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OPTIMIZATION OF SURGICAL TREATMENT OF BRONCHIAL ASTHMA

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Abstract

The term "bronchial asthma" is commonly understood as a chronic recurrent inflammatory process in the respiratory tract, mainly of allergic origin, which leads to their hyperreactivity, labile obstruction and the appearance of respiratory symptoms such as paroxysms, dyspnea or attacks of expiratory suffocation, up to asthmatic status, wheezing and cough. This disease has been known to mankind since the 3rd-2nd centuries BC from the works of the most ancient doctors - Hippocrates and Aretaeus. To this day, hundreds of scientific papers have been published around the world devoted to various aspects of bronchial asthma, but nevertheless, the problems of etiopathogenesis and treatment of this disease have not yet found their solution. Moreover, due to environmental pollution and chemicalization of agriculture, production and everyday life, allergization of the population has increased everywhere , which is manifested by the incidence of bronchial asthma. Thus, according to epidemiological studies, 1-18% of the world's population suffers from bronchial asthma of varying severity. According to WHO, the number of people with bronchial asthma in some countries is 3-7 times higher than cancer patients and 25-100 times higher than tuberculosis patients. Every year, at least 80 thousand people die from bronchial asthma worldwide. More than 50% of healthcare costs for the treatment of elderly patients with bronchial asthma are spent on purchasing medications. The economic damage from this disease also reaches billions of dollars per year, which confirms the relevance of the problem.

INTRODUCTION

Today, a large number of different groups of drugs are used in the treatment of bronchial asthma. These drugs are divided into two groups: drugs of basic maintenance therapy and drugs of emergency cramping for relief of symptoms of the disease. These groups of drugs include beta-2-adrenergic agonists, m- anticholinergics , theophylline drugs, inhaled corticosteroids, glucocorticosteroids and combination drugs, as well as leukotriene receptor antagonists . In recent years, a significant breakthrough in the field of drug therapy of bronchial asthma has been noticeable, but, unfortunately, it is almost impossible to cure bronchial asthma at the root and get rid of it forever.

In practice, severe drug-resistant forms of bronchial asthma are often observed. Along with this, the number of side effects of traditional drug therapy and the number of patients with individual intolerance to drugs increases. These factors contribute to the weakening of the therapeutic effect of basic traditional therapy and the deterioration of the disease prognosis, which encourages researchers to search for new directions for optimizing bronchial asthma therapy.

At the beginning of the last century, surgeons decided to make their contribution to the treatment of bronchial asthma by offering various methods of surgical intervention. So, to this day, dozens

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of methods have been used, which have been combined into three groups: 1) tissue therapy methods; 2) various interventions (blockades and operations) on the autonomic nervous system; 3) treatment of bronchial asthma by resection of pathologically altered areas of the lungs.

As evidenced by the literature, many years of experience in surgical treatment of bronchial asthma have tested many theories and methods, leaving some of them in the history of surgery due to life-threatening complications, and the other part - although used, but only in those clinics where these ideas were born, because they have not found wide application due to trauma or low efficiency. Moreover, often the risk associated with general anesthesia in such operations exceeded the positive results many times, and the possibility of bleeding due to the implementation of wide accesses was alarming and limited the circle of surgeons capable of performing these operations. One of the effective methods is the "method of crossing the internal branch of the superior laryngeal nerve." The presented data indicate the relevance of this issue, which prompted us to undertake this study.

The aim of the work. Improving the results of treatment of patients with bronchial asthma by resection of the internal branch of the superior laryngeal nerve using an improved method.

Objectives and methods of the research:

1. To establish objective indications for resection of the internal branch of the superior laryngeal nerve.
2. To develop and introduce into clinical practice an improved method for resection of the internal branch of the superior laryngeal nerve.
3. To study the immediate and long-term results of treatment of patients with bronchial asthma using the method of resection of the internal branch of the superior laryngeal nerve.

Research Results:

1. The objective criterion for determining the indications for resection of the internal branch of the superior laryngeal nerve is an increase in spirometric indices - FEV1 or FVC by 12% or more during pharmacological tests. These tests were negative in 13 of all 76 patients who applied, which amounted to 17.1%.
2. The developed, standardized and perfected method of resection of the internal branch of the superior laryngeal nerve by using optical magnification and microinstruments in compliance with the principles of precision technology made it possible to accurately identify anatomical structures, minimally traumatize tissues, avoid intraoperative complications, and significantly reduce economic costs and duration of operations.
3. The performed resection of the internal branch of the superior laryngeal nerve in 68.2% of patients with bronchial asthma gave positive results, of which in 23.8% of cases there were no further asthma attacks, and, therefore, there was no need to take medications. The author's contribution to the study. The author personally compiled a detailed analysis of the literature review, covering current issues of surgical treatment, and substantiated the methods for selecting patients with bronchial asthma. The dissertation candidate participated in all surgical interventions since 2016 and over 1/3 of the total number of patients were operated on by him independently.

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The author performed statistical processing and analysis of the clinical material. The personal participation of the author is confirmed by the presented material and the data of the conclusion of the commission that reviewed the primary documentation of the study.

The accumulation of new data on the pathogenetic mechanisms of bronchial asthma development in recent years has required a revision of our views on this disease. According to modern concepts, bronchial asthma is a chronic inflammatory disease of the respiratory tract involving cells (mast cells, eosinophils, T-lymphocytes), mediators of allergy and inflammation, accompanied in predisposed individuals by hyperreactivity and variable obstruction of the bronchi, which corresponds to the definition of WHO and the National Heart, Lung, and Blood Institute (USA).

According to WHO, the prevalence of bronchial asthma in different countries reaches 10% or more . Bronchial asthma is a global health problem. There are about 300 million patients with bronchial asthma in the world. According to some prognostic analytical studies, by 2025 the number of patients with bronchial asthma may increase by another 100-150 million people.

The widespread growth of environmentally dependent and psychosomatic diseases, caused by the deterioration of the environment, the increasing role of psycho-emotional factors in the context of globalization, significantly affects the incidence of bronchial asthma and its combination with other diseases that are identical in etiopathogenetic mechanisms.

In the Republic of Tajikistan, this problem is of particular relevance. Natural and climatic conditions, hot period of the year, scarcity of precipitation, weak wind conditions reduce the ability of atmospheric air to self-purify. Low relative humidity, dry mountain air, high temperature conditions increase moisture loss from the bronchi, contribute to the development of dystrophic changes. A certain role is played by the long period of flowering of plane trees, cereals and field plants, which together contribute to the development of obstructive diseases of the bronchopulmonary system in the population and is confirmed by the indicators of medical and social statistics.

In order to identify informative criteria in determining indications for surgical treatment of bronchial asthma, objective (spirometry) and subjective (patient observations) data of patients with bronchial asthma were studied and substantiated. A new method of surgical treatment of bronchial asthma was developed and introduced into clinical practice, the advantages of which over its analogues are accurate identification of the nerve, minimal duration of the operation, as well as minimum economic costs, low trauma , routine preoperative preparation. Analysis of the immediate and remote results of surgical treatment of bronchial asthma made it possible to determine the high efficiency of the developed method of operations.

Spirometry data allow to confirm or exclude the presence of bronchial asthma in the patient being examined, and in case of establishing the diagnosis, to set indications for surgical treatment. Improvement of the technique of surgical treatment of bronchial asthma by developing and introducing into clinical practice a new method of resection of the internal branch of the superior laryngeal nerve made it possible to operate on patients in a low-trauma, non-volume, pathogenetically justified and most effective way.

Simplified preoperative preparation, standardized access and performing surgical intervention under local anesthesia allow operations to be performed on an outpatient basis.

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Currently, there is a steady increase in the number of patients with respiratory and cardiac diseases worldwide, with a tendency to increase prevalence, mortality and social burden. Respiratory diseases are the third most common cause of death, cardiovascular diseases are the first among the causes of death and one of the leading causes of disability and temporary incapacity for work [116].

Bronchial asthma is currently a serious health problem worldwide, remaining one of the most severe diseases of the bronchopulmonary system [90]. The increase in morbidity, worsening severity of the course and clinical manifestations, and increasing disability of the working-age population determine the medical and social significance of the disease. In recent years, there has been an increase in the number of severe forms of the disease and an increase in the mortality rate. At the same time, there is insufficient effectiveness of drug therapy, which is manifested in incomplete control of the disease and increased patient dissatisfaction with the quality of life.

According to the results of selective studies, up to 40% of the adult population suffers from hypertension. Currently, the pharmaceutical industry has great potential; in most cases, it is possible to find a rational combination of drugs that can reduce blood pressure, but this effect is not always stable [28]. It is known that the ultimate goal of antihypertensive therapy is to minimize the risk of developing cardiovascular complications and death from them, which is possible with stable maintenance of blood pressure within the target level.

The widespread prevalence of hypertension and bronchial asthma determines the high probability of a combination of these diseases in the same patients, which leads to damage to the two main life support systems of the body, mutual potentiation of hemodynamic and respiratory function disorders, mutually aggravates the course of diseases and creates difficulties in the treatment and control of symptoms.

This category of patients constantly has clinical symptoms of these diseases of varying severity, as well as a violation of the functional state of the regulatory systems of the body. As a result, it is necessary to use a large number of pharmacological drugs, which can lead to allergic reactions, intolerance, other side effects from drug therapy, and worsening of disorders in the immune system. In addition, with combined pathology, it is often impossible to stop or reduce the clinical manifestations of diseases due to the limited use of a number of drugs. The above created the prerequisites for searching for non-drug treatment methods, the effect of which will be pathogenetically determined both in bronchial asthma and in hypertension. There are many works proving the effectiveness of using physical factors for each disease separately and the advisability of including them in a complex of therapeutic measures together with basic drug therapy. It is logical to assume that with combined pathology, the use of physical factors will also be relevant. The choice of physical factors is based on the syndrome-pathogenetic and clinical-functional approaches. The syndromic-pathogenetic approach takes into account the pathogenetic mechanisms of disease development, i.e. certain typical reactions of the body to the action of etiological factors, as well as the prevailing clinical syndromes in a particular patient, which allows choosing a pathogenetically determined physical factor. The clinical-functional approach involves choosing a physical factor taking into account the individual characteristics of the course of the disease, dysfunctions of a particular body system. In addition, physical factors should be combined with basic drug therapy, potentiate its effect, and break the monotony of treatment.

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The most effective is the use of combinations consisting of several complementary and potentiating each other physical factors that affect several links of pathogenesis at once and simultaneously have a regulatory effect on the organs and systems of the body.

This paper presents the experience of using two combinations of physical factors in the complex therapy of patients with bronchial asthma with concomitant hypertension.

Conclusions

The diagnosis of bronchial asthma in combination with nervous activity is based on the analysis of symptoms and anamnesis, as well as the study of the function of external respiration and the data of an allergy -immunological examination.

The study of the external respiratory function (FER) significantly facilitates the diagnosis. There is a wide range of different methods for assessing the degree of bronchial obstruction, but the most widely used are the measurement of the forced expiratory volume in 1 second (FEV) and the associated measurement of the forced vital capacity (FVC), as well as the measurement of the forced (peak) expiratory flow (FEF). An important diagnostic criterion is a significant increase in FEV (more than 12%) and FEF (more than 15%) after inhalation of short-acting beta-2-agonists [127,157]. Necessary devices: spirometers that allow determining the forced vital capacity of the lungs and the forced expiratory volume in 1 second. These devices are primarily used in outpatient clinics and hospitals. Peak flowmetry is the most important innovation in the diagnosis and monitoring of bronchial asthma. Monitoring asthma with a peak flow meter allows the physician to: determine the reversibility of bronchial obstruction; assess the severity of the disease; assess bronchial hyperreactivity; predict asthma exacerbation; assess the effectiveness of treatment. Along with assessing symptoms, anamnesis, physical data and indicators of external respiratory function, studying the allergological status is of great importance for making a diagnosis. Scarification, intradermal and prick (prick test) tests are most often used. However, in some cases, skin tests lead to false negative or false positive results. Therefore, a study of specific IgE antibodies in the blood serum is often carried out. For the purpose of differential diagnosis, the following are necessary: chest X-ray, ECG, clinical blood test, sputum.

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