dissatisfied with anesthetic care (Myles P ., 2000). In the last decade, the effectiveness of the use of adjuvant drugs (clonidine , droperidol) in anesthetic care to reduce the incidence of postoperative emetogenic reactions has been confirmed (Baskakov D.S., 2014), close attention has been paid to the study of the effect of dexmedetomidine (Kozlov I.A., 2014), significant emphasis is placed on the prevention of PONV as a component of a modern approach to accelerated recovery of patients after surgery (Pasechnik I.N., 2015, 2016), but the problem of postoperative nausea and vomiting has not been completely resolved. Neurosurgical patients traditionally belong to the high-risk group for PONV (Flynn B. C ., 2006 ; Neufeld S. M. , 2007). The risk of postoperative nausea in neurosurgical patients ranges from 30% to 50% (Lee K ., 2012). In adult patients undergoing surgery for posterior cranial fossa (PCF) pathology, the frequency of emetogenic reactions, according to literature data, is 50% in the first 24 hours after surgery (Hellickson J . D ., 2016; Leslie K. , 2005). Latz B . et al . in 2011 reported that the incidence of PONV after neurosurgery is approximately 50% within 24 hours of craniotomy (Latz B ., 2011). Despite the discrepancy in data among different authors, it is obvious that at least a third of all neurosurgical patients develop postoperative nausea and vomiting. The relevance of the problem is confirmed by the presence of publications by domestic researchers related to the problem of postoperative emetogenic reactions (Likhvantsev V.V., 2012; Molchanov I.V., 2013; Khoronenko V.E., 2014, 2015, 2018). 4 Degree of development of the research topic. The general understanding of the relevance and significance of the problem of postoperative nausea and vomiting was reflected in the development and publication of guidelines for the management of PONV in many developed countries, but not in Russia. At present, the most modern is the consensus guideline for the management of PONV, published in the journal Anesthesia & Analgesia in 2014 (Gan T . J ., 2014). Speaking about PONV in neurosurgery, it is worth noting that in our country at the moment there are no schemes and principles aimed at preventing and treating postoperative emetogenic reactions in this category of patients have not been

generalized. In the Russian Federation over the past 5-10 years, we have not found any publications devoted to emetogenic reactions after neurosurgical intervention. On the contrary, there are quite a lot of foreign publications on this topic. Most of them are narrowly focused and do not cover the entire spectrum of such patients. They do not provide any algorithms for preventing PONV or clear criteria indicating the need for prevention. The above gives us the right to assert that the degree of development of the problem of prevention and treatment of postoperative emetogenic reactions in neurosurgery is insufficient. Purpose of the study. To improve the quality of anesthetic care in neurosurgical patients undergoing craniotomy in order to reduce postoperative nausea and vomiting. Objectives of the study: 1. To study the frequency of postoperative emetogenic reactions in patients with various neurosurgical pathologies, to identify risk factors for postoperative nausea and vomiting in neurosurgical patients. 2. To identify the time of greatest effectiveness of antiemetic prophylaxis, the dependence of the frequency of postoperative emetogenic reactions on the time elapsed after surgery. 3. To evaluate the effectiveness of intraoperative transcutaneous electrical stimulation of the median nerve for the prevention of postoperative nausea and vomiting in patients after infratentorial craniotomy as an adjunct to standard prevention of postoperative emetogenic reactions during anesthesia. 4. To study the efficacy of fosaprepitant compared to droperidol as an adjunct to standard prevention of postoperative nausea and vomiting during anesthesia in patients after infratentorial craniotomy. 5. To develop an effective regimen for the prevention of postoperative nausea and vomiting in patients with neurosurgical pathology. Scientific novelty. A comprehensive study of the incidence rate and specific predictors of postoperative nausea and vomiting made it possible to identify the most important pathogenetic factors in the development of emetogenic reactions in neurosurgical patients. This served as the basis for the use of targeted drugs and non-pharmacological methods for the prevention of nausea and vomiting in the developed modern regimen for the prevention of postoperative emetogenic reactions. The period of the greatest effectiveness of antiemetic prophylaxis has been revealed, the dependence of the frequency of postoperative nausea and vomiting on the time elapsed after the end of the surgical intervention has been noted. The scientific novelty of the study is also due to the results of the analysis of the effectiveness of various options for the prevention of postoperative emetogenic reactions, which manifest their effect through various receptors and mechanisms, to optimize anesthetic management in neurosurgical operations. Theoretical and practical significance. The theoretical significance of the work is due to a detailed and comprehensive analysis of the relevance, mechanisms, risk factors of postoperative nausea and vomiting in neurosurgery, its prevention and therapy, assessment of the risk of postoperative emetogenic reactions in neurosurgical patients, the creation of visual graphic diagrams, tables and figures that are easy to perceive and useful for educational purposes, the publication of a review of world literature and the main results within the framework of the topic of the work. The practical significance of this study is to create an effective scheme aimed at preventing nausea and vomiting in neurosurgical patients, to develop recommendations for preventing postoperative emetogenic reactions, which can lead to an increase in the quality of surgical care. The data obtained allow us to determine the risk levels of these symptoms in neurosurgical patients, prevent possible complications and effectively solve the problem of postoperative nausea and vomiting in a neurosurgical hospital. The following positive effects are expected as a result of the study: 1. Medical – substantiation and implementation of a regimen for the prevention of postoperative nausea and vomiting into anesthesiology practice, improvement of the quality of anesthesiology care; 2. Economic – reduction of costs for the elimination of possible

complications, as well as for a long stay in the postoperative recovery room or intensive care unit, irrational use of a large number of drugs; 3. Social – increasing patient satisfaction with anesthesiology care and the course of the postoperative period. Research methodology and methods: 1. Clinical analysis of the efficacy and safety of various methods of preventing emetogenic reactions after surgery, based on follow-up postoperative examinations and the use of standardized scales for assessing the severity of postoperative nausea and vomiting syndrome; 2. Analysis of the onset of nausea and/or vomiting symptoms depending on the time of prophylaxis; 3. Analysis of the effect of various drugs (ondansetron , fosaprepitant , droperidol , etc.) and identified specific risk factors on the presence and severity of nausea and vomiting; 4. Statistical processing .

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