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**ТИББИЁТДА ЯНГИ КУН
НОВЫЙ ДЕНЬ В МЕДИЦИНЕ
NEW DAY IN MEDICINE**

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PROGNOSTIC SIGNIFICANCE OF INTESTINAL DYSBIOSIS ON THE COURSE OF ACUTE BRONCHIOLITIS IN CHILDREN

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✓ Resume

To study the intestinal microflora in acute bronchiolitis in children to predict the severity of the disease and prevent relapses. 54 children with acute bronchiolitis were examined. Anamnestic, clinical, laboratory, immunological, and bacteriological data were studied. Acute bronchiolitis in children was severe with the development of acute broncho-obstruction and respiratory failure of varying severity, which required treatment in intensive care. In addition to the main predictors of the formation of acute bronchiolitis and the development of repeated episodes of broncho-obstruction in early childhood (anemia in mothers in the antenatal period, prematurity, cold period of the year, absence or short duration of breastfeeding, early onset of respiratory infections in the first year of life, early clinical manifestations of broncho-obstruction, the presence accompany diseases, a combination of allergic anamnesis), the development of microbial imbalance and bacterial colonization of the intestine has been identified, which should be taken into account when choosing treatment tactics and preventing the progression of the disease.

Keywords: children, acute bronchiolitis, intestinal microflora.

ПРОГНОСТИЧЕСКОЕ ЗНАЧЕНИЕ ДИСБИОЗА КИШЕЧНИКА НА ТЕЧЕНИЕ ОСТРОГО БРОНХИОЛИТА У ДЕТЕЙ

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✓ Резюме

Цель исследования: изучить микрофлору кишечника при остром бронхiolите у детей для прогнозирования тяжести течения заболевания и профилактики рецидивов. Обследовано 54 ребенка с острым бронхiolитом. Изучены анамнестические, клинические, лабораторные, иммунологические и бактериологические данные. Острый бронхiolит у детей протекал тяжело с развитием острой бронхообструкции и дыхательной недостаточности различной степени выраженности, что требовало лечения в условиях отделения интенсивной терапии. Помимо основных предикторов формирования острого бронхiolита и развития повторных эпизодов бронхообструкции в раннем детском возрасте (анемия у матерей в антенатальном периоде, недоношенность, холодный период года, отсутствие или непродолжительное грудное вскармливание, раннее начало респираторных инфекций на первом году жизни, ранние клинические проявления бронхообструкции, наличие сопутствующих заболеваний, сочетание аллергологического анамнеза), выявлено развитие микробного дисбаланса и бактериальной колонизации кишечника, что следует учитывать при выборе тактики лечения и профилактике прогрессирования заболевания.

Ключевые слова: дети, острый бронхiolит, кишечная микрофлора.

BOLALARDA O'TKIR BRONXIOLIT KURSI UCHUN ICHAK DISBIYOZINING PROGNOSTIK QIYMATI

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✓ *Resume*

Tadqiqot maqsadi: bolalarda o'tkir bronxiolitda ichak mikroflorasini o'rganish, kasallikning og'irligini bashorat qilish va asoratlarini oldini olish. O'tkir bronxiolit bilan og'riqan 54 nafar bola tekshirildi. Anamnestik, klinik, laboratoriya, immunologik va bakteriologik ma'lumotlar o'rganildi. Bolalardagi o'tkir bronxiolit o'tkir bronxo-obstruksiya va turli darajadagi nafas yetishmovchiligi rivojlanishi bilan og'ir kechdi, bu esa intensiv terapiya bo'limida davolanishni talab qildi. O'tkir bronxiolitning shakllanishi va erta bolalik davrida bronxo-obstruksiyaning takroriy epizodlari rivojlanishining asosiy prognozlariga qo'shimcha ravishda (antenatal davrda onalarda kamqonlik, erta tug'ilish, sovuq mavsum, emizishning yo'qligi yoki qisqa muddatli emizish, hayotning birinchi yilida respirator infeksiyalarning erta boshlanishi, bronxitning erta klinik ko'rinishlari, anamnezda bronxitning rivojlanishi, konstruktiv kasalliklar). Mikrobiai nomutanosiblik va ichakning bakterial kolonizatsiyasi aniqlandi, bu davolash taktikasini tanlashda va kasallikning rivojlanishining oldini olishda hisobga olinishi kerak.

Kalit so'zlar: bolalar, o'tkir bronxiolit, ichak mikroflorasi.

Introduction

From the first days of a child's life, the colonization of the newborn's digestive tract plays an extremely important role in the development and chronicity of various diseases, particularly allergic reactions. Disruption of the intestinal micro ecology can both exacerbate acute bronchiolitis and act as a superinfection.

The normal intestinal microbiota, as a symbiont, provides nonspecific protection against bacteria that cause various infections and participates in the production of antibodies. As soon as pathological changes occur in the body, the composition and properties of the intestinal microbiota change, disrupting its local and systemic functions. Dysbiosis is a change in the composition of the intestinalmicrobiota, leading to metabolic and immunological disorders due to the influence of unfavorable factors.

A significant feature of acute respiratory viral infections (ARVI) in children is the development of obstructive complications, the most common of which is acute bronchiolitis (AB) (ICD-10: J21) [1, 2].

Acute bronchiolitis is the most common form of airway obstruction in young children, with a frequency ranging from 10% to 30% [3, 4]. The issue of AB holds a special place in pediatric practice due to the severity of its course and its tendency to recur [5]. In children, repeated episodes of bronchial obstruction are the main risk factor for the development of bronchopulmonary dysfunction, exacerbating bronchial hyperreactivity and creating conditions for the subsequent formation of chronic bronchopulmonary diseases, including bronchial asthma [6].

The most effective method of treating bronchial obstruction is primary prevention. Special attention should be paid to identifying and eliminating risk factors for acute bronchiolitis, such as treating community-acquired respiratory viral infections through lifestyle modifications [12].

V.V. Ivanova and co-authors (2005) emphasize that diagnosing the immune response profile of each patient, considering the specific characteristics of immune defense during infection can be successfully used for the timely prediction of complication risks and disease outcomes, as well as for the prescription of justified immunoprotective therapy [13].

Research Objective: To study the intestinal microbiota in children with acute bronchiolitis to predict disease severity and prevent recurrences.

Materials and Methods

A total of 54 children under two years old with acute bronchiolitis were examined. They were

hospitalized in the first and second emergency pediatric departments of the Samarkand branch of the Republican Scientific Center for Emergency Medical Care, followed by outpatient monitoring. The diagnosis was made based on standard clinical, laboratory, and instrumental examination methods.

The patients were divided into two groups

Group I consisted of 34 (63.0%) children (22 girls and 12 boys) under two years old diagnosed with acute bronchiolitis. This group included patients with a single episode of bronchial obstruction.

Group II included 20 (37.0%) children (12 boys and 8 girls) of the same age who had experienced three or more episodes of bronchial obstruction within a year.

The study analyzed complete blood count, urinalysis, C-reactive protein (CRP) levels, blood gas analysis, oxygen saturation (SpO₂), chest X-rays, and the diagnosis. All children had varying degrees of respiratory failure, including oxygen saturation decline, tachypnea, intercostal retractions, wheezing, nasal flaring, and cyanosis.

In Group II, moderate and severe bronchial obstruction, characterized by pronounced dyspnea and distant wheezing, was more common ($p < 0.001$). These children also had significantly higher fever, agitation, and feeding refusal ($p < 0.001$).

CRP levels were elevated in one-third of the patients. Leukocytosis and neutrophilia were observed. Chest X-rays showed increased pulmonary markings, emphysema, hypoventilation, and interstitial edema.

Bacteriological analysis of fecal samples revealed reduced levels of obligatory anaerobic microbiota (bifid bacteria and lactobacilli at 4×10^6 - 7 CFU/g) in most patients (85.2%). Increased levels of opportunistic bacteria such as *Klebsiella* (10^4 - 5 CFU/g) and *Citrobacter* (10^5 - 6 CFU/g) were found in one-third of patients.

Staphylococcus epidermidis (10^5 - 6 CFU/g) was detected in 29.6% of children, and *Candida* fungi (10^5 - 6 CFU/g) were found in 48.1%, more frequently in Group II.

Dysbiosis was diagnosed in 73.5% of Group I and 90.0% of Group II ($p < 0.05$). More severe dysbiotic disorders (Grade III) were only observed in Group II ($p < 0.001$).

Conclusion

Severe acute bronchiolitis was associated with decompensated intestinal dysbiosis. Changes in the intestinal microbiota worsened the overall condition of patients. Risk factors included maternal anemia, premature birth, cold seasons, lack of breastfeeding, early respiratory infections, and allergic predisposition.

Microbial imbalance and intestinal bacterial colonization significantly influence disease severity and should be considered in treatment and prevention strategies. These findings will help improve medical care, reduce diagnostic errors, and develop personalized treatment approaches for young children with acute bronchiolitis.

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