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Diseases of the respiratory system

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Abstract:

After heart and vascular diseases, respiratory diseases are the second most common in the practice of a general practitioner. Despite the rapid evolution of the production of antibiotics and antiviral drugs, drug and immunocorrective therapy, respiratory diseases are the leading cause of temporary disability among the population of our country. The most significant of this group of pathologies are: acute respiratory infections (ARI), pneumonia, chronic nonspecific lung diseases (CNPD).

Key words: antibiotics, bronchitis, tracheitis, bronchial asthma, pneumonia, shortness of breath, pyrometry .

Introduction

Respiratory diseases are a large group of diseases of various origins and etiologies with the pathological process localized in the respiratory tract. Depending on the department, all of them can be divided into two large groups - diseases of the upper respiratory tract and lower respiratory tract. The first group includes pathologies of the nasal cavity, nasopharynx and oropharynx, the second group includes diseases of the larynx, trachea, bronchi and lungs.

Let's consider the main reasons that result in diseases of the respiratory system. Respiratory diseases include bronchitis, tracheitis, bronchial asthma, pneumonia, etc. The main cause is microorganisms (bacteria, viruses, fungi, less often parasites).

The leading role belongs to such bacterial pathogens as: pneumococci, Haemophilus influenzae, mycoplasma, chlamydia, legionella (these pathogens mainly cause pneumonia), mycobacterium tuberculosis, influenza viruses type A and B, respiratory viral infections. More often, the disease is caused by one type of pathogen (monoinfection), but sometimes (old age, AIDS and other immunodeficiency diseases) there can be several of them (mixed infections). Acute respiratory infections (ARI) are diseases caused by viruses and bacteria, as well as other microbes that affect the upper respiratory tract (nose, nasopharynx, oropharynx, trachea) with the development of inflammation there. The peak incidence of ARI occurs in autumn and winter. According to the latest available statistics, ARI accounts for about 70% of all respiratory tract diseases. The incidence rate is especially high in children and adolescents - up to 9 episodes per year. This incidence of ARI, in its essence, forms the basis of a special category of patients – “frequently ill children”.

Depending on the etiology, all diseases of the respiratory system can be divided into four groups:

- infectious – they are caused by bacteria, fungi, viruses, protozoa and helminths;
- allergic – develop as a result of exposure to substances to which a person has an individual hypersensitivity;
- autoimmune – occur due to a malfunction in the immune system, as a result of which it begins to fight the body's own cells;
- hereditary are genetically determined developmental anomalies or diseases that arise against the background of a congenital predisposition.

Also quite often the cause of damage to the respiratory system is external allergens. These include:

- Household allergens - house dust, which contains allergens of fungi, insects, pets, particles of human skin and others. House mites (the main cause of bronchial asthma) have the greatest allergenic properties.
- Animal allergens are found in animal saliva, dander and urine.
- Allergens of mold and yeast fungi, namely their spores.
- Plant pollen (herbs: nettle, plantain, wormwood, flowers: buttercup, dandelion, poppy, shrubs: rosehip, lilac, trees: birch, poplar and others), fungal spores, insect allergens.
- Professional factors (electric welding - nickel salts, steel fumes).
- Food allergens (cow's milk).
- Medicines (antibiotics, enzymes).

Diseases of the respiratory system are provoked by air pollution, household pollution contained in modern residential premises (household chemical products, synthetic materials, varnishes, paints, glue), smoking (active, passive) due to the negative effects of tobacco smoke, unfavorable climatic conditions (low temperature, high humidity, strong fluctuations in atmospheric pressure).

Provoking factors also include alcohol abuse, hypothermia, the presence of diseases of other organs and systems (diabetes mellitus, heart disease), the presence of foci of chronic infection, hereditary anomalies and many others.

Each respiratory disease has its own specific symptoms, thanks to which the doctor can make a differential diagnosis. And yet, most pathologies also have common signs indicating damage to the respiratory system.

Cough. A protective reaction of the body aimed at clearing the respiratory tract from mucus, dust and smoke particles, foreign bodies and other foreign agents.

Sore throat or chest. Always accompanies the inflammatory process. It occurs as a result of the production of certain substances and is a signal that health problems have appeared in the body.

Dyspnea. Feeling of lack of air. It appears when the respiratory system cannot provide complete gas exchange that meets the current needs of the body. In most cases, it is an adaptive reaction, due to which the volume of incoming oxygen increases and excess carbon dioxide is removed.

Sputum. Pathological discharge from the respiratory tract that accompanies many diseases, and not only of infectious etiology.

Hemoptysis. Indicates bleeding in the respiratory organs. It is a sign of a serious pathology or a complication of the disease.

The listed symptoms will not necessarily be present "in full" in the clinical picture of each respiratory tract disease. But at least one or two of them will always show themselves.

Shortness of breath can be physiological (with increased physical activity), pathological (with diseases). It can also be inspiratory when there is difficulty in inhaling (diseases of the larynx, trachea), expiratory when there is difficulty in exhaling (with damage to the bronchi) and mixed (thromboembolism of the pulmonary artery).

The most severe form of shortness of breath is suffocation (with acute pulmonary edema). If suffocation occurs in the form of a sudden attack, then it is asthma (bronchial - spasm of the small bronchi, cardiac - due to weakening of the heart).

The next symptom of respiratory diseases is coughing (a reflex protective reaction to the accumulation of mucus in the larynx, trachea or bronchi, as well as to a foreign body that has entered the respiratory system). The nature of the cough can be dry, without sputum production (laryngitis, dry pleurisy) and wet, with sputum production of varying quantities and quality (morning cough with chronic bronchitis, evening cough with pneumonia, night cough with tuberculosis, cancer). It can also be constant (with inflammation of the larynx, bronchi) and periodic (with influenza, acute respiratory infections, pneumonia).

Another symptom is hemoptysis (blood coming out with sputum when coughing). It can manifest itself both in diseases of the respiratory system (lung cancer, tuberculosis, lung abscess) and in diseases of the cardiovascular system (heart defects). The blood released when coughing with sputum can be fresh (scarlet) or altered. Scarlet blood is found in tuberculosis and ascariasis. With lobar pneumonia in stage 2 of the disease, it is rusty in color (rusty sputum).

Another thing patients may complain about is Pain. It can be different in origin and localization, in nature, intensity, duration, in connection with the act of breathing, coughing and body position.

Research methods.

Correctly collected complaints, examination and competently conducted examination (palpation, auscultation, percussion) are the key to a correct diagnosis. With all this, additional signs of disease can be identified.

Instrumental and laboratory research methods. X-ray research methods (fluoroscopy, radiography, tomography, bronchography, fluorography) are the most important in the diagnosis of respiratory diseases. Endoscopic research methods (bronchoscopy, thoracoscopy). Bronchoscopy is important for diagnosing purulent and tumor diseases. But it is used not only as a diagnostic, but also as a therapeutic (for example, to remove foreign bodies).

Functional diagnostic methods. These methods do not allow diagnosing the disease that led to respiratory failure, but they make it possible to detect its presence, often long before the first symptoms appear.

Spirography is a measurement of lung volume. Using spirography, the doctor analyzes the level of oxygen consumption, i.e. identifies reserves of the respiratory system, the need for which may arise when performing heavy physical work or in case of respiratory disease.

Ergospirography is a method that allows you to determine the amount of work that a subject can do without the appearance of signs of respiratory failure.

Spirometry is a fairly simple and informative method for studying the function of external respiration, which includes measuring volume and velocity parameters of breathing in order to identify chronic bronchopulmonary pathology and evaluate the effectiveness of treatment. Spirometry can also be used as a motivational tool, for example when it is necessary to convince a smoker to stop smoking by showing him test results indicating impaired lung function.

Laboratory research methods. Microscopic examination of sputum to determine its composition, it can be mucus, serous fluid, blood cells and airways, protozoa, helminths and their eggs. Other laboratory methods include a general and biochemical blood test, and a general urine test.

Prevention of respiratory diseases

To reduce the risk of respiratory diseases, it is important to follow a number of simple preventive recommendations:

1. Quit smoking or avoid exposure to tobacco smoke. Smoking is one of the main causes of respiratory system diseases. If you are having trouble quitting smoking, seek help from your doctor or join a smoking cessation program.
2. Monitor your immune system. Strengthening your immune system can help prevent respiratory infections. Exercise regularly, eat right, get enough sleep and avoid stressful situations.
3. Keep the air in your living and working environment clean. Ventilate rooms, avoid using chemicals that can pollute the air, and use air purifiers when necessary.
4. Avoid contact with allergens that can cause asthma attacks or other allergic reactions. If you have allergies, know your triggers and take appropriate steps to minimize your exposure.
5. Regularly conduct preventive examinations with a doctor to identify respiratory problems in the early stages. If you experience symptoms such as cough, shortness of breath or chest pain, contact your doctor as soon as possible.

Respiratory diseases can significantly affect our health and quality of life. Therefore, it is important to take all necessary measures to prevent them. By following these recommendations and making positive changes in our lifestyle, we can reduce the risk of developing these diseases and keep our respiratory health.

The main thing is to maintain a healthy lifestyle: giving up bad habits (smoking, alcohol, etc.), regular physical exercise, adherence to work and rest schedules, adequate sleep, and more. Preventive measures include annual medical examinations, even if there is no concern, it is necessary to undergo general tests and be sure to undergo a fluorographic examination every year. If symptoms appear, you should consult a doctor and not self-medicate!

For existing chronic diseases (chronic bronchitis, bronchial asthma) - try to eliminate allergens from the air, thoroughly sanitize foci of chronic infection and follow doctor's prescriptions.

Compliance with these measures will help to avoid or promptly identify and promptly begin treatment of diseases or achieve stable remission of chronic pathology.

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