PECULIARITIES OF MEDICATION PREPARATION IN GYNAECOLOGICAL PRACTICE

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Abstract: The review considers the ways of ensuring the main tasks of different groups of pharmacological agents as part of premedication, their positive and negative sides. Surgical stress is a state of polyfunctional changes occurring in the patient's body under the influence of aggressive factors of surgical intervention. The functions of the central nervous system, endocrine system, blood circulation and respiration, liver and kidneys, immunity and metabolism are changed.

Key words: premedication, psychoemotional level, anxiolytics, benzodiazepines, literature review.

Introduction: Premedication before surgical gynaecological interventions performed under general and regional anaesthesia is known, based on parenteral administration of sedatives to ensure the psycho-emotional state of the patient and drugs for the prevention of postoperative pain syndrome (‘proactive analgesia’). It is common to experience anxiety before surgery. Anxiety is a normal defence reaction that allows the organism to adapt to conditions of increased danger. The degree of anxiety is different and depends on the psycho-emotional features of the organism of women with menopausal syndrome. This condition leads to psychological tension, which is manifested by insomnia, rapid fatigue, irritability, fear, hot flashes.

Psychological adaptive capabilities are reduced in patients with a high degree of anxiety, which leads to high surgical risk and subsequently to a difficult postoperative period [19]. To relieve anxiety before surgery and anaesthesia, premedication is a mandatory therapeutic tool [26]. Premedication (from Latin pre - before; Latin medicamentum - medicine) is a preliminary medical preparation of the patient for general anaesthesia and surgical intervention. The purpose of this training is 1) prevention of preoperative, surgical stress; 2) achievement of neurovegetative stabilisation; 3) reduction of reaction to external stimuli; 4) reduction of glandular secretion; 5) creation of optimal conditions for manifestation of the effect of general anaesthetics; 6) prevention of allergic reactions in response to the use of drugs and infusion media during anaesthesia. Premedication is performed by a combination of

drugs and in most cases includes narcotic analgesics, sedatives and antihistamines.

Premedication most often consists of two stages. In the evening before the operation, sleeping pills in combination with tranquillisers and antihistamines are administered orally. Particularly excitable patients these drugs are repeated 2 hours before surgery. In addition, anticholinergic agents and analgesics are usually administered to all patients 30-40 minutes before surgery. If cholinergic drugs are not included in the anaesthetic plan, the administration of atropine before surgery can be neglected, but the anaesthetist should always be able to administer it during anaesthesia. It should be remembered that if during anaesthesia it is planned to use cholinolytic drugs (succinylcholine, phoran) or instrumental irritation of the respiratory tract (tracheal intubation, bronchoscopy), there is a risk of bradycardia with a possible drop in BP and the development of more serious cardiac arrhythmias. In this case, premedication with anticholinergic drugs (atropine, methacin, glycopyrrolate, hyoscine) is indicated to block vagal reflexes [1,4,6].

Premedication may not always be adequate depending on the tactics of its implementation, taking into account many factors and defence-adaptive mechanisms of the body.

Inadequate premedication does not relieve the existing psycho-emotional tension and negatively affects the postoperative period, leading to various complications that may appear even after the cure of the underlying disease or healing of the surgical wound [1]. According to a number of authors, premedication should be divided into therapeutic and prophylactic, which, in turn, are divided into individualised, proactive and others. According to the generally accepted opinion, therapeutic premedication is carried out in order to correct the disturbed vital functions of the organism. organism before surgical intervention, as well as prophylactic measures to prevent complications that may arise during surgery and anaesthesia [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. And here we should admit that, despite the large number of works, the problem of studying individual mental assessment of menopausal patients before gynaecological surgeries remains relevant.

For this purpose, the authors mainly used various scales to assess the psychoemotional state of the organism, determined the stress index of regulatory systems on the basis of the method of variation pulse oximetry [5,13,14], used as a test the integrative test of anxiety, the criterion of adaptation level [5,16], studied neurovegetative, respiratory and haemodynamic indices [15,16], assessed the

psychoemotional state of patients and its manifestations. The conducted studies allowed us to establish that the syndrome of psychoemotional tension is manifested by different degrees of tension - from a feeling of discomfort to a neurotic breakdown [2,4,5]. These states can be divided into different types of mental reactions.

When determining the psychoemotional state of a patient according to clinical signs, 5 types of reactions are distinguished (according to A.F. Bizyaev): asthenic, depressive, anxious, hypochondriacal, hysterical.

1. asthenic reaction is characterised by vegetative lability, headaches, rapid fatigue, irritability, tearfulness.

2. In connection with the depressive reaction is noted depressed mood, low voice, uncertainty in the success of treatment, the patient is a little verbal.

3. Anxiety reaction is manifested by anxiety, excitement, fear, fear of failure, poor sleep, increased pulse rate.

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

5. Hysterical - vegetative reactions (lump in the throat, shortness of breath, tremor of fingers, red spots on the skin of the face and neck). The behaviour of such patients is marked by demonstrativeness, theatricality, the desire to attract attention to themselves, to cause sympathy. The latter are more common in women.

In-depth analysis revealed that psychoemotional stress can be divided depending on the degree of CNS damage into central (difficulties in concentration of attention and control of consciousness over external manifestations of emotions) and peripheral (increased muscle tension, increased vascular response). It has been established that the experience of patients before surgery is a classic variant of emotional stress, which affects the functioning of organs and systems of the body - cardiovascular, respiratory, urinary, endocrine and especially autonomic [14]. As can be seen from the above, psychological reactions in women with menopausal syndrome are heterogeneous and vary in severity, which requires an individual approach when prescribing premedication.

Therapeutic premedication consists in the correction of identified disorders of various organs and systems of the body and is determined by the anaesthesiologist together with the therapist, gynaecologist and other specialists. Preventive, individualised and proactive premedication requires closer attention. Concepts such as standard, classical premedication should have no place in the vocabulary and

actions of the anaesthesiologist. Assessing the effectiveness of preoperative preparation of patients with concomitant menopausal syndrome, we can conclude the advantage of using low doses of estrogens (2 mg/day) for 5-7 days as part of therapeutic premedication. Having a specific hormonal effect, estrogen therapy contributes to stabilisation of psycho-emotional disorders, as well as normalisation of cardiovascular system function. All this reduces the time of preparation of patients for surgery, leads to its favourable course and decreases the incidence of postoperative complications [10,15,17].

Prophylactic premedication. To fulfil the basic requirements of prophylactic premedication, neuroleptics, narcotic analgesics, choline-blocking and antihistamine agents are used in the form of universal drug regimens, sleeping pills, psychotropic drugs. The most well-known combinations of drugs are as follows: narcotic analgesic + vagolytic; narcotic analgesic + vagolytic + barbiturates; narcotic analgesic + vagolytic + small tranquiliser; large tranquiliser + vagolytic; narcotic analgesic + vagolytic + antihistamine + small tranquiliser [2]. The introduction of narcotic analgesics in premedication to reduce psychoemotional preoperative tension has already become generally accepted 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, an increase in the threshold of pain sensitivity 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 does not lead to a decrease in anxiety, to a decrease in activation of the sympathetic nervous system, and the presence of negative effects of opioid analgesics forces authors to search for drugs with increased respiratory safety [16]. As a psychotropic agent in premedication, droperidol is administered, which causes the so-called neuroleptic syndrome characterised by complete emotional calmness, absence of active movements, indifference to events, and autonomic stabilisation [15]. As a psychotropic agent in the aspect of premedication, droperidol is significantly inferior to diazepam, because despite clinically pronounced tranquilisation and autonomic stabilisation, it often causes mental discomfort, internal anxiety, irritability, low mood, and communication deficit. In connection with the above, droperidol is not considered as an optimal psychotropic drug for premedication.

Benzodiazepine tranquilisers, traditionally used for premedication, have the necessary qualities to eliminate symptoms of anxiety, fear, mild depressive disorders, sleep disorders (anxiolytic (Latin anxius - anxiety and Greek lysis - dissolution), sedative, sleeping, myorelaxant, anticonvulsant, vegetostabilising effects) [13]. The

drugs provide a complete blockade of psychoemotional stress reactions due to suppression of brain structures responsible for emotion regulation [12].

The use of benzodiazepines is accompanied by the restoration of autonomic balance only in patients with low and average levels of personality anxiety, whereas in patients with high levels of anxiety against the background of chronic stress, the use of benzodiazepines disrupts autonomic mechanisms of heart rhythm regulation and reduces heart function due to the depletion of sympathetic activity [11].

Assessment of the quality of premedication also poses a certain problem. Adequate premedication is understood as a complex of therapeutic and preventive measures that normalise psychoemotional status, increase reactivity and resistance to the upcoming surgical intervention [1,13]. The effectiveness of psychotropic therapy is assessed using a special unified point system for evaluating the effect of psychotropic drugs with simultaneous mathematical analysis of heart rate, according to the results of the ninhydrin test, in determining the amount of sweating, using a prognostic approach. 11].

In order to determine the effectiveness of premedication, we use the ball scale, the method of registration of skin-galvanic reactions, measuring the volume of gas exchange before the operation (in this case, an increase in gas exchange by 10-12% is considered as a sign of negative emotion), by changing somatosensory and auditory evoked potentials of the brain [9], comparative assessment of the intensity of processes, changes in the level of cortisol [5], the study of changes in blood circulation, determination of the temperature difference in the oral cavity and skin of the hand, corresponding to the severity of ego methods of sensorimetry and sensorography that reliably detect sympathetic activation, determination of catecholamines, 11- and 17-oxycorticosteroids in blood serum [13] were introduced, since there is a reliable correlation between the concentration of catecholamines in the blood serum of patients and the level of anxiety in the preoperative period.

Activation of the hormonal link of the sympathetic nervous system outside of surgical trauma is considered to be a consequence of a general nonspecific reaction of the organism to emotional stress before surgery, which cannot be completely suppressed by premedication. Other researchers consider hypercatecholemia before the upcoming surgery as necessary, capable of compensating for future haemodynamic changes. At the same time, there are no studies determining the pathological level of corticosteroids in this situation [15].

Thus, the development of medical science and surgical technology requires modern anaesthesiology to optimise adequate protection of menopausal women

already at the premedication stage. The solution to this problem consists, based on the literature review, in several aspects:

a) preventive premedication based on an objective assessment of the preoperative psychoemotional status of a particular patient (due to a certain type of mental reactions);

b) individual selection of drugs for premedication;

c) development and improvement of the existing objective criteria of its adequacy.

d) development of new drugs, not differing in efficacy from classical anxiolytics, but at the same time devoid of their disadvantages.

Summarising the literature review, the following conclusions can be drawn. There remain a number of controversial and contradictory judgements in determining the mechanisms and patterns of development of preoperative psychoemotional state of patients with menopausal syndrome. There is still no consensus on the objective assessment of preoperative psychoemotional state of gynaecological patients with menopausal syndrome, and the available classifications are based on one criterion - symptomatology. Although there is a consensus among researchers on the need for individualised (depending on preoperative psychoemotional status) premedication, the methods of assessing its effectiveness are highly controversial and difficult to define, and interpretation remains controversial. The presence of various drugs and their combinations for the purpose of premedication indicates the insufficient effectiveness of preoperative protection of patients. The identified problems are relevant and are the subject of new research.

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