# MODERN METHODS OF DIAGNOSIS OF ACUTE INTESTINAL INFECTIONS IN CHILDREN

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**ABSTRACT:** It is impossible to overestimate the relevance of the problem of acute infectious diarrhea in children today. Widespread prevalence, high incidence, universal susceptibility - these are the main epidemiological points that explain the interest in acute intestinal infections (AEI) among researchers and practitioners. Moreover, the high frequency of moderate and severe forms of acute intestinal infections in children, the likelihood of a protracted course of the disease, the formation of post-infectious pathology of the gastrointestinal tract [1, 2] now complement from the clinical side the complex of problems that a pediatrician has to face almost every day. atru. And finally, even mild forms of diarrheal diseases significantly reduce the quality of life of the patient.

**Key words:** Children, acute intestinal infections, etiology, diagnostics.

Acute intestinal infections (AI) occupy one of the leading places in the structure of infectious pathology in childhood. The variety of etiological agents (bacteria, viruses and protozoa) that cause infectious diarrhea, the high frequency of mixed infections, frequent adverse outcomes and uneven course justify the need to find ways to optimize diagnostic and therapeutic approaches in accordance with modern scientific data. The article discusses the principles of clinical and laboratory diagnosis of acute intestinal infections. Criteria for assessing the severity of the disease and prognostic criteria for the development of life-threatening conditions associated with exicosis are presented. From a modern perspective, the principles of treatment of acute intestinal infections are presented, the need for an integrated approach and phasing in therapy with a personalized choice of drugs, taking into account the severity, phase and clinical form of the disease, the age of the child and the state of the macroorganism at the time of the onset of the disease, is emphasized [1]. The need for a strictly differentiated approach to the prescription of antibiotics is emphasized. Separately, data are presented on the advisability of including probiotics in the initial therapy of acute intestinal infections of viral etiology, taking into account strain-specific effectiveness, which ensures a significant reduction in the severity and duration of the main symptoms of the disease, and also has a beneficial effect on the state of the microflora of the gastrointestinal tract [2].

**Purpose of the study.** To study the etiological structure of modern acute intestinal infections in children and evaluate their clinical and pathogenetic features for the timely prescription of adequate therapy.

**Material and methods.**

An assessment was made of the spectrum of pathogens dominant in the Andijan region in children. The study included 532 children - all (complete sample) admitted for hospitalization at the Children's Hospital Andijan Region for 3 years (2020-2023) with a clinic for acute intestinal infection. The age of those examined was from birth to 14 years. The etiological decoding of the diagnosis was carried out using the method of bacteriological examination of feces to identify

bacterial pathogens and immunochromatographic analysis to determine the rotavirus antigen in feces.

Statistical processing of data was carried out using statistical software packages STATISTICA 8.0, Microsoft Excel 2013, and an online calculator for calculating statistical criteria (http://medstatistic.ru/calculators.html). The construction of a mathematical model to determine the etiology (viral or bacterial) of acute intestinal infections based on clinical and laboratory (CLA) data was carried out using the logistic regression method. The model is implemented in a MS Excel file (model accuracy rate is 75%). To assess the diagnostic significance of selected clinical tests ("anxiety symptoms"), Receiver Operating Characteristic (ROQ) analysis was performed with calculation of the area under the curve.

## Research results

The average age of 60 patients whose etiology of the disease was studied using the maximum possible range of laboratory research methods was 2.7 CI 1.4-4 years. Children under one year old were 18.3% (95% CI 8.5-37.9), 11/60, from one to 3 years old - 51.7% (95% CI 39.1-64.3), 31/60, from 3 to 7 years - 23.3% (95% CI 12.6-34), 14/60, over 7 years - 6.7% (95% CI 0.4- 13), 4/60. There were no significant differences by gender: the proportion of boys was 46.7% (95% CI 34.1-59.3), 28/60, $p>0.05$. The etiological structure of the isolated pathogens is presented.

Unfortunately, in practice, such a complete verification scheme for the causative agent of ACI is implemented only in epidemiological areas in Andijan regions when group cases of diseases (outbreaks) occur. As a rule, laboratory tests use routine methods accessible to the average laboratory: bacteriological examination of feces for pathogenic intestinal enterobacteria (Salmonella, Shigella, diarrheagenic Escherichia) and determination of rotavirus antigens in feces using ICA. When using such limited laboratory capabilities, the etiological structure of AEI looks different.

The proportion of rotavirus gastroenteritis is maximum during the cold period (41-53.4%) of the year. Bacterial intestinal infections are more often recorded in the summer-autumn period (9.3%). In summer and autumn, the proportion of children with acute intestinal infection of unspecified etiology (AEI) increases significantly. The "monthly" etiological structure of ACI is presented.

## Discussion

Distinguishing between different etiologies of acute intestinal infections, or, in other words, viral and bacterial diarrhea at the very beginning of the disease, is the main task facing the doctor at the time a child with diarrhea first seeks medical help. Verification of the diagnosis largely determines the tactics of managing patients with intestinal infection, anti-epidemic measures, preventive approaches, etc.

Attempts to identify certain "pathognomonic" symptoms that would allow one to correctly determine the etiology of acutely developed diarrhea have been made for quite a long time. The data presented in the literature largely coincide with the results of our study. Thus, it was previously reported in the Andijan region that one should think about bacterial acute intestinal infections in a child if the clinic identifies symptoms of hemocolitis, an increase in body temperature above 400C, abdominal pain syndrome and acute neurological symptoms (during the period of diarrheal disease) [6].

In addition, the possibility of identifying laboratory markers of bacterial acute intestinal infections was assessed. In particular, it was reported in the Andijan region that in diseases

caused by salmonella, the levels of C-reactive protein (CRP) significantly increase and the ESR accelerates. Determination of fecal lactoferrin and calprotectin indicators, stool pH also has a certain value in the diagnostic search [6]. Rotavirus infection, according to the data presented, is characterized by increased levels of liver enzymes, more pronounced signs of metabolic acidosis, and low CRP values [4].

Recently, with the improvement of the laboratory diagnostic facilities of most clinics, relatively new methods for etiological decoding of the diagnosis of intestinal infection have become available [1, 5]. We are talking about molecular genetic diagnostics. In the Andijan region, the use of polymerase chain reaction (PCR) for the etiological decoding of ACI allows increasing the number of verified diagnoses to 70% [5]. Of course, these methods for diagnosing the etiology of acute intestinal infections are the future.

However, no matter what modern and "advanced" capabilities laboratories have, about 30-60% of acute infectious diarrhea still remain etiologically undeciphered [2]. With the development of new medical diagnostic technologies, this percentage will inevitably decrease. Human ecology, and with it the factors leading to the formation of various kinds of disease processes, will change: the importance of some microbes will increase, while others will decrease against this background. With an understanding of the causes of diarrhea, their mechanisms, as well as effective means that can intervene in the development of this process, it will be possible to reliably control this phenomenon. Probably, then we will decide on the need to mandatory clarify the etiology of infectious diarrhea.

In the meantime, today, in a clinic setting for children in the absence of the possibility of a "universal" bacteriological examination, the proposed "alarm symptoms" make it possible to identify a group of patients who require mandatory bacteriological examination for pathogenic enterobacteria. And it is in them that the likelihood of confirming the bacterial nature of the disease is maximum. All this will significantly reduce the costs of this item of work with patients with ACI.

Acute intestinal infections in children whose clinical presentation does not include the proposed "alarm symptoms" are almost always

## References:

1. Geppe NA, Lyskina GA, Rjabova TV. Juvenilnyj dermatomiozit. In: Geppe NA, Podchernjaeva NS, Lyskina GA, editors. Rukovodstvo po detskoj revmatologii. Moskva: GEOTAR Media; 2011. p. 432-462. (Russian).
2. Lyskina GA, Varshavskij VA. Juvenilnyj dermatomiozit. In: Baranov AA, Alekseeva EI, editors. Detskaja revmatologija. Atlas. Moskva: Pediatr; 2015. p. 185-198. (Russian).

3. Lyskina GA, Varshavskij VA. Juvenilnyj dermatomiozit. In: Shkolnikova MA, Alekseeva EI, editors. Klinicheskie rekomendacii po detskoj kardiologii i revmatologii. Moskva: Associacija detskih kardiologov Rossii; 2011. p. 379-395. (Russian)..

4. Taxirovich, A. S. (2023). The Main Etiological Factors, Methods of Prevention and Treatment of Meningitis. Inter-national Journal of Scientific Trends, 2(2), 141-148.

5. Mamarasulova, D. Z., Urmanbaeva, D. A., Khasanov, D. S., & Abdukodirov, S. T. (2023). THE ROLE OF CIN-DIAG RAPID TEST IN SCREENING FOR CERVICAL EPITHELIUM PATHOLOGY. International Journal of Advance Scientific Research, 3(09), 150-158.

6. Involvement of tumor necrosis factor alpha and interleukin- 1beta in enhancement of pentylenetetrazole-induced seizures caused by Shigella dysenteriae / Y Yuhas et al. // Infect. Immun. — 1999. — Vol. 67 (3). — P. 1455-1460.

7. Acute diarrhea in adults and children: a global perspective / M. Farthing et al. //World Gastroenterology Organisation Global Guidelines. — 2020. http://www.worldgastroenterology.org/assets/export/userfiles/ AcuteDiarrhea_long_FINAL_120604.pdf