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TREATMENT TACTICS FOR ACUTE INTESTINAL INFECTIONS IN CHILDREN

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Abstract:

Acute intestinal infections occupy one of the leading places in the structure of infectious pathology in children. Their clinical manifestations include symptoms of intoxication (lethargy, decreased appetite, fever, etc.), syndromes of infectious toxicosis (toxicosis with exsicosis, neurotoxicosis, hypovolemic or infectious-toxic shock, etc.) and diarrheal syndrome. Often, intestinal infections can be severe and even lead to death. In this case, the duration of the disease and its outcome directly depend on the timeliness and adequacy of the prescribed therapy.

Keywords: acute intestinal infections, etiopathogenesis, clinical diagnostic criteria, treatment, probiotics, children.

INTRODUCTION

Gastrointestinal tract (GIT) diseases are among the most common in childhood, second only to influenza and acute respiratory infections in terms of incidence. According to WHO experts, up to 1–1.2 billion diarrhea-type diseases are registered worldwide every year, and about 5 million children die annually from intestinal infections and their complications [1]. Most often, children experience acute intestinal infections (AII), which can be severe and even fatal not only in early childhood (up to 3 years), but also in older age [2].

MATERIALS AND METHODS

Acute intestinal infections are a large group of infectious diseases of humans with an enteral (fecal-oral) mechanism of infection, caused by pathogenic microorganisms (shigella, salmonella, clostridia, enteropathogenic strains of Escherichia coli, yersinia, campylobacter, mycobacteria, chlamydia, gonococci, etc.), viruses (rotaviruses, astroviruses, caliciviruses, adenoviruses, herpes simplex virus, cytomegalovirus, etc.) and protozoa (dysenteric amoeba, cryptosporidia, lamblia, balantidia coli, etc.). The source of acute intestinal infections is humans and (or) animals. The most common route of infection transmission for young children is contact-household, for older children - food or water. Intrauterine infection of the fetus is possible with acute intestinal infections occurring with bacteremia (for example, typhoid fever, campylobacteriosis).

RESULTS AND DISCUSSION

Intestinal infections occur both as sporadic cases and as epidemic outbreaks, up to pandemics (cholera). At the same time, for the vast majority of acute intestinal infections of bacterial origin, the incidence rate increases in summer-autumn, for viral diarrhea - in autumn-winter. Acute diarrhea is characterized by a disruption of intestinal function, characterized by an increase in stool frequency (compared to age norms), the presence of impurities (mucus, semi-digested food, blood, etc.), lasting on average up to 2 weeks [1]. It is important to note that the features of the clinical picture for each nosological form of acute intestinal infections depend mainly on the presence of a specific set of leading pathogenicity factors in the infectious agent (ability to invade, production of endo- and exotoxins, their tropism of action, etc.) [2].

Classification of acute intestinal infections in children

Currently, intestinal infections are usually classified by the etiologic factor confirmed by laboratory diagnostic methods, which makes it possible to verify the nosological forms of acute intestinal infections. If laboratory confirmation cannot be obtained, then the diagnosis based on clinical and epidemiological data is formulated as "intestinal infection of unknown etiology" with mandatory indication (as with laboratory confirmation) of the topic of the gastrointestinal tract lesion (gastritis, enteritis, gastroenteritis, colitis, etc.) and the leading clinical syndrome determining the severity of the disease.

Acute intestinal infections, manifested by severe in frequency and nature of stool disorders, have some features. For example, with bacterial diarrhea (escherichiosis, shigellosis) the stool is loose and frequent, fever and abdominal pain are also noted. In the case of campylobacterial ileitis, the clinical picture resembles acute appendicitis, which often leads to medical errors, since such patients undergo surgery. In severe cases of yersiniosis, arthritis and erythema nodosum develop. In conditions of bacteremia in salmonellosis, pneumonia, meningitis, and abscesses of internal organs may develop. Very aggressive enterohemolytic strains of E. coli are one of the causes of hemolytic-uremic syndrome, including acute renal

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failure, hemolytic anemia, and thrombocytopenic purpura.

Despite certain differences in infectious diarrhea, they are based on common mechanisms. In this regard, the following forms are distinguished [3]:

• Invasive (intestinal hyperexudation) - occurs as a result of transudation of mucus, pus and blood into the intestinal lumen against the background of inflammatory changes in its mucous membrane. At the same time, there is a loss of protein, enzymes, immunoglobulins. The volume of feces is 100-200 ml per day, sometimes more [2].

• Secretory diarrhea (intestinal hypersecretion) - is caused by an increase in the activity of adenylate cyclase with the formation of cyclic adenosine monophosphate in infectious diseases, the accumulation of deconjugated bile acids, and hyperproduction of regulatory polypeptides (secretin, vasoactive interstitial polypeptide, etc.). Due to hypersecretion of water and electrolytes, patients experience frequent loose stools with a volume of 300–500 to 800–1000 ml per day, depending on the patient's age.

Clinical and diagnostic criteria for acute intestinal infections in children

Any section of the gastrointestinal tract may be the focus of the inflammatory process in acute intestinal infections of varying severity of bacterial etiology of the exudative type. In intestinal infections that occur as secretory or osmotic diarrhea, only the small intestine is involved in the pathological process. Depending on the involvement of a particular section of the gastrointestinal tract in the pathological process, the topical diagnosis may be [1]:

• "Gastritis" is a lesion of the stomach of primary inflammatory genesis, accompanied by pain and a feeling of heaviness in the epigastric region, nausea, repeated vomiting against the background of moderate fever and intoxication. Short-term liquefaction of stool with a foul odor is possible. The coprogram contains a large amount of connective tissue, coarse plant fiber and striated muscle fibers. • "Enteritis" is a primary inflammatory lesion of the small intestine, manifested by non-localized (or around the navel), constant or periodically recurring, independent or upon palpation abdominal pain; flatulence; liquid, profuse, watery, often foamy stool with undigested lumps of food, yellow or yellow-green in color, with a sharp sour odor and a small amount of transparent mucus (lumps or flakes). The coprogram shows a large amount of fatty acids, starch grains (extra- and intracellular), muscle fibers and soap (fatty acid salts).

• "Gastroenteritis" is a combination of gastritis with enteritis, most often encountered in acute intestinal infections of viral etiology, as well as in Escherichia coli and salmonellosis.

A. A. Novokshonov et al. studied the clinical efficacy of the drug and its effect on the intestinal microbiocenosis in the complex therapy of moderate forms of acute intestinal infections of bacterial and viral-bacterial etiology in children. The study included 75 patients with moderate forms of acute intestinal infections of bacterial etiology of the "invasive" type of diarrhea (45 children) and viral-bacterial etiology of the "invasive-osmotic" type of diarrhea (30 children) aged from 6 months to 10 years. All patients received basic therapy (diet, oral rehydration, enzyme preparations and symptomatic agents). Patients with acute intestinal infections of bacterial etiology received furazolidone as an etiotropic therapy, of which 15 children received furazolidone in combination with the studied probiotic. In case of viral-bacterial etiology of AII, all patients in addition to the basic therapy received the study drug in combination with furazolidone or umifenovir - 15 patients in each group. The authors have proven that when including a probiotic together with antibacterial drugs (furazolidone) in the basic therapy of moderate forms of AII (bacterial etiology of the "invasive" type of diarrhea), in contrast to monotherapy with furazolidone, dysbiotic changes in the intestinal microflora do not progress, and the average duration of symptoms of toxicosis, diarrhea syndrome and the acute period of the disease is reliably reduced.

CONCLUSION

Thus, the presented data allow us to recommend the use of Acipol for the treatment of children, in particular with acute intestinal infections of established (shigellosis, salmonellosis, coliform infection, rotavirus infection) and unknown etiology, as well as infections caused by opportunistic microorganisms. In addition, the drug is indicated for intestinal disorders and gastrointestinal dysfunctions accompanied by intestinal dysbacteriosis; in newborns, including premature, low-birth-weight children, with profound congenital pathology, who primarily experience a deficiency of lacto- and bifidoflora; to restore normal microflora and reduce the volume of antibacterial therapy in recurrent pneumocystosis.

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