

## Rational Use of Drugs in the Complex Treatment of Bronchobstructive Syndrome in Children

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**Abstract:** Treatment of biofeedback in children and the complex use of drugs, that is, each drug must be pathogenetically justified, taking into account the individual characteristics of the child, and also based on knowledge of the mechanism of their action and pharmacokinetics. It is necessary to have a complex effect on individual links in the pathogenesis of broncho-obstructive syndrome in many cases, which justifies the use of complex drugs with a combined mechanism of action. Thus, the treatment of biofeedback in children is a responsible task for the pediatrician, which consists in the rational selection of drugs.

**Keywords:** treatment, children, inhalation, antioxidants, broncho-obstructive syndrome, antihistamines, hyperreactivity.



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**Introduction:** Acute respiratory infections in children are a significant problem in modern pediatrics. The treatment of patients with severe forms of acute respiratory infections, which are often complicated by broncho-obstructive syndrome in children, presents great difficulties: in addition to antiviral drugs (rimantadine, arbidol, etc.), specific immunoglobulins, interferon preparations, antibiotics, hormones, it includes a number of other pathogenetic agents whose action is directed for the correction of impaired body functions. Of particular importance is the use of drugs with antiprotease and antioxidant activity in the complex therapy of severe forms of broncho-obstructive syndrome in children, as well as drugs that increase the immunobiological resistance of the body. At the same time, the domestic antioxidant drug polyoxidonium, the antiviral drug Arbidol, the antiallergic drug Lordes, as well as inhalation of the upper respiratory tract with nebutamol are used, which helps to reduce the frequency of severe and complicated forms, adverse outcomes of infection, and reduce the duration of hospitalization.

**Materials and methods:** The therapeutic efficacy of a combination of drugs and the antioxidant polyoxidonium, as well as inhalation of the upper respiratory tract with nebutamol, was studied in the treatment of children with acute respiratory infections complicated by broncho-obstructive syndrome.

We know that the causative agents of ARI are various viruses and bacteria that are tropic to the epithelium of the respiratory tract and contribute to the development of inflammation of the mucous membrane and the launch of a whole range of pathophysiological reactions aimed at eliminating the pathogen. In some cases, the course of ARI is accompanied by the development of broncho-obstructive syndrome (BOS). In the pathogenesis of biofeedback in ARI in children, mucosal edema, inflammatory infiltration, and impaired mucus properties are of primary importance. In children, true bronchospasm is less pronounced, which is due to an increase in the sensitivity of interoreceptors of the cholinergic link of the autonomic nervous system or blockade of beta-2-adrenergic receptors. These factors are associated with the ineffectiveness of short-acting beta-2 agonists.

The inflammatory reaction in BOS in children with ARI is initiated by pro-inflammatory cytokines, in particular interleukin-1, which promotes the release of type 1 mediators into the peripheral circulation: histamine, serotonin, which are constantly present in mast cell granules and basophils.

Under the influence of inflammatory mediators, that is, histamine, serotonin, prostaglandins, leukotrienes, a symptom complex is formed with swelling of the bronchial mucosa, hypersecretion and bronchospasm, and further damage to the epithelium and the formation of hyperreactivity, this process leads to a protracted course of the inflammatory process.

The development of BOS in ARI in children is also facilitated by the anatomical and physiological features of the respiratory tract, diaphragm, and premorbid background conditions such as a burdened allergic history, bronchial hyperreactivity, hereditary predisposition to atopy, prematurity, malnutrition, diathesis, thymus hyperplasia, early artificial feeding, early debut respiratory diseases, etc.

To provoke an increase in the frequency of bronchial obstruction in ARI can contribute to adverse environmental factors, as well as passive smoking in the family (exposure to tobacco smoke violates the properties of bronchial secretions and mucociliary clearance, contributes to the destruction of the bronchial epithelium).

Obstructive syndrome often occurs in ARI caused by respiratory syncytial virus (about 50%), parainfluenza virus, influenza viruses, adenovirus, and BOS is a characteristic feature of typical and atypical pneumonia.

In the treatment of a respiratory infection, the key link is a properly selected etiotropic treatment. To normalize the drainage function of the bronchi, expectorant and mucolytic drugs are prescribed on the dynamics, in case of hypersecretion they are canceled and replaced with drugs based on carbocysteine (ACC, etc.).

The object of the study were sick children aged 1 to 5 years, hospitalized with BOS in the children's department of the clinic of the Urgench branch of the TMA. A total of 72 patients were examined who were treated with polyoxidonium, inhalation of the upper respiratory tract with nebutamol, as well as with antiviral drugs in the initial days after antihistamines (Lordes, etc.), as well as 42 patients were treated according to the standard with only basic drugs.

At the same time, 80% of patients suffered a moderate form of the disease and only 20% - in a severe form (against the background of polyoxidonium, as well as inhalation of the upper respiratory tract with nebutamol), the patients received, in addition to basic therapy (BT). In the control group on BT there were 20 children with a similar pathology.

**Results:** In patients with respiratory diseases, when using polyoxidonium, as well as inhalation of the upper respiratory tract with nebutamol, in contrast to patients who received only basic therapy, there was a more rapid improvement in general condition, a decrease in signs of intoxication and brain hypoxia.

The positive effect of polyoxidonium, as well as inhalation of the upper respiratory tract with nebutamol, on functional changes in the myocardium and lungs. It was proved that it contributed to a significantly more frequent and positive dynamics, and a negative trend was less often noted in the analysis of the studied indicators. It should be noted the positive effect of polyoxidonium, as well as inhalation of the upper respiratory tract with nebutamol, on the restoration of external respiration compared with the clinical control group.

**Conclusions:** Polyoxidonium, as well as inhalation of the upper respiratory tract with nebutamol, the complex use of antihistamines, antiviral drugs is a modern and highly effective tool for combating intoxication and tissue hypoxia, and is also a pathogenetic therapy. Polyoxidonium, as well as inhalation of the upper respiratory tract with nebutamol, can be recommended for widespread implementation in the practice of treating patients with acute respiratory infections in children with bronchial obstruction.

Thus, the treatment of biofeedback in children and the complex use of drugs, that is, each drug should be pathogenetically justified, taking into account the individual characteristics of the child, and also based on knowledge of the mechanism of their action and pharmacokinetics.

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