ISSN: 2582-4686 SJIF 2021-3.261, 2022-2.889, 2023-5.384, 2024-6.875 ResearchBib IF: 9.948 / 2024

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-5, ISSUE-3

PECULIARITIES OF THE ETIOLOGICAL STRUCTURE OF ACUTE DIARRHEAL DISEASES IN THE CONDITIONS OF THE SOUTHERN ARAL REGION

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Resume

Diarrheal syndrome is a complex of various symptoms associated with a violation of the bowel movement process, characterized by an increase in the frequency of stools (more than 3 times a day) with the release of fecal matter of a liquid consistency and / or in large quantities. Depending on the duration of these symptoms, acute (no more than 2-3 weeks) and chronic diarrhea are distinguished. The etiological structure of diarrheal syndrome is dominated by infectious diarrhea. At the same time, viruses are the causative agents of diarrhea in more than 60% of cases, and bacteria in more than 20%. In about 10% of all cases, diarrhea is functional. In addition, the importance of the problem of antibiotic-associated diarrhea, which is faced by doctors of almost all specialties, is increasing every year. Acute diarrhoeal diseases (EDD) are a serious medical and social problem, especially in regions with hot climates and low sanitation levels. This article examines the features of the etiological structure of DLD in the Southern Aral Sea region, analyzes the main pathogens, their prevalence and factors contributing to morbidity.

Key words: diarrhea, ecology, shigella, salmonella, antibiotic, intestines.

Introduction. Acute infectious diarrheal diseases occupy the 2nd place in the structure of infectious morbidity, second only in prevalence to acute respiratory diseases. In the developed world, there are on average at least 3 episodes of diarrhea per year per person. Every year in the world, about 2.5-3.2 million cases of acute gastroenteritis are fatal. Nowadays, the problem of epidemics of dangerous infections does not lose its relevance: according to the World Health Organization, a cholera epidemic is raging in Yemen today (over 630 thousand people have already fallen ill). more than 1,200 people have died), and Madagascar is experiencing an epidemic spread of the plague. Therefore, it is extremely important for every doctor who examines a patient with diarrheal syndrome to carefully collect an epidemiological history and find out if the patient has previously visited countries with hot climates where the problem of acute intestinal infections is particularly acute. Also, do not forget about such a functional condition, which often occurs when a geographical region changes, as travelers' diarrhea.

Diarrhea is one of the most common disorders of intestinal function. According to WHO, diarrheal diseases cause the death of more than 2 million people per year. Therefore, the issues of pathogenesis, diagnosis and treatment of diseases associated with this disorder of intestinal function do not lose their relevance. Any diarrhea is a clinical manifestation of the predominance of water-electrolyte secretion over intestinal absorption. The ability of the small and large intestines to absorb water and electrolytes is surprising in its complexity and accuracy of achieving the final result. A person consumes about 2 liters of water daily with food. The volume of endogenous fluid entering the intestinal cavity as part of digestive secretions reaches an average of 7 liters. From 70 to 80% of it is absorbed in the small intestine. From 1 to 2 liters of water enters the colon during the day, 90% of it is absorbed and only 100-200 ml is lost in the feces. Even a small change in the volume of fluid

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in the stool leads to constipation or diarrhea. The creation of new laboratory methods and their implementation in practice gives us a chance to discover the etiological factors of infectious diseases. But humanity is still far from completely defeating infectious diseases. In the Republic of Uzbekistan, in a region with a hot climate, there is a decrease in diarrheal diseases, but the incidence among children remains high.

Khorezm region is located in the northern part of the Republic of Uzbekistan. In the last 50 years, the Khorezm region has been experiencing an increase in the concentration of heavy metal salts and various organic compounds in flowing waters and in the ground due to the drying of the Aral Sea in the ecosystem. This, in turn, increases the incidence of diseases in the Khorezm region. The main task of infectology at present is to study acute diarrheal diseases and their complications, causes and mortality.

It is known that infectious diseases are formed due to the virulence of the pathogen, toxicity, immunogenicity, resistance of microorganisms, direct action of the external environment and resistance to antibiotics. In particular, the causative agents of diarrheal diseases are being studied to identify new antibiotics that are resistant to salmonella and shigella. It is difficult to study these diseases from all sides in the Khorezm region, the determination of the properties of the pathogen is determined by complications of the consequences of diseases and the mortality rate has not been fully resolved.

The aim of the study is to determine the features of the etiological spectrum of DLD in the Southern Aral Sea region and identify the leading factors influencing their spread.

Materials and methods. To study the etiological structure of acute diarrheal diseases in the Southern Aral Sea region, we retrospectively analyzed the material of the bacteriological service of the Khorezm region for 12 years (2020-2022). The material is taken from the report of the bacteriological laboratories of the region, the journal of registration of grown and isolated cultures. Statistical processing of the material was carried out according to Student and Fisher.

Results and discussions. During the analyzed period, 3755 shigella were isolated, of which 116 (4.4%) strains were identified as Sh.Dysenteriae, 3040 (80%)-Sh.Boydi. At the same time, it was noted that in recent years, the proportion of Sh.Flexneri has increased significantly, compared with other species of shigella. So, if in 2020 Sh.Flexneri accounted for 72% of all shigella, then in 2020 this figure reached 94%. The allocation of Sh.Dysenteri and Sh.Boydi began to decrease from 2005 and by 2012-2014 they were isolated in isolated cases. A similar pattern was observed with regard to Sh.Sonni, so if in 2020-2022 Sh.Sonni accounted for 23% of all shigella, then in 2021 this figure dropped to 2.1%. The total seeding rate of shigella decreased by 4.4 and 5.9 times in 2021 compared to 2020-2022.

The study of the antigenic structure of shigella showed that there were dominant antigenic variants in each species. Thus, among Sh.Dysenteria, almost half (53 out of 116) belonged to Serovar 1, as well as among Sh.Flexneri, more than serovar 1. In Sh.Flexneri, serovar 2a (27.9%) and serovar 6 (27.6%) were detected in more than half of the cases. Among other serovars, they stand out for (8.6%) t 2b (6.7%). An analysis of the frequency of detection of different serovars and subserovars of shigella in different years did not reveal a pronounced tendency for different serovars to increase in dynamics, although fluctuations in their specific gravity were quite high in different years. Thus, the detection rate of Sh.Flexneri subcerovar 2a ranged from 18.2 to 34.9%, subcerovar 6 from 20.3% to 40%, subcerovar 3a from 3.2% to 16.6, subcerovar 2b from 1.9% to 12.5%, and so on. The results of serotyping of diareogenic E.Coli showed that enteropathogenic E. Coli serovariants prevailed in

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our region, accounting for 90.6% of the strains; 797 strains (9.4%) belonged to serogroup 0124 (enteroinvasive E.Coli), enterotaxigenic and enteroimorogic E. Coli were not detected. Serovars 026,055,0111 (enteropathogenic E. Coli) sharply prevailed over other serovars, being found in 58.8% of the studied samples. The most common causative agents of acute diarrhoeal diseases were serogroups 055 (24.9%), 0111 specific gravity of the serogroup 0126 (6%), 020 (5,3%), 044 (4,8%) and 0151 (4.8%). The leading serovar of salmonella causing acute diarrheal diseases, S. Typhimurium, dominated in almost all years of follow-up and accounted for 91.7% of the total salmonella. In the first year of follow-up (2000-2005), S. Heidelberg (3.4%) was also detected, and later S. Enteritidis (1.7%); other serovars were sown in isolated cases and did not exceed 1% in total over 12 years. At the same time, attention is drawn to the fact that in some years some of the rare serovars dominated.

Considering that opportunistic pathogenic bacteria (UPB) are of the greatest etiological importance in acute diarrheal diseases in children, we analyzed their dynamics. A total of 14,927 UPB strains were isolated during the observation period. Of these, representatives of the enterobacteria family were 13,534 (49%); St.aureus 1316 (8.8%); the group of non-fermenting gram-negative bacteria 77 (0.5%). When considering the generic structure of the identified enterobacteria of the causative agents of acute diarrheal diseases, it was found that proteus had the highest percentage of excretion (34% of all UPB). The detection of Enterobacteriaceae (20%) and Cytrobacteriaceae (18%) was almost at the same level, and Klebsiella was sown in 14% of cases. The remaining representatives of UPB were detected less frequently from 0.1% to 2.3%. Analysis of these data in the dynamics of observation showed that there were no significant differences in the frequency of detection of various representatives of this group of bacteria.

Conclusions: A retrospective analysis of the bacteriological study of pathogens has shown that the most significant place in their etiology is occupied by UPB, mainly enterobacteria. Enteropathogenic, diarrheogenic E.Coli prevailed among pathogenic intestinal bacteria, in particular, serovars 026, 055, 0111. The specific gravity of shigella was at its lowest level and tends to decrease steadily. The establishment of the etiological factor of acute diarrheal diseases in patients living in the Southern Aral Sea region showed the following: Sh.Flexneri was sown in 80% of cases, while in 27.9% of cases it was caused by subserovars, and in 27.6% by serovar 6. Of the serovars, E.Coli were being sown 026 (11,3%), 055 (24,9%) and 0111 (22.6%) and as conditionally pathogenic enterobacteria Proteus (34%).

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