CHARACTERISTICS OF THE CLINICAL COURSE OF ACUTE OBSTRUCTIVE BRONCHITIS IN YOUNG CHILDREN

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Abstract: *This article presents information regarding the clinical course of acute obstructive bronchitis in young children. It examines the etiopathogenesis and clinical manifestations of the disease. The article highlights that bronchitis may have a more severe course in young children due to the unique anatomical and physiological characteristics of their respiratory tracts. The primary symptoms of the disease are described as coughing, shortness of breath, wheezing, and general weakness. The necessity of diagnosing and effectively treating the disease as early as possible is emphasized. The principles of treatment are outlined, including improving bronchial patency, reducing inflammation, and administering symptomatic therapies.*

Keywords*: Obstructive bronchitis in early childhood: clinical presentation, diagnosis, and treatment criteria.*

Introduction.

Relevance. Acute obstructive bronchitis in young children is an inflammatory disease of the respiratory tract characterized by the narrowing of the bronchi and difficulty in airflow. This condition is particularly common in children in their first years of life, as their airways are anatomically narrower and their mucous membranes are highly sensitive. Consequently, even minor inflammation can lead to a disruption of bronchial patency.

The disease often develops as a result of viral infections. Infections such as influenza, parainfluenza, and respiratory syncytial virus damage the bronchial mucosa, causing swelling, excessive mucus secretion, and bronchial muscle spasms. As a result, the bronchi constrict, and the child experiences difficulty breathing. [1, 2, 3, 4].

According to researchers, the global prevalence of obstructive bronchitis in children ranges from 15.8% to 51.3%, while in infants, acute obstructive bronchitis constitutes 88.1% to 89.3% of cases [1, 4, 7, 8].

Research Objective.

To analyze the clinical features of acute obstructive bronchitis in young children and to evaluate the effectiveness of treatment.

Materials and methods of rescarch.

The case histories of 122 patients under the age of four, hospitalized with a diagnosis of "Acute Obstructive Bronchitis" in the resuscitation and intensive care unit of the Samarkand Regional Multidisciplinary Children's Medical Center (SRMCMC), were studied in 2024. The patients were divided into three age groups for the study: 72 infants under one year old, 32 children aged 1-2, and 18 children aged 2-3. According to the mothers, the main symptoms of acute obstructive bronchitis in young children included frequent and dry coughing, rapid breathing, whistling breath sounds, difficulty exhaling, fever, irritability, insomnia, and loss of appetite. All patients underwent clinical examinations, taking into account their reported complaints and medical history. These examinations included: general clinical blood tests; bacteriological and virological analysis of blood and sputum; a survey chest X-ray; ECG; EchoCG; and ultrasound methods to rule out congenital and acquired diseases of internal organs.

Results and discussion.

Obstructive bronchitis in children is an inflammatory process of the bronchial wall's mucous membrane, characterized by the obstruction of the bronchial tree's lumen with mucus (sputum). Inflammation and impaired permeability of the bronchial wall mucosa can develop under the influence of infectious or non-infectious factors. The viruses that cause the development of

obstructive bronchitis in children include: respiratory syncytial viruses (50.3%), parainfluenza viruses (30.2%), influenza (14.8%), rhinoviruses (19.8%), enteroviruses (6-10.3%), and TORCH viruses (2.3%). Among bacterial agents, the following infections also play a major role: Mycoplasma and Chlamydia (29.4-48.3%), Streptococcus pneumoniae (31%), and Staphylococcus aureus (2.3%) [4, 3, 5]. Viral causative agents of the disease were identified using the polymerase chain reaction (PCR), while bacteria were identified using bacteriological methods. Many authors have also reported in the literature that allergic factors play a significant role in the development of bronchial obstruction syndrome in children.

The frequent development and high incidence of acute obstructive bronchitis in young children are linked to the anatomical and functional characteristics of their respiratory system. Theories suggest this is due to factors such as narrow airways, insufficient elasticity of the bronchial walls, and the underdevelopment of bronchial smooth muscles, along with the immaturity of other organs and systems.

The examination revealed that among the patients, frequent cases of acute obstructive bronchitis were observed in 54.3% of 1-year-olds, 27.0% of 2-year-olds, and 18.7% of 3-year-olds ($p<0.05$). The incidence of obstructive bronchitis was found to be 64.5% in boys and 35.5% in girls ($p<0.05$).

The medical history of the children indicated that acute obstructive bronchitis often developed against an adverse premorbid background. Specifically, conditions such as allergies to certain foods, a history of being switched to artificial feeding, grade 3-4 anemia, and allergic dermatitis were identified. It was determined that the average birth weight for all affected children was within the normal range: 3,456 ± 335 g for boys and 3,210 ± 330 g for girls ($p>0.05$).

A study of the nutritional history of children with acute obstructive bronchitis revealed the following: the disease was observed in significantly more cases among children who were artificially fed up to 4 months of age (over 64.9%), compared to those who were on mixed feeding (18.9%) and those who were breastfed (15.9%).

According to the patients' medical histories, the clinical presentation of acute obstructive bronchitis in all children began with symptoms of a respiratory viral infection. It was found that while some patients visited a polyclinic physician, the majority of parents attempted to treat their children at home without a doctor's recommendation or supervision, using various syrups, tablets, and suppositories. They sought help from a medical center only after home treatments failed to provide positive results and complications of the illness had manifested.

The vast majority of the sick children were hospitalized due to complications of acute respiratory infections. These included respiratory obstructive syndrome (87.5%), hyperthermic syndrome as a complication of acute pharyngitis (91%), grade 2 laryngeal stenosis (9.8%), and febrile convulsive syndrome (15.2%). All patients sought medical attention 3-4 days after the onset of symptoms. The expiratory type of shortness of breath was observed in the majority of patients (75%).

Febrile syndrome was observed in 54.8% of children and lasted for 3.4±0.5 days, while a subfebrile temperature was noted in 25% of children. A frequent, productive cough (with phlegm) was observed in 36.4% of patients. A non-productive, dry, and short cough, which is less common in children, was observed in 63.6% of cases. Cough symptoms in the children were observed for an average of 8.9±5.0 days, after which they gradually subsided and disappeared. Clinically, signs of grade 1 respiratory failure were observed in 25.8% of patients, and signs of grade 2 acute respiratory failure were observed in 74.2% of patients ($p<0.001$). Such signs of acute respiratory failure were found to be more common among male infants under one year of age.

Upon percussion of the lungs, a boxy sound was detected in all children. Auscultation of the lungs revealed dry, whistling rales against a background of coarse breathing, along with moist, fine-bubbled rales on the posterior surface of the lungs. Chest X-rays performed on all children showed signs of acute bronchitis. In 66.9% of children under one year of age, acute obstructive bronchitis was accompanied by the development of bronchial obstruction symptoms with grade 2 respiratory failure on the first day of the illness.

The treatment process requires a comprehensive approach. The primary measures taken were aimed at restoring airway patency, reducing inflammation, and improving sputum expectoration. When necessary, bronchodilators, inhalation therapy, and symptomatic treatments were recommended.

Conclusion.

In conclusion, the progression of acute obstructive bronchitis in young children is linked to the anatomical and functional immaturity of their respiratory system. The disease is characterized by its rapid development and pronounced symptoms. Therefore, early diagnosis and timely, appropriate treatment are crucial for preserving children's health. Acute obstructive bronchitis is most prevalent in children under three years of age, occurring predominantly in those under one year old. Boys are more frequently affected by acute obstructive bronchitis than girls. The development of obstructive bronchitis in children is also associated with characteristics of the postnatal period, such as the early introduction of artificial feeding, excess weight, and the presence of food allergies. Among one-year-old children, acute obstructive bronchitis is distinguished by a distinct clinical presentation and a prolonged duration, with symptoms of first- to second-degree respiratory insufficiency being the predominant feature.

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