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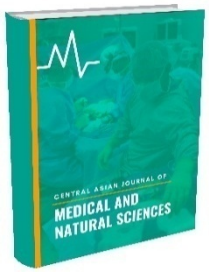

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Clinical and Epidemiological Characteristics of Shigellosis in Adults at the Contemporary Stage

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ABSTRACT: **Resume.** The persisting high incidence of acute intestinal infections requires special attention to the study of the etiological structure of their pathogens, the peculiarities of epidemiology and clinical manifestations in the contemporary period. The incidence of dysentery in the world is difficult to account due to the inaccessibility of qualified medical care, but according to careful counts from the WHO, up to 80 million cases of shigellosis occur annually, at least 700,000 of them are fatal [1,2].

Objective of the study: to determine the clinical and epidemiological characteristics of shigellosis in adults in the contemporary period.

Materials and methods: patients who applied to the regional clinical infectious diseases hospital of Samarkand city over the past 10 years served as material for the research.

Results: Subfebrile temperature was observed in 35.0% of patients, febrile - in 38.5%. The rest of the patients had normal body temperature. The duration of the fever in 69.2% of cases did not exceed 3 days, in the rest of the febrile cases it did not exceed 7 days. The duration of the febrile period from the moment of admission to the hospital was 2.15 ± 0.22 days. 41.3% of patients complained of nausea, 37.5% complained of vomiting. Vomiting was noted once in 10.6%, up to 5 times in 26.9% of patients. Headache worried about 52.9%, and dizziness was observed in 17.3% of patients, mainly of elderly age. Abdominal pain in 6.4% was persistent, in other patients with abdominal pain syndrome - cramping - and were moderate in intensity, localized in the left iliac region (43.6%), and 52.6% of patients had diffuse character and only later shifted to the left iliac region. The duration of pain syndrome in 85.9% of patients did not exceed 5 days. Defecation were accompanied by tenesmus only in 9.0% of patients, while false desires were observed in 25.0% of patients. Lean stools with mucus were in 93.3% of patients, in 50.9% - with blood streaks. Stool frequency up to 5

times a day was noted in 6.7%, up to 10 times a day in 65.4%, up to 20 times a day in 27.9% of patients. On examination, decreased tissue turgor was observed in 27.9% of patients, tachycardia was noted in 72.1%, a decrease in blood pressure was observed in 25.0% of patients, an increase in 24.0%. Spasmodic and painful sigmoid colon was palpable in 51.9% of cases.

The disease was mild in 14.2% moderate - in 34.5% severe - in 51.3% of patients. Colitis was observed in 62.5% of cases, gastroenterocolitic in 26.9% and enterocolitic in 10.6% of cases.

Conclusion:

In the contemporary period, the epidemic process with shigellosis involves mainly elderly people, more often women. The dominant causative agent of shigellosis is Shigella Flexner . The clinical features of shigellosis in the modern period are scanty stool with mucus (in 93.3% of patients), the absence of tenesmus (in 91% of patients) and, at the same time, the presence of false desires in every 4th patient. Moderate and severe course of the disease dominates (85.8%) and colitis forms of shigellosis prevail (62.5%). In peripheral blood, leukocytosis is in 67.1% of patients, however, the leukocyte formula remains neutrophilic and a stab shift is observed (12.9%).

Keywords: shigellosis, adults, diagnosis, Shigella flexneri

Relevance. The persisting high incidence of acute intestinal infections requires special attention to the study of the etiological structure of their pathogens, the peculiarities of epidemiology and clinical manifestations in the contemporary period. The incidence of dysentery in the world is difficult to account due to the inaccessibility of qualified medical care, but according to careful counts from the WHO, up to 80 million cases of shigellosis occur annually, at least 700,000 of them are fatal [1,2]. Intensive studies of clinical and pathogenetic mechanisms and methods for diagnosing dysentery are ongoing. However, many unresolved problems remain in this area. Relatively low bacteriological confirmation of dysentery necessitates further improvement of existing and development of new diagnostic methods. Dysentery has been and remains one of the most important health problems. Active antibiotic therapy and ongoing epidemiological measures do not prevent high mortality as a result of acute dysentery [3,4,5]. It should be noted that only virulent strains of dysentery, which are controlled by the invasive activity of these bacteria, are capable of attaching to the epithelial cell , penetrating it and multiplying in it. Dysentery toxins is the most common toxin in nature. Despite the increased interest in the study of dysentery and their toxins, recently its role as a virulence factor in the pathogenesis of dysentery and, especially in the development of hemocolytic syndrome, remains insufficiently studied. The solution to this problem requires in-depth informative methods to identify them.

The susceptibility of people of different age groups to shigellosis is not the same. Preschool children, in particular from 2 to 4 years old, get sick more often. An increase in the incidence is also noted in the

age group of 15 years and older. It should be noted that the degree of susceptibility to Shigella is determined by the state of the systems of local and general protection, due to factors of resistance and immunity. The dominant nosological form of shigellosis in the 70-80s of the XX century was Sonne's dysentery [2,3]. However, since the mid-90s, Sh.Flexneri predominates in the etiological structure of shigellosis [1,5]. During this period, the age structure of the population has changed, the quality of water supply and nutrition, housing and communal living conditions of people have improved, which determines the special relevance of studying of this infection. A successful fight against dysentery is possible only with close interaction of medical workers of the district network, infectious disease specialists, and the sanitary and epidemiological service.

Objective of the study: to determine the clinical and epidemiological characteristics of shigellosis in adults in the contemporary period.

Materials for research : patients who applied to the regional clinical infectious diseases hospital of Samarkand city over the past 10 years served as material for the research.

Research methods : anamnestic, clinical and laboratory.

Results: Analysis of AII disease was carried out from 2009-2019 according to the data of retrospective analysis of the case histories of patients being treated in the regional clinical infectious diseases hospital in Samarkand.

In accordance with the set goals and objectives, we carried out the research in the following directions: we studied the epidemiological, clinical and laboratory aspects of acute intestinal infections (AII).

Analysis of the long-term dynamics of the incidence of acute intestinal infections in the Samarkand region has shown that in recent years there has been a marked trend towards an increase in the incidence. One of the reasons for the increase in the incidence of diarrheal diseases was the more complete registration of patients with diarrhea. An additional factor in the increase in the registration of AII morbidity was the introduction of registration of patients with a primary and confirmed diagnosis through the ISEMIZ system, which led to improvement in registration.

Analysis of the incidence of acute intestinal infections in the Samarkand region showed: of all studied case histories of AII was Klebsiella infection (Klebsiella pneumoniae) 1.6%, protease infection (Proteus mirobilis) - 3.6%, staphylococcal infection (S tafilococcus aureus) - 2.1%, citrobacter infection (Citrobacter) - 6.6%, salmonellosis (Salmonella) - 16.4%, enterobacterial infection (E nterobacter) - 6.6 %, pseudomonas infection (Pseudomonas aerugenosa) - 4.1 %, shigella infection (Shigella) -12.8%. (picture No. 1). The rest are unidentified acute intestinal infections (52.8%).

Diagnoses were made on the basis of clinical manifestations, epidemiological data and laboratory etiological studies in the context of a standard case definition.

According to the age analysis of patients showed that 68.6% of the total number of hospitalized patients were older than 19 years. Among adults, the majority of patients were older people 19-45 years old (Figure 1). Analysis of the age structure of patients shows 19-25 years old (11.4%), 25-30 years old (29.9%), 30-40 years old (24,7%), 40-50 years old (25.6%), older 50 years (8.4%).

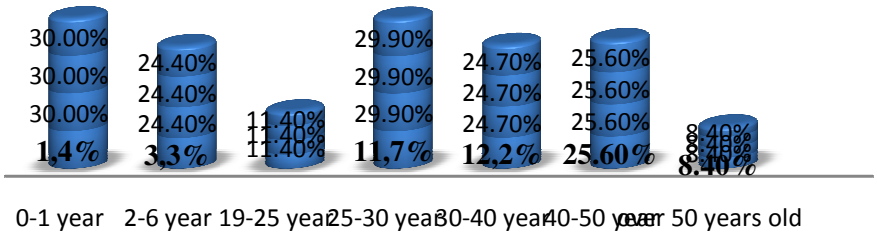

Fig. 1. Distribution of patients by age

Of the total number of examined patients in adults with a diagnosis of "Dysentery", there were 35.6% of males and 65.4% of females (Figure 2).

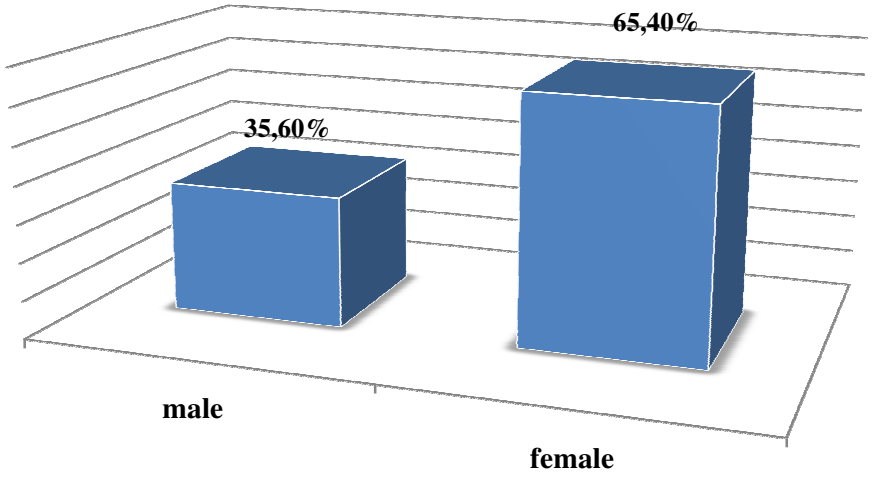

Fig 2 . Distribution of patients by sex.

We also analyzed the main place of residence of patients and established the preferential treatment of patients from the districts of the Samarkand region. There were 64.8% of rural areas residents, 35.2% of urban ones. In this regard, we analyzed the distribution of patients' referrals by districts of the Samarkand region (Figure 3).

According to the literature, shigellosis is generally observed in such localities, where there are problems with water supply. According to the authors, among shigellas Shigella flexneri is most often found in patients with poor housing and communal living conditions. Therefore in our cases the disease was often observed in patients from rural areas.

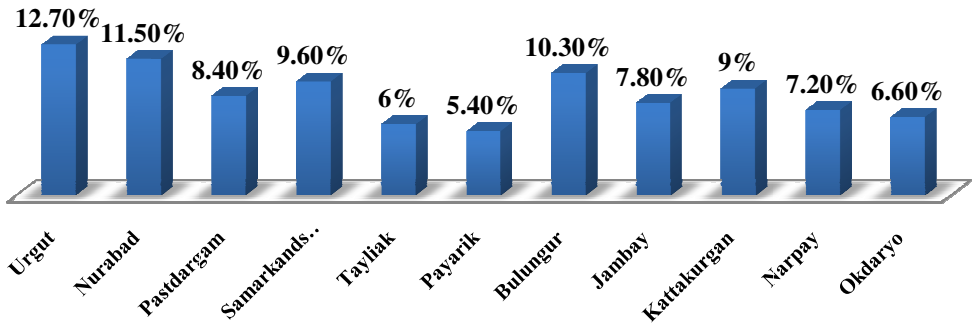

Fig 3 . Distribution of patients by place of residence

Seasonality analysis presented in the diagram below showed the preferential treatment of patients in the summer and autumn time (Figure 4). The most significant increase in the incidence was recorded from July to September. In the indicated months, 51.3% of patients were admitted. Bed days in patients were distributed as follows: within 1-3 days - 11.3% of patients, 3-5 days - 25.2%, 5-10 days - 30.5%, 10-15 days - 22.4%, over 15 days - 10.6%. In patients with complications of the disease, there was an increase in bed days (32.7%).

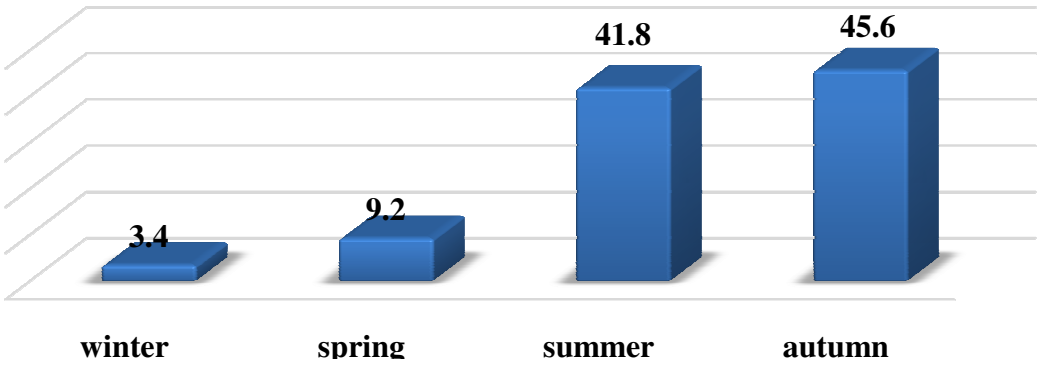

Fig 4 . Distribution of patients depending on the seasonality of the disease.

As can be seen from table No. 1, the most numerous group of patients with shigellosis was made up of traders, unemployed, rural workers, retirees living alone, that is, a low-income stratum of the population that does not always comply with the terms of sale of products, and sometimes the sanitary and hygienic conditions for their storage. Among those working at enterprises, people who ate outside the home at lunchtime were more likely to get sick.

Social composition of patients with shigellosis

Table No. 1

	Social group	%
1	Workers	18.3%
2	Farmers	5.8%
3	Students	11.5%
4	Unemployed	17.6%
5	Merchants	30.6%
6	Retirees	16.2%

Most of the patients were delivered to the RICH by ambulance teams - 31.2%, 19.2% of patients were referred by doctors of polyclinics, 1.9% were transferred from other hospitals of the city and region, and 47.7% went to the emergency room of the hospital on their own. The reason for calling the ambulance doctors was due to the acute onset of the disease, the presence of pain in the abdomen and diarrhea. Analysis of the pathways and factors of transmission of diseases showed that the food route of infection was observed in 53.8% of cases. Of the food products, fruits and other dairy products were most often assumed as a contamination factor. The cause of the disease, according to the epidemiological history, was most often the use by patients of epidemiologically dangerous dairy products, mainly sour cream - 32.2%, 12.47% due to consumption of meat products, mainly sausages. At the same time, among people of retirement age, 61.9% of patients associated their disease with the use of dairy products, and only two indicated the use of sausages. Contact with patients with dyspeptic disorders was indicated by 11.7% of patients. 12.3% of patients associated their disease with use of watermelon and melon. In other cases, the path of infection was not established. 54.9 % had an unfavorable premorbid background, including 22.2% who had frequent stool disturbances within a month before the disease. Concomitant pathology was present in 52.9% of patients. Among concomitant pathologies, ischemic heart disease prevailed 15.4%, arterial hypertension - 14.4%, diabetes mellitus - 5.8%, 2.5% of cases of chronic bronchitis, 4.5% of cases of chronic hepatitis, 3.4% of cases of cholelithiasis. disease, 6.7% of cases of colon tumors, 12.4% of cases of obesity, 8.5% of cases of pancreatitis, 3.7% of cases of chronic constipation. All patients were diagnosed with anemia (100%). Analysis of the terms of hospitalization of patients with dysentery showed that 39.9% of patients were hospitalized on the 1st day from the onset of the disease, 39.5% were hospitalized on the 2nd day from the onset of the disease, on the 3rd day from the onset of the disease, and later 20.6% of patients were hospitalized. In patients who arrived late at the hospital severe complications were noted (47.65%).

Patients were distributed according to the severity in this way (Figure 5) :

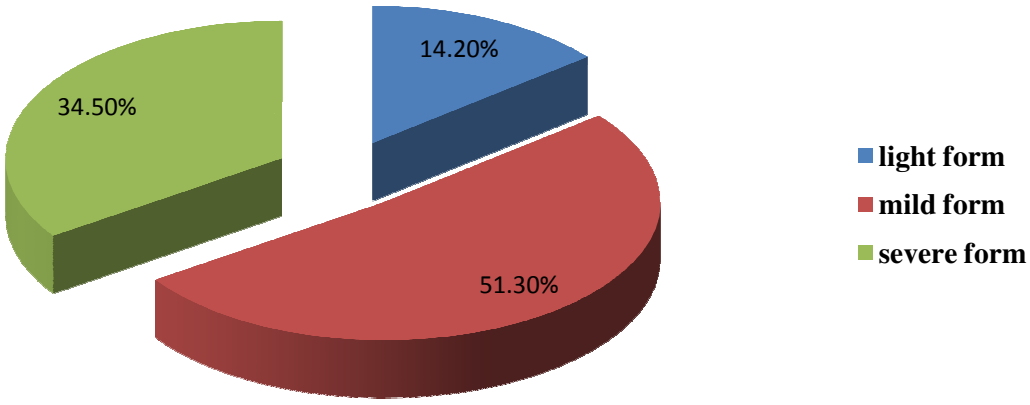

Fig 5. Distribution of patients by severity

The incubation period lasting up to 2 days was observed in 57.7% of patients, in the rest it did not exceed 5 days. Among the complaints of patients presented upon admission, the most frequent were fever (78.8%), abdominal pain (75.0%) and diarrhea (100%). Subfebrile temperature was observed in 35.0% of patients, febrile - in 38.5%. The rest of the patients had normal body temperature. The duration of the fever in 69.2% of cases did not exceed 3 days, in the rest of the febrile cases it did not exceed 7 days. The duration of the febrile period from the moment of admission to the hospital was 2.15 ± 0.22 days. 41.3% of patients complained of nausea, 37.5% complained of vomiting. Vomiting was noted once in 10.6%, up to 5 times in 26.9% of patients. Headache worried about 52.9%, and

dizziness was observed in 17.3% of patients, mainly of elderly age. Abdominal pain in 6.4% was persistent, in other patients with abdominal pain syndrome - cramping - and were moderate in intensity, localized in the left iliac region (43.6%), and 52.6% of patients had diffuse character and only later shifted to the left iliac region. The duration of pain syndrome in 85.9% of patients did not exceed 5 days. Defecation were accompanied by tenesmus only in 9.0% of patients, while false desires were observed in 25.0% of patients. Lean stools with mucus were in 93.3% of patients, in 50.9% - with blood streaks. Stool frequency up to 5 times a day was noted in 6.7%, up to 10 times a day in 65.4%, up to 20 times a day in 27.9% of patients. On examination, decreased tissue turgor was observed in 27.9% of patients, tachycardia was noted in 72.1%, a decrease in blood pressure was observed in 25.0% of patients, an increase in 24.0%. Spasmodic and painful sigmoid colon was palpable in 51.9% of cases.

The disease was mild in 14.2% moderate - in 34.5% severe - in 51.3% of patients. Colitis was observed in 62.5% of cases, gastroenterocolitic in 26.9% and enterocolitic in 10.6% of cases. Bacteriologically, the diagnosis of shigellosis was confirmed in 41.7% of cases, in other cases - clinically, epidemiologically and serologically . It is known that bacteriological confirmation of shigellosis infection is most often possible when examining patients precisely in the first days of the disease - the coproculture of the pathogen in the vast majority of cases is first isolated during the first study . Positive results of bacteriological research are observed only in the first 3 days of the disease in 45 - 49% of patients, in the first 7 days - in 75% [4,5]. According to the literature, the period of examination of patients is an important factor determining the effectiveness of the bacteriological method for diagnosing dysentery. According to T.A. Avdeeva, in the first days of the disease, the most intense excretion of the pathogen is observed in Sonne's dysentery, less intense in Flexner's dysentery . Thus, although bacteriological examination of stool is the most reliable method for diagnosing shigellosis infection, the above limitations of its effectiveness are significant disadvantages. It is also important to point out the limitations of early diagnosis by the bacteriological method, in which the duration of the analysis is 3-4 days. In connection with these circumstances, the use of other methods of laboratory diagnostics is of great practical importance. Since the bacteriological method does not reveal the pathogenic agent to 100%, this indicates the necessary optimization of the diagnosis of shigellosis at the present stage. Among the pathogens, Shigella flexneri was mainly identified . In the general analysis of blood, it was found that the leukocyte count was 6.65 * 109 / l. Moderate leukocytosis on admission was in 67.1% of patients. Most patients had neutrophilic leukocytosis with stab shift (12.9%) and an increase in ESR up to 35 mm / s (57.8%). The duration of infusion therapy was 3.2 ± 0.3 days on average, and that of etiotropic therapy was 5.7 ± 0.2 days. Stool normalization occurred on average by 7.5 ± 0.5 days, pain relief on average by 6.2 ± 1.2 days. The duration of inpatient treatment averaged 8.1 ± 0.30 days. All cases ended in recovery. Taking into account the significant increase in the incidence of acute intestinal infections, it is necessary to take measures to improve laboratory diagnostics by expanding the range of diagnostic kits used to determine bacterial pathogens (enteropathogenic bacilli, shigella , yersseniosis and others) with research. Since AII are not controlled by means of specific prevention, their distribution largely depends on the natural development of the epidemic process in certain conditions among the population (communal improvement, population migration, the level of sanitary and hygienic state of public catering establishments, food trade, etc.)

Conclusion:

Thus, the data presented show that, taking into account the widespread prevalence of dysentery, lack of sensitivity and the late appearance of positive results of many diagnostic methods, it is advisable to develop the diagnostic potential for revealing this infection. In the contemporary period, the epidemic process with shigellosis involves mainly elderly people, more often women. The dominant causative agent of shigellosis is Shigella Flexner . The clinical features of shigellosis in the modern period are scanty stool with mucus (in 93.3% of patients), the absence of tenesmus (in 91% of patients) and, at

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