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INTESTINAL DYSFUNCTION IN RESPIRATORY INFECTION IN CHILDREN WHO ARE FREQUENTLY AND OCCASIONALLY ILL

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ABSTRACT

The article reported 146 frequent children and 50 low-morbid children with intestinal dysfunction in respiratory infection. The RI manifestation of children with frequent illnesses is accompanied by a number of special and non-specific sipmtomas, as well as damage to several organs and systems. Children aged 1 to 3 (61%), children aged 3 to 4 (22.6%), and children aged 5 to 6 (10.9%) made up the bulk of the frequent cases. In some cases, this group was accompanied by a background of Ri intestinal dysfunction in children. This condition can be caused by incomplete development of normal microflora or frequent use of antibiotics.

Key words: respiratory infections, children who are often ill, children who are occasionally ill, intestinal microflora.

INTRODUCTION

The relevance of the problem. In the structure of morbidity of frequently ill children (FIC), repeated upper respiratory tract infections (URTIs) predominate, while 10-15% of FICs have lower respiratory tract infections (LRTIs). Other body systems (gastrointestinal, urogenital tract, central nervous system and skin) are less susceptible to infections in these children. Compared to the respiratory system, the above-mentioned organs are the most protected from viral infections [5].

It is known that the respiratory system in children has a narrower lumen than in adults, the mucous membrane is thin, easily damaged, the glands are underdeveloped and the production of Ig A is insignificant. This contributes to a decrease in the barrier function of the mucous membrane and easy penetration of infectious agents, which can lead to repeated infections. [4,10].

The causes of more frequent ARIs may be the anatomical and physiological features of the respiratory tract (mucociliary and surfactant systems, structural features of the bronchi), as well as congenital or acquired pathology, including the immune system, which can affect the frequency of infectious diseases in children [2,7]. Children with ARIs are in the dispensary observation group mainly for 1.5 - 3.5 years, then they get sick, ARIs less and less often, and become, like their peers, "episodically ill children". Only a small part of them continues to worry parents and doctors with their diseases and their complications [6].

Editor-in-chief of the journal "Pediatrics" of the Russian Federation, prof. Samsygina G.A., [1,3] who has been studying the problem of FID for many years, writes: - "In recent years, researchers have begun to notice that breastfeeding and normal intestinal microflora are associated with a significant reduction in the incidence of respiratory infections. Breast milk contains various substances with antimicrobial, anti-inflammatory and immunomodulatory effects. Normal intestinal microflora protects against infection through a number of mechanisms that play an important role in the development of mucous membranes, systemic immunity and tolerance to non-pathogenic antigens." Studies have shown [8,9] that probiotics, lacto- and bifidobacteria can have a beneficial effect on the severity and duration of symptoms of respiratory tract infections.

Purpose of the study: to study intestinal dysfunction, features of clinical symptoms and the course of respiratory infections in 146 frequently ill and 50 occasionally ill children.

Material and research methods. We observed 146 CHBD and 50 EBD aged from 1 year to 6 years hospitalized in City Children's Hospital No. 1 of Samarkand. An anamnestic study was conducted to identify age-related characteristics and the clinical course of respiratory infections, a bacteriological method was used to determine the frequency of inoculation of hemolytic intestinal flora.

Research results and their discussion. The results of the conducted studies show that out of 146 children with respiratory disease, 92 (63%) were hospitalized in the acute respiratory failure hospital. The examined children with respiratory infection (RI) were divided into 3 groups depending on their age. Group 1 1-3 years old, Group 2 3-4 years old, Group 3 4-6 years old.

The incidence of RI in group 1 from 1-3 years was 61% (89), group 2 from 3-4 years 22.6% (33) and group 3 from 4-6 years 16.4% (24). The incidence of RI in group 1 was 50% (25), group 2 – 14% (7) and group 3 – 36% (18) (diagram 2). In our observations, children aged 4 to 6 years with RI account for 16.4%, which coincides with literature data [5].

From the anamnesis it was found out that the group of children we observed had a tendency to frequent respiratory infections. On average, they fell ill with ARI from 6 to 8-9 times during one calendar year. The study of the clinical diagnosis of the examined children shows that out of 146 children with ARI, 68 (46.6%) were hospitalized, 48 (32.9%) with pneumonia, 30 (20.5%) with bronchitis. Similar data were observed in EBD, ARI - 24 (48%), pneumonia - 16 (32%) and bronchitis - 10 (20%).

In the examined CBD, ARI or URT diseases were accompanied by acute nasopharyngitis - 57.3% (out of 68, 39), chronic tonsillitis - 17.6% (12), acute laryngitis - 11.7% (8), follicular tonsillitis - 7.4% (5). Among CBD with RRI, herpetic stomatitis was noted - 3.4% (5), purulent conjunctivitis - 2% (3), otitis - 5.4% (8), protein-energy malnutrition - 10.2% (15), rickets - 8.9% (13), HIE - 8.2% (12), diarrhea - 22% (32).

It is noted that in EBD acute nasopharyngitis occurs with the same frequency in diseases of the upper respiratory tract, out of 24 children in 16 (66.7%). Chronic tonsillitis and acute laryngitis are not registered. Diseases of the ENT organs - catarrhal otitis was observed out of 50 examined in 4 (8%) and follicular tonsillitis in 2 (4%). Protein-energy malnutrition and rickets are absent. Diarrhea was noted in 6 out of 50 (12%).

Also in CBD respiratory infections were accompanied by some syndromes. Convulsive syndrome - 6.8% (10), hyperthermic syndrome - 4.1% (6), obstructive syndrome - 29.5% (43), cardiovascular syndrome - 18.5% (27). Acute respiratory failure (ARF) grade 1 - 26% (38), acute heart failure (AHF) grade 1 - 6.8% (10). In EBD convulsive syndrome was noted in - 4% (2), hyperthermic syndrome - was not observed, obstructive syndrome - 14% (7), cardiovascular syndrome - 8% (4). Acute respiratory failure (ARF) grade 1 - 12% (6), acute heart failure (AHF) grade 1 - 4% (2).

It should be noted that high percentages of diarrhea were observed in FBD (22%) compared to EBD (12%). This is explained by the fact that, at a young age, antagonist microbes in the intestinal microflora are in smaller quantities and the normal intestinal microflora is not fully formed. In addition, with frequent upper respiratory tract diseases, various antibiotics are used, which are most often prescribed empirically, and destroy antagonist microbes. This situation dictates paying special attention to maintaining normal intestinal microflora.

It should be noted that diarrhea was more often recorded in children of group 1, i.e. from 1 year to 3 years old, out of 32 in 19 (59.4%), in group 2 (from 3 to 4 years old) in 13 (40.6%). In group 3, aged from 4 to 6 years, diarrhea was absent.

In EBD in group 1, diarrhea was observed in 8% (4) cases, in group 2 4% (2). Similar data were obtained in group 3.

Thus, the younger the age of children, the more often respiratory diseases are accompanied by diarrhea.

The problem discussed above provides grounds for studying the pathogenic composition of intestinal microflora in CBD with diarrhea. The frequency of hemolytic flora is mainly determined. The intestinal microflora of 32 CBD with respiratory infections was studied.

Analysis of the obtained data shows that of 32 patients with respiratory infections accompanied by diarrhea, hemolytic flora was found in the intestinal microflora - St. aureus, E. coli and Candida.

Hemolytic E. coli was detected in 25% (8) of cases. Among the three opportunistic microorganisms, Staphylococcus aureus ranks first in terms of isolation; it was detected in 13 (40.6%) patients in monocultures, in associations with E. coli 3 (9.4%) and Candida 2 (6.3%). In total, hemolytic staphylococcus was detected in 18 of the 32 patients, which is 56.3% (Table 1).

Table 1

Hemolytic intestinal flora in FBD with RRI

Number of serviced	Detectable microorganisms					
	E. coli	Staph. Aureus	Candida	Staph. aureus + E.coli	Staph. aureus + Candida	E. coli + Candida
32	8 (25.0%)	13 (40.6%)	5 (15.6%)	3 (9.4%)	2 (6.3%)	1 (3.1%)

The results of our work convincingly prove that with diarrhea, as a complication of the main disease of respiratory infection (RI) in CBD, hemolytic flora increases in the intestinal microflora, among which staphylococcus ranks first, E. coli ranks second, and yeast-like fungi Candida ranks third. The detection of hemolytic Candida in the intestinal microflora of CBD is undoubted evidence of the frequent use of antibiotics in the treatment of various diseases.

The sensitivity of the intestinal hemolytic flora to 8 antibiotics (cefazolin, ceftriaxone, gentamicin, macropen, ceklor, erythromycin, augmentin and benzylpenicillin) was studied. Strains of staphylococci and E. coli were resistant to ceklor, erythromycin, gentamicin and benzylpenicillin. If their resistance is from 43.4% to 68.3%, then sensitivity to these antibiotics in total is from 31.7% to 56.6%. The use of these four antibiotics is ineffective if the pathological process is caused by staphylococci and E. coli.

High sensitivity of hemolytic flora was noted to cefazolin (Staph. aureus - 78.3%, E. Coli - 81.6%), ceftriaxone (86.6% - 73.3%, respectively), macropen (88.3% - 85%) and augmentin (88.3% - 83.3%).

Based on the obtained results, it can be concluded that diarrhea often occurs in FBD against the background of RI (22% or 32 out of 146). The intestinal microflora can easily change under the influence of a variety of effects, but most cases depend on the antibiotic used. This condition is considered a serious pathological process and is an additional, and sometimes leading, link in the pathogenesis of RI. Changes in intestinal microflora with the appearance of hemolytic flora require timely treatment and restoration of intestinal microflora in FBD, which is disrupted against the background of RI.

It should be noted that diarrhea in FBD against the background of the underlying disease is not random, but is a natural manifestation of the pathological process, changes in the immunological status of the body. Apparently, the reduced immune state of the body contributes to the development of RI and the empirical use of antibiotics for treatment leads to a change in the intestinal microflora with a predominance of hemolytic flora - diarrhea, reduced immune state and RI again. It turns out to be a vicious circle. Our data are consistent with the data of researchers [1,3].

Conclusions

1. The main group of children with RRI are children aged 1 to 3 years (61%) and 3 to 4 years (22.6%). The number of children with RRI aged 5 to 6 years decreases and makes up 10.9% of the examined children with RRI.

2. In the clinical aspect, among respiratory diseases in the CBD, ARI occupies a leading position, followed by pneumonia and bronchitis. ARI in the CBD in 57.3% of cases occurs as acute nasopharyngitis.

3. In some cases, RI in FBD and EBD is accompanied by intestinal dysfunction, which is explained by the incomplete formation of intestinal microflora and frequent use of antibiotics.

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