



CLINICAL PHARMACOLOGICAL APPROACH TO THE RATIONAL USE OF DRUGS USED IN THE TREATMENT OF BRONCHOOBSTRUCTIVE SYNDROME

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Article history:	Abstract:
Received: June 20 th 2024 Accepted: July 14 th 2024	Broncho-obstructive syndrome (BOS) or bronchial obstruction syndrome is a symptom complex of impaired bronchial patency due to their functional or structural changes, manifested by paroxysmal cough, expiratory dyspnea and attacks of suffocation. The incidence of influenza and other acute respiratory infections is recorded throughout the year, but in cold weather it increases sharply. This is due to seasonal vitamin deficiency, cold factors, and overcrowding. Diseases occur both as isolated cases and epidemic outbreaks.

Keywords: Bronchoobstructive syndrome, influenza, infection, method.

INTRODUCTION

Acute respiratory diseases (acute catarrh of the upper respiratory tract, colds) are a group of diseases characterized by short-term fever, moderate intoxication, and predominant damage to various parts of the upper respiratory tract. ICD-10 codes: J10.0, J10.1, J10.8, J11.1, J06.8. The causative agents of acute respiratory infections affect the mucous membrane of the respiratory tract. An inflammatory process develops in the underlying tissue. Toxic products of viruses affect various parts of the nervous system. The severity of the disease is associated with the virulence of the virus and the state of the patient's immune system. Viral infection causes a decrease in immunity, which contributes to the addition of a secondary bacterial infection and the appearance of complications [4]. Recently, diseases with predominant damage to the lower respiratory tract - bronchi, bronchioles - have predominated among the child population.

MATERIALS AND METHODS

BOS is not an independent diagnosis, but is considered as a clinical manifestation of pathological conditions of the respiratory system and / or other systems [1]. The most common cause of obstructive bronchitis is respiratory syncytial infection (RS infection). RS infection is an acute viral disease characterized by moderate intoxication and damage mainly to the lower respiratory tract with frequent development of bronchitis, bronchiolitis, pneumonia. RS virus belongs to paramyxoviruses, the diameter of the virion is 90-120 nm, it contains ribonucleic acid with a characteristic helical structure and complement-binding antigen. A characteristic property of this virus

is the ability to cause the formation of syncytium or pseudogiant cells in tissue culture. It reproduces in HeLa, HEp-2 and human embryonic kidney tissue cultures. It is unstable in the external environment and is inactivated within 5 minutes at a temperature of 55 °C.

RESULTS AND DISCUSSION

RS infection is widespread, is registered all year round, the highest increase in incidence is observed in winter and spring. The source of infection is a sick person in the acute period of the disease. It is transmitted by airborne droplets. Most often observed in young children, but high susceptibility is also noted in adults. When this infection is brought to children's institutions, almost all children under the age of one year fall ill. Studying the pathogenesis of this disease is difficult. The clinical course of the disease, both natural and with experimental infection in adults, does not reflect the essence of the process developing in children, since in adults the disease often occurs as an acute respiratory disease. It is believed that with RS infection, the leading pathology is the lower respiratory tract, and the most characteristic is severe damage to the bronchioles.

Supporting diagnostic signs of RS infection:

- the disease is most often found in children in the first year of life;
- gradual onset of the disease;
- mild intoxication syndrome;
- body temperature is usually subfebrile;
- minor catarrhal syndrome;
- typical damage to the lower respiratory tract (bronchiolitis, obstructive bronchitis);



- severe respiratory failure with rapid reverse dynamics;

- discrepancy between the severity of damage to the lower respiratory tract and the degree of fever: severe respiratory failure with subfebrile body temperature.

The second most common cause of acute obstructive conditions of the respiratory tract is the parainfluenza virus. In young children, parainfluenza can affect not only the upper but also the lower respiratory tract. In this case, a picture of obstructive bronchitis develops [5].

Establishing the etiology of the underlying disease is not mandatory for starting treatment according to the protocol. Patients must be treated in a specialized department with trained personnel.

All patients with obstructive syndrome, regardless of the pathogenetic variant and the degree of respiratory failure, receive:

- 1) recombinant interferon preparations;
- 2) mucolytics (ambroxol, bromhexine, acetylcysteine);
- 3) ultrasonic inhalations.

Depending on the age, clinical course and degree of respiratory failure, a drug for inhalation therapy (budesonide, berodual, ipratropium bromide), hormonal therapy (prednisolone, dexamethasone), detoxification therapy (glucose-salt solutions) is determined.

Antibacterial drugs should be prescribed only in the presence of complications (croup, pneumonia, otitis, sinusitis, urinary tract infection, etc.) or when it is difficult to exclude the occurrence of bacterial complications, especially in young children, as well as in the presence of chronic foci of infection (chronic pyelonephritis, chronic sinusitis, etc.). Antibiotics from the cephalosporin group are prescribed, the route of administration is intramuscular [2].

The standard of examination and treatment of patients with broncho-obstructive syndrome is given below.

1. Scope of examination:

- 1) general blood and urine analysis;
- 2) virological examination: isolation of culture by PCR method according to indications and for monitoring;
- 3) study of blood acid-base balance indicators – according to indications;
- 4) blood oxygen saturation – according to indications.

2. Algorithm of action in case of BOS Therapy of obstructive bronchitis

includes:

1. Bronchodilator therapy.
2. Improving bronchial drainage function.
3. Desensitizing therapy.
4. Anti-inflammatory therapy.

Bronchodilator therapy in case of BOS of the 1st degree:

- inhalations with short-acting β -2-agonists – berotek or berodual through a nebulizer every 6–8 hours;
- inhalation of M-anticholinergic – Atrovent;
- inhalation of Pulmicort via a nebulizer 1–2 times a day;
- copious warm alkaline drinks.

Broncholytic therapy for stage 2 BOS:

- inhalation of Berodual via a nebulizer or in children over 1.5 years old – Ventolin (salbutamol);
- if there is no effect after 20 minutes, inhalation of Pulmicort (budesonide) via a nebulizer;
- inhalation of oxygen until oxygen saturation reaches 95%;
- inhalation of mucolytics is contraindicated;
- copious warm alkaline drinks.

CONCLUSION

Thus, in recent years, new schemes of BOS therapy in children have been applied, which made it possible to abandon ineffective and unjustified methods of therapy, reduce the volume and frequency of infusions. Active inhalation nebulizer therapy in a specialized hospital allows for rapid relief of respiratory failure at an early stage and ensures its favorable course. This approach to treatment allows for the most optimal organization of the treatment process in a hospital setting, avoiding polypharmacy, reducing the possible risk of developing side effects, which is an important condition for the quality of medical care.

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