

## FEATURES OF THE COURSE OF OBSTRUCTIVE BRONCHITIS IN CHILDREN CAUSED BY ATYPICAL MICROFLORA

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### ABSTRACT

The article presents an analysis of the features of the course of obstructive bronchitis caused by atypical microflora. Broncho-obstructive syndrome is quite common in the pathology of young children (30-35%), however, until now, there are no common approaches to the differential diagnosis of broncho-obstructive syndrome, interpretation of its pathogenesis, assessment of prognosis and treatment. Relevance of the problem of obstructive bronchitis with the frequency of bacterial complications, the development of life-threatening conditions due to its prevalence in viral infections in children, as well as the presence of atypical bacterial pathogens. Modern ideas about the etiopathogenesis of obstructive bronchitis provide for the development of a pathological process as a result of the complex effects of various infectious and allergic factors [1,4].

**Key words:** *obstructive bronchitis, mycoplasma infection, chlamydial infection, resistance, children.*

### RELEVANCE

Respiratory diseases are characterized by a variety of clinical and morphological manifestations, which is associated with the peculiarity of the structure of the lungs, age characteristics and a large number of etiological factors. Etiological factors, as is known, can be: - biological pathogens (viruses, bacteria, fungi, parasites); — chemical and physical agents. Obstructive bronchitis (OB) is one of the most common pathologies in childhood [8, 9].

Obstructive syndrome in young children is a multifactorial disease [2]. Currently, one of the most important values in the formation of recurrent bronchitis in children is assigned to an unfavorable environmental situation. Organic and inorganic substances of the environment have a toxic, sensitizing and irritant effect on the mucous membrane of the respiratory tract and thus contribute to frequent respiratory diseases [3,5].

The term "atypical" respiratory tract infections was first introduced in 1940 to refer to a group of diseases of unidentified etiology [4,5]. The modern medical nomenclature refers primarily to microorganisms of the genus *Chlamydia pneumoniae* and *Mycoplasma pneumoniae* as "atypical" [4]. The above intracellular pathogens can cause both the occurrence of a chronic or often recurrent infectious disease of the respiratory tract, and be the cause of its exacerbation, the development of severe variants of the course. [3,4,5]. *Mycoplasma pneumoniae* infection of the respiratory tract occurs in 22% of cases, while chlamydial infection is diagnosed much less frequently - in 4% of cases. [6]. *Chlamydia pneumoniae* and *Mycoplasma pneumoniae* are common pathogens that cause acute illness in both the upper and lower respiratory tract. Several observations support the possible causal role of these pathogens in broncho-obstructive syndrome and in the development of laryngotracheitis, but more evidence is needed before this becomes significant in clinical practice [1,7].

Atypical bacteria can increase airway hyperreactivity and local inflammation. It is less clear whether the above mechanisms may also be responsible for the development of the obstruction. Difficulties in accurately diagnosing these infections contribute to such uncertainty [2]. Modern laboratory diagnostics of chlamydial and mycoplasmal respiratory tract infections in children is quite complicated, it requires simultaneous detection of both antigen and antibodies, monitoring of serological parameters in dynamics [3].

## PURPOSE OF THE STUDY

To analyze the age structure, the severity of the main clinical syndromes of obstructive bronchitis in children caused by atypical microflora.

**Material and methods.** A retrospective analysis of the medical records of an inpatient patient of 82 children aged 3 to 12 years with respiratory chlamydia and mycoplasmosis, who were hospitalized, was carried out. All children underwent general clinical examinations, radiography of the chest organs. Verification of chlamydial and mycoplasmal infections was carried out using the enzyme immunoassay method with the detection of species-specific immunoglobulins (Ig) M and G in the blood serum.

## RESULTS OF THE STUDY AND THEIR DISCUSSION

In the development of obstructive bronchitis, the role is played by the imperfection of immunological mechanisms in young children, as well as the anatomical and physiological features of the respiratory organs in children (immaturity of mucociliary clearance, friability of the mucous membrane, narrowness and compliance of the cartilage of the bronchopulmonary tract). There were no significant gender differences in the study group of patients: girls accounted for 53.6% of children (44 patients), boys — 46.3% (38 children). An unfavorable premorbid background and aggravated allergic anamnesis are of particular importance in the occurrence of any infectious pathology of the respiratory tract. In our study, a aggravated allergic anamnesis was detected in 56.0% of cases, of which food allergy was most often noted. In 26.8% of children, from 1 to 3 episodes of bronchial obstruction were previously noted. 39% of patients had a history of frequent respiratory diseases (from 5 to 8 episodes per year), and EBV infection was previously diagnosed in 7 children. In the study group of patients, chlamydial infection was detected in 28 children (34.1%), mycoplasma infection - in 31 patients (37.8%), mixed etiology (chlamydia + mycoplasma - in 19, mainly in the older age group (23.1%) Moreover, chlamydial infection was most often observed in the age range from 3 to 5 years, mycoplasma - from 4 to 9 years, mixed infection - from 7 to 12 years. The localization of the inflammatory process in the respiratory tract largely depends on the individual characteristics of the organism, the nature of the immunological resistance of the child, and also on the characteristics of the pathogen. Symptoms of bronchial obstruction were most often observed in respiratory chlamydia. Pharyngotracheitis was diagnosed in 7 patients (8.5%). Symptoms of chlamydial and mycoplasmal infection in children depend on the form of infection and the process of its progression. Initially, the symptoms may be subtle and resemble the ARI clinic, later other pathological symptoms may appear. Leading in the clinical picture of chlamydial and mycoplasmal infections was catarrhal syndrome in the form of painful obsessive paroxysmal cough, which was observed in 52 patients (63.4%). It was his progression that led to hospitalization. The bronchial obstruction syndrome was detected in 27 children (32.9%), mainly against the background of an unfavorable allergic anamnesis. High febrile fever is not characteristic of atypical infections. However, in 16 patients (22.2%), there was an increase in body temperature in the range of 38.0–38.6° for several days, mainly with mycoplasma infection.

The vast majority of patients had subfebrile condition lasting up to 7 days (37 children, 54.1%). Prolonged subfebrile condition was most often observed with chlamydial infection of the respiratory tract. In patients with chlamydial infection, there was a pronounced leukocytosis up to  $20 \times 10^9/l$ , an increase in ESR up to 25–45 mm/hour. In the vast majority of cases with chlamydial infection, moderate leukocytosis persisted, with a tendency to eosinophilia. Peripheral blood studies in patients with mycoplasma infection in the acute period of

the disease revealed moderate leukocytosis, neutrophilia with a shift to the left, ESR acceleration up to 20–30 mm/hour.

## CONCLUSION

Features of the pathogen, late diagnosis, repeated irrational courses of antibiotic therapy, the state of the immune system largely determine the course of chlamydial and mycoplasmal infections in children of different ages. Chlamydial and mycoplasmal infections are quite widespread, and the consequences for the future health of children are not always adequately assessed. In this regard, it seems relevant to further study the features of this pathology. Knowledge of the clinic of chlamydial-mycoplasma infection will allow timely conduct of a set of laboratory tests to verify the diagnosis, prescribe specific etiotropic treatment to prevent the formation of chronic bronchopulmonary pathology.

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