

PRINCIPLES OF TREATMENT AND PREVENTION OF ACUTE INTESTINAL INFECTIONS

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Relevance of the Problem. Diarrheal diseases are among the most widespread and frequently occurring illnesses globally, causing significant economic damage. As such, they remain at the center of attention for scientists around the world. The severe and prolonged course of these diseases, particularly in children, has led to a noticeable increase in mortality rates among this vulnerable group, prompting continuous research by specialists in the field. It is important to emphasize that these diseases not only lead to premature death and major economic losses, but also pose a serious threat to the foundation of a healthy generation. They negatively impact the mental and physical development of children — making them irritable, apathetic, and weak. As a result, such children become more susceptible to superstitions and diseases, ultimately causing both moral and further economic harm to society.

Keywords: Diarrhea, prevention, acute intestinal infections, antibiotics, dysbiosis, probiotics.

The treatment of acute intestinal infections should be comprehensive, taking into account the individual characteristics of the patient's body, the stage and severity of the disease, as well as the premorbid background. The treatment scheme for diarrhea includes bed rest and diet, etiological therapy using broad-spectrum antibiotics and nitrofurans, infusion, rehydration, antipyretic therapy, and others. For a long time, the use of antibiotics such as synthomycin, chloramphenicol, tetracycline, and aminoglycosides in the treatment of salmonellosis, dysentery, and other acute intestinal infections showed effective clinical results. However, in recent years, the emergence of antibiotic-resistant strains of microorganisms has reduced the effectiveness of antibiotic therapy. After completing treatment with antibiotics like gentamicin, gentacin, chloramphenicol, tetracycline, and others with broad-spectrum activity, recurrences and repeated bacterial shedding have been frequently observed. Along with the emergence of resistant strains to the antibiotics mentioned above, dysbiotic processes in the intestine have also been noted. As a result, there has been a shift from traditional views regarding antibacterial therapy in recent years.

According to a number of authors, nitrofurans such as furazolidone and furadonin remain effective. These drugs rarely cause dysbiosis compared to antibiotics and do not negatively affect intestinal repair.

V.V. Gebesh observed patients with salmonellosis who were treated with antibiotics and chemotherapeutic agents, compared to a control group that only received pathogenetic therapy. In cases treated with antibacterial agents, the duration of diarrhea significantly increased regardless of disease severity, and the symptoms of intoxication took longer to disappear in moderate and severe

cases. Acute bacterial carriage developed more frequently among patients receiving antibacterial treatment compared to the control group.

According to several authors, in gastrointestinal forms of salmonellosis and acute dysentery, not only is antibacterial therapy often ineffective, but it may also be harmful as it prolongs the disappearance of symptoms and delays the body's process of eliminating the pathogen.

Therefore, pathogenetic therapy aimed at restoring fluid and electrolyte balance, acid-base status, hemodynamics, neurohumoral, enzymatic, and excretory system functions is considered the main method of treatment.

Modern treatment methods for dysentery also require a specific approach.

In severe cases of intestinal infections, infusion therapy with glucose-saline solutions is widely used to combat intoxication and dehydration. In recent years, colloidal polyionic solutions such as reopoliglyukin and poliglyukin have been utilized. Advances in pharmaceutical manufacturing have led to the creation of solutions like Trisol, Lactosol, Disol, Kholasol, Acesol, Isolit, and Neocompensan, which contain the optimal combination of ions lost during diarrhea.

In cases with pronounced intoxication, low molecular weight polyvinylpyrrolidone solutions (e.g., Neocompensan, Periston, Polidez) are effective as they bind toxins in the blood by forming complex compounds and facilitate their removal through urine. These solutions also help increase blood pressure and are used in patients experiencing shock. Reopoliglyukin reduces blood viscosity, prevents the aggregation of blood elements, restores microcirculation, and has a detoxifying effect.

Intravenous rehydration is recommended in severe dehydration cases, persistent fluid loss due to diarrhea and vomiting, loss of consciousness, and the development of infectious toxic shock.

Both national and international experiences demonstrate that oral rehydration therapy (ORT) is a cost-effective and convenient method for treating mild and moderate acute infectious diseases. ORT can be used not only in hospitals but also during patient transportation or home treatment, thereby reducing the incidence of nosocomial infections. Implementing this method reduces the need for intravenous infusions and helps prevent parenterally transmitted infections (e.g., hepatitis B, HIV). ORT lowers treatment costs and shortens hospital stays. Treatment involves the intake of glucose-electrolyte solutions and proper nutrition to quickly replace water and electrolyte losses caused by diarrhea and vomiting.

Enterosorption using sorbents like Enterodesum and pectin reduces the concentration of toxic compounds in blood and tissues. As a method of sorption detoxification, enterosorption is gaining popularity due to its minimal side effects and ability to rapidly reduce the amount of toxic agents when administered in effective doses. The effectiveness of these preparations depends on the timing of their use — the earlier the treatment begins, the better the therapeutic outcome.

In addition to diarrhea, many acute intestinal infections also include intoxication symptoms such as hyperthermia, anorexia, nausea, vomiting, microcirculation disturbances, and dysbiosis. Therefore, symptomatic treatment — including antipyretics, antiemetics, analgesics, biopreparations, and immunomodulators — is prescribed individually.

Vitamin therapy plays an important role in the treatment of intestinal infections, as inflammation of the gastrointestinal mucosa leads to impaired absorption of vitamins and trace elements from food. This contributes to the development of polyhypovitaminosis and disrupts metabolic and oxidative phosphorylation processes. Therefore, the use of a wide range of vitamins both orally and parenterally is recommended in cases of acute intestinal infections.

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Alongside treatment of pediatric patients with diarrheal diseases, many researchers have recommended the inclusion of bacterial preparations and immunomodulators in therapy to address dysbiosis and secondary immunodeficiency. These bacterial drugs have antagonistic activity against a broad range of pathogenic and conditionally pathogenic microorganisms, thereby normalizing gut microbiota. They help restore gastrointestinal function, improve metabolism, prevent chronic intestinal diseases, and enhance nonspecific resistance of the body. They also produce natural antibiotics, vitamins, and organic acids, which provide general strengthening and therapeutic effects on the body.

As with all infectious diseases, diarrheal illnesses are closely linked to the immune system, and immune deficiencies are often observed. Recovery depends on how quickly and effectively the immune system recognizes and eliminates pathogens.

In recent years, developments in medical science have improved laboratory diagnostics of acute intestinal infections, updated treatment protocols, and introduced modern medications. Globally, and in Uzbekistan in particular, significant progress has been made in addressing various challenges related to the prevention of diarrheal diseases, yielding positive results.

Uzbekistan's new healthcare development concept and state reform program have identified prevention as the top priority in medicine.

Preventive measures include comprehensive medical, social, and hygienic initiatives implemented by the state. Currently, three types of prevention are recognized:

1. **Primary prevention** – identifying and eliminating or minimizing the impact of natural, domestic, occupational, social, economic, and other factors that cause diseases to improve public health.
2. **Secondary prevention** – early detection and timely treatment of diseases, as well as measures to prevent the recurrence and progression of chronic conditions.
3. **Tertiary prevention** – preventing disability and developing social rehabilitation strategies for patients.

Given the climatic conditions and lifestyles in different regions of Uzbekistan, primary prevention must be tailored to the specific nature of diseases, as their causes vary.

A review of scientific data indicates that acute intestinal infections are common in ecologically disadvantaged areas, and many aspects of their structure and characteristics remain unexplored. Moreover, the etiology of diarrheal disease pathogens has not been fully studied, and new proposed preventive methods have not been adequately evaluated from a socio-hygienic perspective.

Particularly concerning is the high incidence of diarrhea among children in the ecologically distressed Aral Sea region. However, there is limited information on the structure, mortality rates, etiological characteristics, and the effectiveness of preventive measures for these diseases in this region.

Conclusion. In conclusion, this review highlights a number of positive outcomes, practical suggestions, and effective strategies for the treatment and prevention of acute intestinal infections. Developing simpler, more effective, safer, and affordable treatment and prevention methods tailored to specific climate-geographic regions (such as the southern Aral Sea area) and implementing them in practice remains a pressing need.

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