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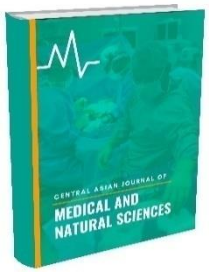

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Acute Bronchitis in Pediatric Practice

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Abstract: In the article Modern ideas about the etiology and pathogenesis of acute bronchitis (AB) in children are presented. The issues of classification and clinical diagnostics of various forms of OB are discussed.

Key words: children, acute obstructive bronchitis, acute bronchitis, bronchial obstruction, bronchodilators.

INTRODUCTION

Acute bronchitis (AB) is an acute infectious inflammation of the bronchial mucosa of various etiologies [1–6]. AB in children is the most common infectious lesion of the lower respiratory tract. Thus, the frequency of AB in the pediatric population is 72–250 per 1000 children per year, which is significantly higher than the incidence of pneumonia [2].

MATERIALS AND METHODS

In accordance with ICD 10, OB belongs to the group of acute respiratory infections of the lower respiratory tract and is classified under codes J20.0–J20.9 [6]. This block includes various variants of AB (with bronchospasm, fibrinous, membranous, purulent, septic), as well as acute tracheitis and tracheobronchitis. In accordance with the recommendations of ICD 10, the final diagnosis of "acute bronchitis" should take into account the etiology of the disease (Table 1) [6]. It has been established that in the vast majority of cases, AB in children has a viral etiology and is caused by rhinosyncytal, corona and adenoviruses, as well as parainfluenza, influenza A and B viruses, etc. [1, 2]. At the same time, it was noted that in 17–33% there is a mixed virus-viral etiology of the disease. Due to the fact that in the vast majority of cases the etiology of AB remains unverified, the disease is usually classified as “acute bronchitis, unspecified” with code J20.9 (see table).

Table 1. Classification of acute bronchitis (ICD 10)

J20. Acute bronchitis
J20.0 Acute bronchitis due to
Mycoplasma pneumoniae
J20.1 Acute bronchitis due to
haemophilus influenzae
J20.2 Acute bronchitis due to streptococcus
J20.3 Acute bronchitis due to Coxsackievirus

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J20.4 Acute bronchitis due to parainfluenza virus
J20.5 Acute bronchitis due to RS virus
J20.6 Acute bronchitis due to rhinovirus
J20.7 Acute bronchitis due to echovirus

RESULTS AND DISCUSSION

The main clinical manifestation of OPB is cough. Symptoms of intoxication are not expressed. The body temperature is subfebrile and in most cases lasts no more than 2-3 days. There are no percussion changes. Auscultatory in the lungs on both sides heard a variety of rales (dry and various wet). The course of APB is favorable and, as a rule, does not require special treatment [1-4]

OOB is characterized by the presence of diffuse bronchial obstruction syndrome, which develops as a result of infectious inflammation of the mucous membrane. The basis of bronchial obstruction in AOB is mucosal edema, hyperproduction of bronchial secretions with pathologically altered properties, and, to a much lesser extent, bronchospasm [2]. At the same time, it should be noted that in the vast majority of cases AOB has a viral etiology. The predominance in the age structure of children with AOB in the first years of life is due to both the anatomical and physiological features of the respiratory organs and the absence of previous immunological experience in children of this age.

In an open clinical study in children aged 1 to 5 years with AOB, the therapeutic efficacy and tolerability of the combination drug Joset was studied.

Inclusion criteria were: nosological unit - OOB; the form of the disease is mild and moderate, not requiring intensive therapy; contingent - children of both sexes aged from 1 to 5 years; in the treatment of this disease at the time of inclusion, anti-inflammatory, bronchodilator, mucolytic, expectorant drugs are not used; there are no data on the recurrent nature of bronchial obstruction; there is no evidence of intolerance to any of the components of the study drug; the patient has no diseases of the heart, thyroid gland, liver, kidneys, stomach and duodenum, as well as hemorrhagic syndrome and diabetes mellitus; availability of voluntary informed consent of parents.

Patients included in the study were prescribed the combined drug Joset (Unique Pharmaceutical Laboratories, India, registration number LSR-001953/07), the active components of which are the selective agonist of 2-adrenergic receptors salbutamol, the mucolytic bromhexine, and the expectorant guaifenesin. At the same time, 5 ml of Joset contains 1 mg of salbutamol, 2 mg of bromhexine, and 50 mg of guaifenesin [2]. The dosing regimen strictly complied with the official recommendations for this age group - the drug Joset was prescribed 5 ml per 1 dose - 3 times a day [3].

Clinical monitoring was carried out throughout the entire period of the disease, with regular (1 time in 3 days) observation. Therapeutic efficacy was studied by the dynamics of changes in the nature and intensity of cough (the rate of regression of the frequency of cough and its severity), the rate of transformation of unproductive cough into a productive one, as well as the rate of relief of bronchial obstruction based on clinical data. The analyzed parameters were assessed on a 4-point system, where a higher score meant a greater severity of the trait. So, "maximum severity" corresponded to 3, "moderate severity" - 2, "minimum severity" - 1 point, absence of a sign - "0". The analyzed parameters were recorded in the "Individual observation chart" throughout the entire observation period: at inclusion in the study (0 visit), on the 3rd day of therapy (1st visit), on the 5th day of therapy (2nd visit), on the 7th day of therapy (3rd visit), and, if necessary, upon recovery (4th visit). Particular attention was paid to the tolerability of the drug, fixing all cases of side and undesirable effects.

Subsequently, by the 5th day of treatment, bronchial obstruction was stopped in 96.3% of children. The intensity of cough during this period did not exceed 1.2 points, which corresponded to a decrease in its severity by 45.4% compared with the initial data and was characterized by minimal

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manifestations (see figure). By the 7th day of therapy, cough in 87.2% of children was stopped, and in other cases it became very rare.

It was especially noted that there were no side effects and undesirable effects when using Joset in children. It should be emphasized that increased attention was paid to the control of drug tolerance, since the drug contains an adrenomimetic agent (salbutamol). When prescribing Joset, it is necessary to make sure that the child does not belong to the group of patients for whom the use of adrenomimetics may be contraindicated or significantly limited (the presence of a pathology of the heart, thyroid gland, liver, kidneys, stomach and duodenum, hemorrhagic disorders and diabetes mellitus).

In addition, it is advisable to focus the attention of parents on strict adherence to the dosing regimen, especially when using the drug in children of the first year of life. At the same time, in children with a body weight (BW) of less than 10 kg, the following calculation of a single dose of the drug (according to salbutamol) should be adhered to - no more than 0.1 mg/kg of salbutamol per dose [3]. Since 5 ml of Joset contains 1 mg of salbutamol, for children with BW below 10 kg, it can be recommended that a single dose not exceed 0.5 ml of the drug per 1 kg of BW.

CONCLUSION

Thus, the conducted study led to the conclusion that the combined drug Joset has high clinical efficacy and good tolerability in AOB in preschool children.

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