

**ALTERNATIVE OPTION OF PREMEDICATION IN GYNECOLOGICAL
PATIENTS DURING PERIMENOPAUSE.
(LITERATURE REVIEW)**

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ANNOTATION

This review considers methods of providing the main tasks of preventive and individualized premedication in gynecological patients during perimenopause, the use of different groups of pharmacological agents as part of premedication, and their positive and negative aspects. Operative stress-state polyfunctional changes arise in the bodies of women under the influence of aggressive factors of surgical intervention.

Keywords: Premedication, gynecology, premenopause, psycho-emotional level, anxiolytics, literature review.

One of the categories of anesthesia aid quality is safety, and the most problematic and least developed stage in its provision is premedication [12, 22]. Inadequate premedication is considered an anesthesiological complication, since preoperative emotional tension in the absence of anti-stress protection has a negative effect on almost all body functions, increasing the degree of surgical risk and the risk of perioperative complications.

There is a known variant of premedication before surgical gynecological interventions performed under general and regional anesthesia based on parenteral administration of sedatives, provision of the psycho-emotional state of a patient, and drugs for the prevention of postoperative pain syndrome ("anticipatory analgesia"). Usually, before surgical intervention, patients experience anxiety. Anxiety is a defensive reaction that allows the body to adapt to conditions of increased danger. The degree of anxiety varies and depends on the psycho-emotional characteristics of the women during perimenopause. This condition leads to psychological tension, which is manifested by insomnia, fatigue, irritability, fear, hot flashes[7, 11,12,13].

Psychological adaptive abilities are reduced in patients with a high degree of anxiety, which leads to a high surgical risk and, subsequently, to a severe postoperative period [19,20,21]. Premedication is a mandatory treatment option to relieve anxiety prior to surgery and anesthesia [26]. Premedication (lat. pre - before; lat. medicamentum medicine) is a preliminary medical preparation of a patient for general anesthesia and surgery. The purposes of this preparation are: 1) prevention of preoperative operational stress, 2) achievement of neurovegetative stabilization, 3) decrease in response to external stimuli, 4) decrease in gland secretion, 5) creation of optimal conditions for manifestation of general anesthetic agents, and 6) prevention of allergic reactions in response to anesthetics and infusion of medications. Premedication is performed using a combination of drugs, and in most cases, narcotic analgesics, sedatives, and antihistamines.

Premedication often consists of two stages. The evening before surgery, sleeping pills were prescribed in combination with tranquilizers and antihistamines. In particular, excitable patients repeat these drugs 2 h before surgery. In addition, anticholinergic drugs and analgesics are usually administered to all patients 30-40 minutes before surgery. If cholinergic drugs are not included in the anesthesia plan, the administration of atropine before surgery may be neglected; however, an anesthesiologist should always have the opportunity to administer it during anesthesia. If cholinergic drugs (succinylcholine, foran, and its analogs) or instrumental irritation of the airways (tracheal intubation, bronchoscopy) are planned during anesthesia, there is a risk of bradycardia with a possible decrease in blood pressure and development of more serious cardiac rhythm disturbances. In this case, anticholinergic drugs (atropine, methacin, glycopyrrolate, and hyoscine) were administered for vagal reflex blockade in premedication [1,4,6].

Premedication may not always be adequate, depending on the tactics of its implementation, considering many factors and the protective-adaptive mechanisms of the body. Inadequate premedication does not relieve existing psycho-emotional stress and has a negative impact on the postoperative period, leading to various complications that may occur even after recovery from the underlying disease or healing of the operating wound [1.4].

According to several authors, it is necessary to divide premedication into curative and prophylactic, which in turn are divided into individualized, proactive, and so on. It is generally accepted that therapeutic premedication is used to correct impaired vital body function before surgery and prophylactic premedication is used to prevent complications that may arise during surgery and anesthesia [11,15].

To determine the tactical orientation of premedication, dosages and drugs, it is necessary to identify the existing pathology, as well as to assess the level of anxiety of the body. Despite the large number of studies, the problem of studying the individual mental evaluation of patients in the perimenopause period before gynecological surgery remains topical.

For this purpose, the authors mostly used different scales to assess the psycho-emotional state of an organism, determined the stress index of regulatory systems on the basis of the variational pulsometry method [5, 13, 14], used an integrative anxiety test as a criterion of adaptation level [5, 16], studied neurovegetative, respiratory, and hemodynamic indices [15, 16], and assessed the psycho-emotional state of patients and variants of its manifestation. The studies conducted allowed us to establish that psychoemotional tension syndrome manifests in varying degrees of tension, from a sense of discomfort to neurotic breakdown [2,4,5]. These states can be categorized into different types of mental reactions.

There are 5 types of reactions (according to A.F. Bizyaev): asthenic, depressive, anxious, hypochondriacal, hysterical, when determining a patient's psychoemotional state according to clinical signs.

1. Asthenic reaction is characterized by vegetative lability, headaches, increased fatigability, irritability, tearfulness.
2. In the depressive reaction, a depressed mood, soft voice, lack of confidence in treatment success, the patient is not verbal.
3. Anxiety manifests as worrying, excitement, fear of a bad outcome, poor sleep, and increased heart rate.

4. In the hypochondriac reaction, the patient presents many complaints and details, describes sensations and events in chronological order in detail, is willingly examined, and a discrepancy between the abundance of complaints and the pathological changes determined is found.

5. Hysterical vegetative reactions (lump in the throat, lack of air, tremors of the fingers, and red spots on the skin of the face and neck). Demonstrability, theatricality, and aspiration to draw attention to oneself and cause sympathy are noted in the behavior of such patients. The latter is more common in women.

In-depth analysis revealed that psycho-emotional tension can be divided, depending on the level of involvement of the central nervous system, into central (difficulties in concentration and control of consciousness over external manifestations of emotions) and peripheral (increase of muscular tension, increase of vascular reaction). It has been established that patients' anxiety before surgery is a classical variant of emotional stress that affects the functioning of organs and systems of an organism: cardiovascular, respiratory, urinary, endocrine, and especially vegetative [14]. As can be seen from the above, psychological reactions in perimenopausal women are heterogeneous and vary in severity, requiring an individual approach when prescribing premedication.

Therapeutic premedication consists of the correction of the identified disorders of various organs and body systems and is determined by the anesthesiologist, therapist, gynecologist, and other specialists. More attention should be paid to preventive, individualized, and anticipatory premedication. Concepts, such as standard and classical premedication, should have no place in the anesthesiologist's vocabulary and actions. Evaluating the effectiveness of the preoperative preparation of perimenopausal patients, we can conclude the advantage of using low doses of estrogen (2 mg/day) for 5-7 days as a component of therapeutic premedication. Having a specific hormonal effect, estrogen therapy contributes to stabilization of psychoemotional disorders, as well as normalization of cardiovascular system function. This reduces the terms of patients' preparation for an operation, leads to a favorable course, and decreases the frequency of postoperative complications [10,15,17].

Prophylactic premedication. Neuroleptics, narcotic analgesics, choline-blocking agents, and antihistamines in the form of universal drug regimens, hypnotics, and psychotropic agents are used to meet the basic requirements of preventive premedication. The best known drug combinations are narcotic analgesic + vagolytic, narcotic analgesic + vagolytic + barbiturate, narcotic analgesic + vagolytic + small tranquilizer, large tranquilizer + vagolytic, and narcotic analgesic + vagolytic + antihistamine + small tranquilizer [2]. The introduction of narcotic analgesics as premedication to reduce psychoemotional preoperative stress has become common and necessary. The mechanism of action of this group of drugs is due to a decrease in the perception of pain impulses in the CNS and an increase in the threshold of pain sensation with the elimination of the destructive nature of pain [15]. At the same time, it was found that the use of narcotic analgesics and antihistamines alone did not lead to a decrease in anxiety or sympathetic nervous system activation, and the presence of negative effects of opioid analgesics forces the authors to search for drugs with increased respiratory safety [16]. As a psychotropic agent, droperidol is introduced as a premedication, causing neuroleptic syndrome, which is characterized by complete emotional rest, absence of active movements, indifference to events, and vegetative stabilization [15]. As a psychotropic agent in the aspect of premedication, droperidol is significantly inferior to diazepam because, despite clinically pronounced tranquilization and vegetative stabilization, it often causes mental discomfort, internal anxiety, irritability, bad moods, uncommunicability. In view of the above, droperidol is not considered to be the optimal psychotropic agent for premedication.

Traditionally used for premedication, benzodiazepine tranquilizers have the necessary qualities to eliminate the symptoms of anxiety, fear, mild depressive disorders, and sleep disorders (anxiolytic (lat. anxius-anxious and Greek lysis-dissolution), sedative, hypnotic, muscle relaxant, anticonvulsant, and vegetative stabilizing effects) [13]. Drugs completely block psycho-emotional stress reactions by inhibiting brain structures responsible for emotion regulation [12].

The sedative (calming) effect is associated with the action of drugs on other types of benzodiazepine receptors localized in the reticular formation of the brain stem and

nonspecific nuclei of the thalamus. This effect was most pronounced with phenazepam, diazepam, and lorazepam, but little pronounced with mesepam and midazolam. The moderate central myorelaxant effect of benzodiazepines is a positive property, as it reduces alertness and anxiety and helps relieve nervous anxiety. Diazepam drugs, such as Sibazon and Seduxen, express myorelaxation well [14].

The hypnotic effect of benzodiazepines causes a rapid onset of sleep, increases its duration, and prolongs the effect of central nervous system depressants. Nitrazepam, diazepam, and phenazepam exhibited the most pronounced hypnotic effects. These unique properties make benzodiazepines a leading means of premedication. However, as clinical experience shows, the use of one tranquilizer in premedication as the main drug to block psycho-emotional tension before surgery is not always justified[8].

The use of benzodiazepines is accompanied by the recovery of vegetative balance only in patients with low and average levels of personal anxiety, while in patients with high levels of anxiety against the background of chronic stress, benzodiazepine use disturbs the vegetative mechanisms of cardiac rhythm regulation and reduces heart rate performance due to sympathetic activity exhaustion [11].

The main pharmacological problem associated with the use of benzodiazepines is their ability to cause addiction and withdrawal syndromes. In addition, conventional doses of benzodiazepines have either insufficient or excessive effects, accompanied by depressed consciousness, especially in elderly and weakened patients, which requires an individual approach for their use in premedication [8]. The use of dalargin, as well as pharmacological analogs of CNS inhibitory neurotransmitters (taucard, felyson, and phenibut), is recommended to increase the stress-limiting capacity of premedication and stabilize autonomic homeostasis.

Individualized premedication. Individualization of premedication based on the study of psychological testing data is becoming a promising direction in the development of anesthesiology, since preoperative psychopathological conditions, which depend on personality type, vary in their structure, external manifestations, and severity of disorders. However, to date, there are no comprehensive objective methods for the examination of perimenopausal women in the preoperative period, and the subjective and clinical criteria

used cannot accurately reflect the body response. To assess preoperative emotional stress, a subjective assessment using a special grading scale indicating the degree of severity of autonomic reactions with objective assessment using cardiointervalography is often used [7,8,9,10].

Assessment of premedication quality is also a problem. Adequate premedication is a complex therapeutic and preventive measure that normalizes psychoemotional status and increases reactivity and resistance to upcoming surgical intervention [1,13]. The efficacy of psychotropic therapy was evaluated using a special unified scoring system to assess the effect of psychotropic drugs with simultaneous mathematical analysis of heart rate, using the results of the ningidrine test, while determining the magnitude of sweating using a prognostic approach [11,12,15].

To determine the efficiency of premedication, we offer a scale of points, a method of registration of skin-galvanic reactions, measurement of gas exchange value before surgical intervention (at that, the increase in gas exchange by 10-12 % is regarded as a sign of negative emotions), changes in somatosensory and auditory evoked brain potentials [9], a comparative assessment of the intensity of processes, changes in cortisol level [5,29], examination of blood circulation parameters, determination of temperature difference in the mouth and skin of the wrist, and correspondingly, the changes in the blood circulation.

Activation of the hormonal link of the sympathetic nervous system out of operation trauma is regarded as a consequence of a general unspecific body reaction to emotional stress before the operation, which cannot be completely cut off by premedication. Other researchers consider hypercatecholema before upcoming surgery to be necessary and able to compensate for future hemodynamic changes. At the same time, no studies have defined the pathological level of corticosteroids in this situation [15,36,39].

Thus, the development of medical science and surgical technologies requires modern anesthesiology to optimize adequate protection for perimenopausal women already at the stage of premedication. Based on a literature review, the solution to this problem consists of several aspects.

- a) Preventive premedication based on an objective assessment of the preoperative psychoemotional status of a particular patient (conditioned by a certain type of mental reaction)
- b) Individual choice of preparation for premedication
- c) Development and improvement of the available objective criteria for adequacy.
- d) Development of new drugs that do not differ in effectiveness from classical anxiolytics, but are devoid of their disadvantages.

The following conclusions were drawn from the literature review: A number of controversial and contradictory judgments remain in determining the mechanisms and patterns of the preoperative psychoemotional state of patients during perimenopause. A number of controversial and contradictory judgments remain in determining the mechanisms and patterns of preoperative psychoemotional state of patients during perimenopause. There is still no consensus on the objective assessment of the preoperative psychoemotional state of gynecological patients during perimenopause, and the available classifications are based on single criterion-symptomatology. Although there is unanimity among researchers regarding the need for individual (depending on the preoperative psycho-emotional status) premedication, the methods for assessing its effectiveness are extremely contradictory and difficult to determine, and the interpretation remains controversial. The presence of a variety of drugs and their combinations for the purpose of premedication indicates a lack of effectiveness of preoperative protection in patients. These problems are relevant and will be the subject of future research.

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