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Yunusov Dilshod Muminovich.
Department of Propaedeutics of Children's Diseases and Polyclinic Pediatrics
Andijan State Medical Institute

DIAGNOSIS AND TREATMENT OF ACUTE INTESTINAL INFECTIONS IN CHILDREN

Resume: The article highlights the issues of epidemiology, immunopathogenesis, clinical picture, laboratory diagnostics and the basic principles of complex therapy and prevention of acute intestinal infections in children and adults.

The features of the clinic and treatment of diseases caused by various types of bacteria and viruses are given. Information is given about new drugs used in the treatment of OCI

Key words: acute intestinal infections, diarrhea, rehydration, antibacterial therapy.

Юнусов Дилшод Муминович.
Кафедра пропедевка детские болезни и поликлинической педиатрии
Андижанский государственный медицинский институт

ДИАГНОСТИКА И ЛЕЧЕНИЕ ОСТРЫХ КИШЕЧНЫХ ИНФЕКЦИЙ У ДЕТЕЙ

Резюме: В статьи освещены вопросы эпидемиологии, иммунопатогенеза, клинической картины, лабораторной диагностики и основные принципы комплексной терапии и профилактики острых кишечных инфекций у детей и взрослых.

Приводятся особенности клиники и лечения заболеваний, вызванных различными типами бактерий и вирусов. Дана информация о новых средствах, применяемых при терапии ОКИ

Ключевые слова: острые кишечные инфекции, диарея, регидратация, антибактериальная терапия.

Relevance. The wide prevalence of intestinal infections among children is caused by the high contagiousness and prevalence of pathogens, their resistance to environmental factors, age-related features of the structure and functioning of the digestive system, functional imperfection of protective mechanisms, as well as insufficiently vaccinated and fixed hygiene skills.

In severe forms of intestinal toxicosis, children may develop pulmonary edema, acute renal and acute heart failure. Approximately 2 million deaths from acute intestinal infections are registered annually in the world, mainly among children under 5 years of age.

The problem of acute intestinal infections (AKI) can be considered, not without reason, one of the most acute and widely discussed by the medical community. Indeed, death from OCI is among the top ten leading causes of death in the world, accounting for about 1.5 million cases according to WHO data for 2012 (about the same number of people die from lung cancer, trachea and bronchi, diabetes mellitus, HIV/AIDS) [2]. More than 5,000 children die every day from diarrheal diseases in the world [1,5]. These infections occupy the 4th place in the "significance rating" of the global burden of disease (OBB, 2010 data). [3]. In fairness, it should be noted that such serious figures characterize the situation, first of all, in developing countries. In Russia, it is not so catastrophic, but the socio-economic damage from acute infectious diarrhea is, without exaggeration, huge.

Describing the etiological structure of OCI, it is impossible not to recall a number of well-known difficulties of laboratory diagnostics of this group of

diseases to any infectious disease specialist. As long-term and numerous observations show, routine, "universal" examination of all children with intestinal dysfunction is relatively uninformative. Moreover, it is very expensive. It is known that the frequency of positive results of bacteriological examination of feces of children with OCI varies between 1.5-5.6% [1,4]. The cost of complete laboratory identification of one isolate in such conditions is on average $952-$1200 [3,5].

According to our own research, the frequency of isolation of bacterial diarrhea pathogens in the domestic hospital is even lower: for Salmonella spp. it was only 3 -4.7%, for Shigella spp. 0.07-1.5%% (the results of the study of more than 35,000 fecal samples from children hospitalized with the OKI clinic, the data were not previously published). Voetsch A. et al. It was shown that for every documented case of salmonellosis, there are about 39 cases of unconfirmed [4]. There are many explanations for the failures of bacteriological diagnostics. First of all, it is, of course, a rapid reduction in the proportion of these infections in the modern structure of acute childhood diarrhea (as already mentioned above). The low sensitivity of bacteriological diagnostics is facilitated by the wide availability of intestinal antiseptics and antibiotics used in the practice of so-called "self-treatment" of outpatient patients. It is no secret that obtaining a positive result of the study depends to a large extent on the technique of sampling the material. Everything is so. In addition, to this day there is a previous understanding of the quality problems of the LHC laboratory environments. This idea has become so well-established that it has already become a "common place" in discussions of the problems of diagnosing bacterial infections. But today the situation in this matter has changed significantly.

Modern production technologies ensure the proper quality of selective nutrient media and a high level of positive result in the work of a bacteriologist. It seems to us that any practitioner of an infectious hospital has been convinced

of this more than once. Apparently, it's time to try to find another explanation for a large percentage of so-called "intestinal infections of unknown etiology", rather than trying to increase the volume of routine laboratory tests.

The purpose of the study. Optimization of diagnostics and therapy of acute intestinal infections in children, based on the identification of their clinical and pathogenetic features and the study of the state of intestinal microbiocenosis.

Materials and methods of research. We observed 60 children with OCI aged from 6 months to 6 years, taking into account the differences in the complex therapy of acute diarrhea, all observed patients were randomly divided into 3 groups.

The results of the study. The most pronounced clinical effect was observed in the group of patients receiving a combination of lactulose with pancreatin (main group B). The duration of diarrhea in patients in this group was significantly less (4.24±0.21 days) than in the main group A (5.6± 0.48 days) and in the comparison group (6.2±0.52 days) ($p<0.01$). In patients receiving a prebiotic drug, a more rapid cessation of flatulence was also observed: 4.4 ± 0.32 days in group A, 3.8 ± 0.46 days. – in group B compared with 5.1 ±0.42 days in the group receiving only enterosorbents. We have not revealed the effect of lactulose and pancreatin on the timing of relief of symptoms of infectious toxicosis and vomiting.

It should be noted that lactulose and pancreatin are well tolerated, as well as the absence of any negative side reactions, including allergic ones.

In a comprehensive assessment of the clinical efficacy of therapy, it was found that the highest frequency of the "good" effect of treatment was observed in the group of patients receiving pancreatin together with lactulose.

At the same time, when only lactulose was included in traditional therapy, a 20% increase in clinical efficacy was noted. The absence of a clinical effect from the treatment by the end of 3 days was least often observed in the group

receiving lactulose + pancreatin (in 1 patient). In the comparison group, the number of such children was significantly higher – 4.

A comparative assessment of the state of the colon microflora against the background of therapy was carried out in 30 patients – 10 in each of the groups. It was found that in the acute period of intestinal infection, 100% of patients develop dysbiotic disorders of varying degrees, characterized by a decrease in the level of lactobacilli (in 63.3% of children), bifidobacteria (in 80%), normal Escherichia coli (in 66.7%), an increase in the level of Escherichia coli with altered enzymatic activity (in 33.3%), hemolytic E. coli. coli (in 23.3%), an increase in the number of opportunistic microorganisms (in 16.7%), Staphylococcus aureus (in 36.7%) and yeast fungi (in 23.3%).

As can be seen from the data in Table 2, the nature of dysbiotic disorders before the start of treatment did not differ significantly between the groups (the only difference was 2 times more children with reduced levels of lactobacilli in the Stimbifid + bifidumbacterin group).

The use of lactulose in OCI contributed to the improvement of the microecological landscape, including the restoration of the normal level of bifidobacteria in 50% of patients, normal Escherichia coli - in 50%. Positive changes in the composition of obligate microflora contributed to the elimination of E. coli with altered enzymatic activity in 30% of patients, Staphylococcus aureus - in all patients of this group, a decrease in the level of yeast fungi - in 30%.

An even greater effect was achieved with the combined use of pancreatin and lactulose: the deficiency of bifidobacteria was eliminated in 70% of patients, normalization of E. coli levels was achieved in 50%, complete elimination of opportunistic bacteria (Klebsiella, Citrobacter) and St. aureus was also noted.

The least positive changes in the composition of the microflora of the colon were observed in the group of patients receiving only traditional therapy: 60% of children had a deficiency of lacto– and bifidobacteria, the level of

normal Escherichia coli did not change, yeast fungi and St. aureus were detected with the same frequency.

When analyzing the structure of dysbiotic disorders according to their severity (in accordance with the industry standard "Protocol for the management of patients.

II and III degrees of dysbiosis prevailed. Against the background of lactulose therapy, from the first days of OKI, the restoration of normoflora was noted in 20% of patients, and in combination with pancreatin – in 50%.

Among those who received lactulose after the end of treatment, no patients with grade III dysbiosis were identified. At the same time, when using bifidumbacterin in the form of monotherapy for OCI, the severity of microecological disorders did not change: dysbiosis of the III degree was noted in 20% of children, II degree – in 60%, no cases of restoration of eubiosis were recorded.

Conclusion. Thus, taking into account the wide prevalence and diversity of pathogens, as well as difficulties encountered in diagnosis, the problem of OCI in childhood does not lose its relevance. The tactics of treatment of this group of diseases should have a complex and step-by-step nature and include rehydration and diet therapy, etiotropic and pathogenetic treatment. In recent years, convincing data have been obtained regarding the effectiveness of individual strains of probiotic microorganisms and drugs containing them, the use of which in initial therapy provides a significant reduction in the severity of the main symptoms of the disease, and also has a beneficial effect on the state of the microflora of the gastrointestinal tract.

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