

Bronchial Asthma and New Ways to treat it

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Annotation: The prevalence of respiratory diseases is growing worldwide, affecting approximately 350 million people. Although asthma can affect people of all ages, it is more common in children than in adults.

Keywords: Bronchial asthma, glucocorticoids, bronchodilators, bronchospasm, allergies, obstruction.

Bronchial asthma (BA) is a heterogeneous disease characterized by chronic inflammation of the respiratory tract, shortness of breath, chest congestion and cough symptoms and intensity. This is manifested by variable airway obstruction. Bronchial asthma is considered a chronic, non-infectious, inflammatory-nature airway disease, and chronic inflammatory processes in the respiratory organs lead to their high activity, as a result of which, when exposed to an allergen or excitatory effect, bronchial obstruction (contraction) develops, which reduces the rate of air flow and leads to suffocation. A bronchial asthma attack usually develops after the triggering effect and occurs with short acute breathing and noisy prolonged breathing. It is usually accompanied by symptoms of sticky sputum and noisy cough. Bronchial asthma can lead to emphysema of the lungs and heart, the appearance of an asthma condition. Cases of asthma have increased over the past twenty years, and today about 300 million people suffer from asthma. It is one of the most common types of chronic diseases in humans, depending on gender and age. The mortality rate among people with bronchial asthma is very high. The increasing incidence of bronchial asthma in children over the past twenty years has been encouraging such hoalt to be considered not only a disease, but also a social problem, and maximum measures are being developed to combat it. Shortness of breath attacks are observed at different speeds, but even at the stage of remission (temporary relief of chronic disease), an inflammatory process is maintained in the airways. In the violation of air flow in bronchial asthma, the following components lie: blockage of the respiratory tract due to spasms of the smooth muscles of the bronchi or swelling of their mucous membrane, blockage of the bronchi by secretion due to hyperfunctions of the mucous glands of the respiratory tract, which leads to sclerotic changes in the bronchial walls, as a result of Shortness of breath attacks in bronchial asthma include three stages:

The period of excitatory action is more pronounced in bronchial asthmatic patients of an infectious-allergic nature, vasomotor reactions (runny nose, incessant hitting of the AXA) occur by the nasopharynx organs. The second period (it can begin suddenly) is expressed by a feeling of tightness in the chest, which does not allow free breathing. Breathing is sharp and short, and exhaling is long and noisy. Breathing loud wheezing, a cough with sticky sputum occurs, which causes respiratory arrhythmias. During the attack, the patient's position is mandatory, he usually sits, leaning forward, trying to pull his elbows to his knees. The face will swell and the neck veins will swell at the time of exhaling. Depending on the severity of the attack, muscle involvement can be observed to help overcome resistance in breathing. In percussion, the sound is clear and similar to the sound that comes out when you hit an empty box, because there is increased air in the lungs, lung mobility is limited, and their boundaries are shifted downward. When the lungs are heard, it is heard to exhale with long and weakened and dry wheezing. During the period of back development, the gradual release of sputum begins, the number of wheezes decreases, and the attack of shortness of breath decreases more and more. The most characteristic appearance of the disease is a suffocation attack. This often occurs after contact with an allergen or under the influence of a triggering factor - when inhaling cold, moist air, tobacco smoke, or during psycho-emotional stress. The attack develops suddenly, its symptoms grow rapidly. The person feels that it is difficult for him to breathe, a severe cough appears, shortness

of breath increases, and wheezing can be heard from the outside. If medical care is not provided in time, the person's condition worsens - shortness of breath increases, cough increases, a feeling of restlessness, anxiety, fear appears, the face swells, the skin acquires a cyanotic color. Symptoms of an attack can disappear on their own, but often special preparations are needed to eliminate them-fast acting bronchodilators are among them. The patient inhales from the suspension of the drug, which penetrates into the airways and quickly leads to their expansion. Air access to all parts of the lungs is restored, breathing becomes easier. . Also, symptoms of bronchial asthma often occur at night when coughing, feeling of discomfort, heaviness in the chest, especially under the influence of provoking factors, long-term, acute respiratory viral infection is difficult to treat. The origin of bronchial asthma has not yet been fully studied. Bronchial asthma is a type of multifactorial disease. . The likelihood of its development is influenced by the following factors. Exposure to allergens in the house (especially house dust, household chemicals, feathers and pillow fluff). Working conditions. A number of chemicals lead to the development of occupational asthma: metals, aldehydes, animal allergens, flour and wood dust, resins, adhesives, latex. Among Cattlemen, food and chemical industry workers, medical workers, welders, Dyers, hairdressers, construction and woodworkers, there is a high risk of contracting this pathology. Heredity. As a rule, in the family of a patient with asthma, there is a high probability of occurrence even in the rest, if one of the relatives suffers from this disease or has another pathology of an allergic nature. Climatic conditions (temperature and humidity, soil characteristics, altitude and other factors). In valleys and plains with high groundwater levels, areas with dominant flower soils tend to have much higher rates of asthma. The movement of low clouds, cyclones and large air masses fronts more than doubles the number of asthma attacks than in calm weather. Seasonality. Some patients with asthma are sensitive to high and low temperatures, so an exacerbation of their pathology occurs in the winter and summer months. In individual patients, the seasonality of the disease may be associated with the flowering period (seed ripening) of certain plant species. In the diagnosis of bronchial asthma, it is important to distinguish bronchial asthma from acute left ventricular failure (cardiac asthma), obstructive or asthmatic bronchitis. An accurate diagnosis cannot be made based solely on symptoms. The diagnostic complex includes: Study of family history, analysis of the patient's background of predisposition to allergies, detection of skin rashes, allergic rhinitis. It will be necessary to assess the clinical condition of the patient, the dynamics of the disease, the frequency, intensity and duration of seizures. Physical examination. During auscultation, the pulmonologist hears whistling and wheezing sounds, and specific stretching noises during breathing and breathing. On percussion, a low tympanic sound is recorded-a sound (the sound of a box) is heard, similar to knocking on a cardboard box. Spirometry is a method of determining the volume and speed of air permeability in the bronchi using hardware. This method of examination is performed to assess external breathing. Picfloumetry is the instrumental determination of the maximum exhalation flow. Bronchoscopy-examination of the bronchi. A flexible endoscope equipped with a video camera and lighting system is inserted through the mouth. On the screen it will be possible to clearly see the image of the inner surface of the bronchial tract. Electrocardiography (ECG) testing is also used to assess the functional capacity of the heart. An X-ray or computed tomography of the chest is also carried out to assess the condition of the respiratory system. Skin allergy tests are tests for identifying allergens that cause suffocation. To do this, the test consists in introducing the minimum doses of the allergen into the body. If there is an immunological reaction, itching, swelling or rash will occur. The method of conducting skin allergy tests is chosen by a pulmonologist - through scarification, application, intradermal, application and injection tests. Provocative visual test with a nebulizer - it is checked by thinning allergens through a mask under the supervision of a doctor. A blood test for Immunoglobulin E, A radioallergosorbent test for IgE, is also performed in patients. The study of the gas composition of the blood - to determine the saturation, partial pressure of oxygen and carbon dioxide, the concentration of bicarbonate anions in the plasma. In addition, clinical examinations of sputum, blood, urine are also carried out. In combination with these examinations, consultations with an endocrinologist, cardiologist, neurologist and psychiatrist are prescribed. If bronchial asthma is suspected in adults, the patient will undergo a detailed pulmonary and allergological examination. The main goals of the examination: it will be necessary to determine the fact of predisposition to

bronchospasm, determine the cause of attacks, determine the mechanisms of development of the disease, diagnose concomitant diseases, including allergic nature. The degree of suffocation (bronchospasm) will have to be assessed quantitatively. Research in recent years has confirmed the indisputable link between the severe course of bronchial asthma and the presence of chronic, recurrent infectious and inflammatory diseases caused by intracellular microorganisms (chlamydia, Mycoplasma), viruses (cytomegalovirus,), slow, difficult-to-treat diseases. Due to the need to sanitize the Barr virus, herpes virus, bacteria, fungi, helminths, foci of chronic infection and correct the immune status (in the presence of clinical signs of immunity), the following measures are carried out. After therapy, the study of the state of immunity with control, virologic examination, diagnosis of parasitic infestation (analysis of feces for worm eggs, detection of antibodies to helminths). Symptoms of bronchial asthma are characteristic not only of this condition, but also of other respiratory diseases. Therefore, asthma can be easily replaced with other diseases such as chronic obstructive pulmonary disease.

Most types of asthma in adults cannot be treated, so the main goal is to control the patient's condition rather than treat the disease. This includes establishing and supporting symptom control, preventing any worsening of symptoms and asthma attacks. Health professionals use the term "asthma control" to describe how effectively symptoms are controlled and their effects on daily activities. The term "asthma control" is used to describe difficulties in controlling asthma with medications and helps doctors determine the desired level of treatment. Disease Control includes: exclusion of passive and active smoking, identification of any factors that cause or worsen symptoms, to prevent the release of respiratory allergens, to determine the amount of high levels of pollutants in the air.

Treatment methods. The principles of treating bronchial asthma vary depending on the severity and period of the disease. First of all, it is necessary to stop or reduce contact with allergens: air purifiers, air conditioners, humidifiers, vacuum cleaners, special coatings for bedding, carpet dust, pet storage, hypoallergenic diet and other measures are prescribed to patients. Drug therapy is prescribed depending on the severity of the disease and is prescribed taking into account the complications of the underlying disease and the presence of concomitant pathology. Allergen specific immunotherapy (ASIT) is the main method of treating bronchial asthma. Indications for ASIT in patients with atopic asthma: clear confirmation of the role of the allergen in the development of the disease (dust, House allergens, pollen, fungi), confirmation of the immunoglobulin E dependent mechanism of sensitization, inability to stop the patient's contact with the allergen, age from 5 to 50 years. Contraindications to allergen specific immunotherapy: exacerbation of asthma, severe asthma, pregnancy, oncological, autoimmune, mental disorders, blood diseases, acute infectious diseases, chronic infections in the acute stage.

The purpose of this method is to reduce susceptibility to an allergen of causal importance, which affects an immune mechanism similar to vaccination. The safety and effectiveness of ASIT has been confirmed by many years of medical use in all developed countries. The duration of treatment is 3-5 years. Treatment courses took a short season, full pre-season, conducted throughout the year. The course of selection and treatment of allergens is prescribed only by allergology and is carried out in a medical institution. Allergens (or a mixture of 2-3 allergens) are used in the form of subcutaneous injection or in low dose under the tongue (for children), according to standard or individual regimes. During the treatment, the dosage and concentration of allergens increases. Immunotherapy helps Biza achieve the following effectiveness. Prevents the transition of ASIT to more severe forms of BA, the need for the volume of drug therapy is reduced, leads to remission of the disease (up to several years), prevents the expansion of the spectrum of allergens. In order to have a positive effect, treatment treatments will have to be started as early as possible that is, the treatment will shrink more easily if carried out at the stage of allergic rhinitis or when the first symptoms of asthma appear.

In combination with the above treatment, medicament treatments are also carried out. Complex drug therapy for asthma is carried out in several directions: stabilizing the condition - maintaining respiratory function; rapid elimination of paroxysms; prevention of irreversible bronchial obstruction.

Two groups of drugs for the respiratory system are the main ones - supportive (for permanent use) and situational (to eliminate the attack of suffocation). The first group includes: methylxanthines - based on theophylline (Theopec) with moderate bronchodilator action. Systemic anti-inflammatory drugs. Drugs that prevent increased capillary permeability. Combined cough suppressants. Vasoconstrictor nasal drops-for seasonal use. Immunomodulators-strengthening local and general immunity.

Glucocorticoids are used to treat bronchial asthma. The regimen and doses of hormone therapy are selected individually. Self-medication with hormones, at best, can lead to the development of tachyphylaxis (addiction), at worst, provoke a heart attack or severe bronchospasm.

Asthma is a chronic disease that cannot be completely cured, but medications can help patients maintain a normal quality of life. When medicament patients are treated without the method, the prognosis does not give a good result. Patients can even die from respiratory failure. A specific prophylaxis of bronchial asthma has not been developed. To reduce the number of attacks, doctors recommend avoiding provoking factors - tobacco smoke, allergens, dust. In addition, breathing fresh air for people with asthma, taking a walk, using air purifiers will eliminate asthma attacks if they are small. It is also recommended to live not near highways, but in a forest or park, away from exhaust gases and other contaminants.

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