The Significance of Bronchial Obstruction Syndrome in Acute Respiratory Infections

Introduction. Respiratory diseases remain one of the most important topics of Pediatrics, which is due not only to its widespread among children of all ages, but also high death-rates at an early age, despite of using the latest diagnostic methods and the use of broad-spectrum antimicrobial agents. Obstructive syndrome is the one that mostly occurs among respiratory diseases. The swelling of the bronchial mucosa is the main predictor of the genesis of bronchial obstruction, inflammatory infiltration, hypersecretion of mucus viscous, thereby it faces the derangement of mucociliary clearance and obstruction of the bronchial tubes [1].

The most important are the age characteristics of the respiratory system of the child. Bronchus of children have a smaller diameter than an adults'. Tracheal mucosa and bronchial edema immediately reacts by hypersecretion of mucus as response to the progression of a viral infection. The narrowness of the bronchial tubes and the whole respiratory system significantly increases aerodynamic resistance. Thus, edema of the bronchial mucosa in 1 mm can cause in resistance more than 50% of air flow in the trachea [2].

Compromise cartilage of bronchial tract specific to early age children, when insufficient rigidity of the bone structure of the thorax, freely reacting indrawing of compliant places to increase airway resistance, as well as a number of features of the structure and position of the diaphragm can be observed. Definite influence on functional disorders of the respiratory system of a child affect by factors as prolonged sleep, frequent crying, continuous position lying on his back in the first months of life. [3]

Respiratory viral infection is the main cause of the occurrence of bronchial obstruction. To the viruses that most frequently causes a bronchial obstruction are included respiratory syncytial virus (about 50%), parainfluenza virus, mycoplasma pneumonia, at least - flu viruses and adenoviruses. [4].

Among the environmental factors that may lead the development of obstructive syndrome, particularly influenced by passive smoking at home. Tobacco smoke causes hypotrophy of bronchial mucous glands, impaired mucociliary clearance, slowing advancement of the mucus. Passive smoking triggers destruction of bronchial epithelium. Especially vulnerable in the first years of the child. [5].

Materials and Methods. Another important harmful factor is the pollution of the atmosphere by industrial gases, as well as organic and inorganic dust.

Most researchers recognize the influence of factors on the development of premonitory background of the bronchoobstructive syndrome. They are - pregnant tocosis, obstructed labor, hypoxia during labor, premature birth, assertive allergic history, bronchial hypertrophy, rickets, degeneration, hyperplasia of the thymus, perinatal encephalopathy, early feeding, transferred respiratory disease at the age of 6-12 months.

Results and Discussion. Numerous studies in our country and abroad have shown that outcomes of obstructive bronchitis generally positive. 54% of children with recurrent episodes of obstructive bronchitis quit being ailing after four years, and other 37% - at older age; thereby, over 90% of patients recovers. Furthermore, the presence of obstructive syndrome at the first three years of life can not be considered as a factor, predisposing to asthma hereinafter. That is, discovered that those of older children, and the main role is played not by hyperreactivity of the bronchial mucosa and muscle spasm, but the tone of the bronchial wall and swelling of the bronchial mucosa. This reflects the fact that "wheezing" of infants is due to various reasons, including abnormalities of the respiratory system and other inflammatory etiology. [5].

The aim of the research was to determine the significance of bronchial obstruction in clinical symptoms of acute respiratory infections of the respiratory tract.

Examination of patients with pneumonia and obstructive bronchitis was conducted on the basis of the pulmonology department of the clinical children hospital № 2. Complex examination was conducted 112 patients aged from 1 month to 1 year, most of children were boys - 61.9%, 38.1% were girls. Diagnosis of pneumonia, obstructive bronchitis installed on the basis of medical history, clinical and radiographic signs of hematological parameters. To identify premonitory background persistent intracellular pathogens carried immunosorbent assay (ELISA) for the presence of antibodies to the membrane and intracellular pathogens such as Mycoplasma hominis, Mycoplasma pneumoniae, Chlamidial pneumoniae and cytomegalovirus. As a result of this survey, we found that 23% of patients often determined by IgM antibodies to M. pneumoniae, M. hominis and Chi. Pneumoniae, and IgG antibodies to CMV-diagnostic titers. Thus significant differences in the presence the mixed or mono infection not observed.

In the history of the surveyed patients found that 7 children were born prematurely, the mothers checked out obstetric and somatic pathology in the form of gestosis, the threat of pregnancy, acute pyelonephritis, viral infections, in the most children to the disease so far have been repeatedly respiratorino- acute viral infection and bronchitis, 12% of the patients had pneumonia. Mostly all children with pneumonia had an unfavorable premonitory background. And the majority of children has been a combination of several different factors: anemia had 19 (45%) children had rickets in 4 (9%) children paratrofiya in 7 (14%) children. PEM suffered 2 (8%), allergic dermatitis in 10 (33%) diagnosed Thymomegaalia in 7 (17%) of children.

The clinical picture in most children observed symptoms prevalence of respiratory failure due to moderate, but persistent bronchial obstruction. Persistent symptoms were paroxysmal unproductive cough. The physical changes in the lungs characterized in 16% of the children persistent local finely wheezing. 75% noted a combination wet and wheezes of all sizes scattered, dry rales_auditioned in 11% of children.

There was a correlation between clinical and radiological data. When X-ray research of logic in all patients was determined by the presence of increased pulmonary pattern, of bronchial obstruction syndrome in combination with focal-infiltrative shadows in both lungs. It should be noted that a persistent bronchial obstruction observed in preterm infants. In 5 (11%) children had a place segmental pneumonia different localization, physical changes have been meager, so for 7-8 days appeared ascutaneart changes in the form of wet finely wheezing on the side of the process. Hemodynamic disorders were stopped on day 8 of the disease.

All patients received etiopathogenetic therapy, which included, along with antibiotics and mukolytics, nebulized bronchodilators (Ventolin or beroval) Choice dependent on the nature and severity of bronchial obstruction inflammation.

Conclusions. The results give grounds to speak about the impact of the maturity of the child (prematurity, intrauterine infection, background pathology, neurological diseases) to the nature and course of the disease, in which the presence and duration of bronchial obstruction may occur and largely determine the clinical symptoms of the disease. In young children, the presence of airflow obstruction is due to various reasons, including abnormalities of the respiratory system and acute inflammatory processes.
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ЖЕДЕЛ РЕСПИРАТОРЛЫ ИНФЕКЦИЯЛАРДА БРОНХООБСТРУКТИВТІ СИНДРОМНЫҢ МАҢЫЗЫ

Түйін: Ерте жастағы балалар респираторлы инфекциялармен ауырға келіп, бронхиалды обструкция дамуы үшін иліктерінің, аурулардың модификациялық факторларының үлесін аз емес, олардың генетикалық құрылысына қатысты болмаса да, бірақ аурулар аның кызметін жаса алады. Бұл бірінші болмаса, жоғарыға қарай, ерте жастағы балалар аурулаға қатыналады.

Түйінді сөздер: бронхообструктивті синдром, жедел респираторлы инфекция

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ЗНАЧЕНИЕ БРОНХООБСТРУКТИВНОГО СИНДРОМА ПРИ ОСТРЫХ РЕСПИРАТОРНЫХ ИНФЕКЦИЯХ

Резюме: У детей первых лет жизни развитию бронхиальной обструкции при респираторных инфекциях немало важное значение имеет преморбидный фон, модифицирующие факторы, которые не имеют непосредственной связи с пневмонией или ее возбудителем, но способны значительно усугубить течение заболевания и неблагоприятно воздействовать на исход.

Ключевые слова: бронхообструктивный синдром, острые респираторные инфекции