



**BRONCHITIS - CAUSES, SYMPTOMS, COMPLICATIONS AND
TREATMENT METHODS.**

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Abstract: This article provides detailed information about bronchitis, including causes, types, symptoms of bronchitis in children, and information on diagnosis.

Key words: bronchitis, immunity, avitaminosis, obstructive bronchitis and bronchiolitis.

Bronchitis is the most common acute disease among respiratory tract pathologies. Bronchitis occurs at any age. However, it is more common in children, especially young children, and is more severe than in adults. Therefore, it is important for parents to know more about bronchitis, its symptoms and treatment methods. Bronchitis in children is often caused by an infection, but there are also non-infectious causes of bronchitis.

Bronchi are one of the most important parts of the human respiratory system. When a person breathes, air passes through the larynx and trachea (larynx), then enters the bronchial system, and oxygen reaches the lungs. When a person exhales, the gases exchanged in the lungs (carbon dioxide gas) are released into the external environment through the bronchi and then through the trachea. The surface of the bronchi is covered with mucus and sensitive cilia. These structures are involved in the removal of any substances that enter the bronchi. Thus, if the permeability of the bronchi is disturbed as a result of some negative factor, it has a negative effect on the breathing process, as a result, the supply of oxygen to the body decreases.





Bronchitis is an inflammation of the mucous membrane of the bronchi. The reason why this disease occurs more often in children is that children's immune system is weak and their respiratory organs are not fully developed. According to statistics, 200 out of 1000 children get bronchitis every year. Children under the age of 5 are most affected. Bronchitis increases in winter.

Types of bronchitis

Bronchitis has several forms - simple obstructive bronchitis.

According to the course - acute and chronic. Chronic bronchitis refers to the duration of this disease in children for 3-4 months. In addition, inflammation of the bronchioles - bronchiolitis - also occurs in children.

Obstructive bronchitis is a narrowing (closing) of the organ due to accumulation of mucus or spasm in the bronchi in children.

Bronchitis in children can be unilateral or bilateral, and inflammation of one bronchial tree or several bronchial trees is also distinguished. If the inflammation is not only in the bronchi, but in the trachea, it is called tracheobronchitis, and if it is in the lungs and bronchi, it is called bronchopneumonia.

Causes of bronchitis

Respiratory organs in children are not as well formed as in adults. It is this feature that causes bronchitis in children. Respiratory defects in children include:

- Shortness of airways - facilitates the entry of infection;
- Small size of lungs;
- Weakness of respiratory muscles - slowness of coughing when moving sputum;
- Insufficient immunoglobulins in mucous membranes;
- High tendency to tonsillitis and adenoids.

Bronchitis is often manifested as a secondary disease. This pathology is a complication of diseases of the upper respiratory tract - pharyngitis, laryngitis, tonsillitis. The disease occurs as a result of the transfer of bacteria or viruses from the upper part of the respiratory tract to the lower part. Medical specialists say that primary bronchitis, that is, the direct effect of the infection on the bronchi, is rare. In the origin of bronchitis - influenza, parainfluenza, rhinovirus, adenovirus play a big role. Children are often infected with bacterial bronchitis. Bronchitis caused by chlamydia is also found in school-aged children.

Primary bronchitis is also rare. Usually, this can be caused by small objects falling into the bronchial tubes or aspiration of food products in babies. After the child coughs, the foreign body leaves the environment, but the bacteria that fell





with them multiply in the mucous membrane of the bronchi and begin to become pathogenic.

In rare cases, bronchitis is also caused by fungi. Another form of bronchitis is allergic bronchitis. Its manifestation is explained by the influence of external stimuli, such as drugs, chemicals, dust, animal fur, plant dust, etc.

Factors that increase the risk of bronchitis in children are:

- Weakness of immunity;
- Cold hardening;
- Sudden temperature change;
- Breathing very dry air, especially room air where heaters are working;
- Dryness of respiratory tract mucosa;
- Avitaminosis;
- Passive "smoking of tobacco products" (being near a person who smokes);
- Concomitant diseases, such as cystic fibrosis.

Bronchitis rarely occurs in children under the age of one year, because at this age babies are not in contact with relatives and strangers. Factors leading to the development of bronchitis at this age can be premature birth of the child, congenital pathologies of the respiratory tract.

Symptoms of acute bronchitis in children

Symptoms of bronchitis in children are different from symptoms of other respiratory diseases. Cough is the first sign of bronchitis in children. However, cough is also observed in other diseases of the respiratory tract. So, what are the characteristics of coughing in bronchitis?

The first symptoms of bronchitis in children begin with a dry cough, that is, a cough that does not produce sputum. The beginning of sputum transfer and wet cough indicate that the disease is recovering. Sputum can be colorless, yellow, or green.

Another symptom of bronchitis is the symptoms of general intoxication - headache, weakness, nausea, sleep disorders and refusal to eat in nursing children.

In children with bronchitis, during auscultation of the respiratory tract (listening), dry wheezes are heard in the chest area.

- In bronchitis caused by mycoplasmas, the body temperature is high, but there are no signs of general intoxication.

As mentioned above, bronchitis often develops as a complication of diseases of the upper respiratory tract. So, along with symptoms of bronchitis, symptoms of





pharyngitis, laryngitis, rhinitis also appear, for example, stuffy nose, sore throat, runny nose, hyperemia of mucous membranes.

- In bronchitis accompanied by tracheitis, a feeling of pain and heaviness in the chest area is also observed.

Symptoms of bronchiolitis and obstructive bronchitis in children

Symptoms of bronchiolitis and obstructive bronchitis in children differ from symptoms of simple (catarrhal) bronchitis. However, most specialists do not distinguish between bronchiolitis and obstructive bronchiolitis. Cough and body temperature increase are also observed in this disease. However, in bronchiolitis and obstructive bronchitis, symptoms of respiratory failure are added to the symptoms - the number of breaths increases, blueness appears in the mouth-lip triangle, breathing becomes noisy, and additional abdominal muscles are also involved.

Wheezing in the chest area is heard in children with obstructive bronchitis. Usually there is a moist and soft wheeze. Sometimes such sounds can be heard from a distance even without a stethoscope. Exhalation is prolonged.

As a sign of wheezing in obstructive bronchitis in nursing children, we can cite the number of breaths up to 60 times per minute, in children under 2 years - up to 50 times, in children older than 2 years - up to 40 breaths is a sign of wheezing.

In case of bronchiolitis, panting is manifested by breathing up to 80-90 times in 1 minute, in which cases of tachycardia can also be caused by the heart, and muffled heart tones are observed.

Diagnosis of bronchitis

When diagnosing the disease, the doctor must first determine the type of bronchitis (obstructive or catarrhal) and its etiology (viral, bacterial, allergic). It is also important to distinguish bronchiolitis from simple bronchitis. Obstructive bronchitis should be distinguished from bronchial asthma.

In diagnostics, general examination of the patient and auscultatory examinations of the chest are carried out. For admission to the hospital, the child needs a chest x-ray, the general condition of the bronchi and lungs is clearly visible on the x-ray. In addition, in order to identify the causative agent of the disease, bacteriological inoculation of sputum samples and detection of viruses using PCR is also performed.

In the general blood analysis, attention is paid to ECHT, leukocyte formula. An increase in the number of leukocytes (leukocytosis) indicates a bacterial infection. A decrease in the number of leukocytes (leukopenia) and a





simultaneous increase in the number of lymphocytes (lymphocytosis) are signs of a viral infection. However, changes in general blood analysis may not be observed during an attack of chronic bronchitis. In addition, bronchogram, bronchoscopy and computed tomography examinations are prescribed.

Consequences and complications

The outcome of timely and correct treatment of bronchitis in children is positive. However, bronchitis is a long-term disease, it may take several weeks for a child to completely recover from the disease. The main thing is to prevent simple bronchitis from turning into severe manifestations (obstructive bronchitis and bronchiolitis) and inflammation of the lungs.

It is important to remember that obstructive bronchitis in children can be life-threatening. Young children are especially at risk. The fact is that the spasm of the bronchi or the accumulation of mucus in their cavity can cause shortness of breath.

As complications of bronchitis, bronchial asthma, recurrent bronchitis, chronic bronchitis may develop. It should not be forgotten that as a result of the spread of the infection in the body, serious complications - endocarditis, inflammation of the kidneys - occur.

Symptomatic treatment of bronchitis

In the treatment of acute bronchitis in children, inflammation of mucous membranes and cough should be eliminated first. It is also important not to forget that cough is a defense mechanism of the body, through coughing the body tries to get rid of foreign bodies (regardless of whether it is a virus, bacteria, allergen or toxic substance). Because of this, a lot of mucus is produced in the mucous membranes and it is expelled from the body in the form of sputum. The only problem is that this sputum is very sticky and difficult to move, especially in young children, because their lungs and bronchi are weak, they cannot separate the sputum by coughing.

Mucolytics and expectorants are used to facilitate sputum passage. Mucolytic agents (ASS, Ambrohexal, Bromhexine) soften sputum and make it easier to move. Expectorants (Ascoril, Gerbion, Gedelix, Prospan, Dr. Mom) facilitate the passage of sputum from the respiratory tract during coughing. Most of these preparations are prepared on the basis of medicinal plants.

In addition, some antitussive drugs have the ability to block the cough center in the brain. Such drugs are prescribed when a long-lasting dry cough is observed. A dry cough is an early sign of the disease. However, it is not possible to take





antitussive drugs during a wet cough when expectoration is observed. Because such tools block the cough center and prevent the release of sputum.

Drugs that expand the bronchial space (berodual, eufillin) are used for spasm of bronchial branches. They can be in the form of an aerosol for inhalation or in the form of tablets.

Baking soda and saline inhalations can be used as anti-inflammatory agents.

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