

CLINICAL AND EPIDEMIOLOGICAL CHARACTERISTICS OF SHIGELLOSIS PROGRESSION IN ADULTS FROM 2009 TO 2019

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КЛИНИЧЕСКИЕ И ЭПИДЕМИОЛОГИЧЕСКИЕ ОСОБЕННОСТИ ТЕЧЕНИЯ ШИГЕЛЛЕЗА У ВЗРОСЛЫХ НА СОВРЕМЕННОМ ЭТАПЕ (2009-2019 ГГ.)

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2009-2019 YILLAR DAVOMIDA ICHBURUG'NI KATTALARDA KLINIK-EPIDEMIOLOGIK KECHISH XUSUSIYATLARI

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Сохраняющийся высокий уровень заболеваемости острыми кишечными инфекциями требует особого внимания к изучению этиологической структуры их возбудителей, особенностей эпидемиологии и клинических проявлений в современный период. Цель исследования: определить клинико-эпидемиологические характеристики шигеллеза у взрослых в современный период. В настоящее время в эпидемический процесс при шигеллёзе вовлекаются преимущественно лица пожилого возраста, чаще женщины. Доминирует среднетяжелое и тяжелое течение болезни (85,8%) и превалируют колитические формы шигеллёза (62,5%). В периферической крови лейкоцитоз у 67,1% больных, однако лейкоцитарная формула сохраняет нейтрофильный характер и наблюдается палочкоядерный сдвиг (12,9%).

Ключевые слова: шигеллёз, взрослые, диагностика, *Shigella flexneri*

Hozirgi davrda o'tkir yuqumli ichak infeksiyalari dolzarb muammoldan biri bo'lib, kasallik qo'zg'atuvchilarining etiologik tuzilishini, epidemiologiyasi va klinik ko'rinishini o'rganishga alohida e'tibor berishni talab qiladi. Tadqiqot maqsadi: hozirgi davrda kattalardagi shigellyozning klinik va epidemiologic kechish xususiyatlarini aniqlash. Bemorlarda kasallikning o'rtacha og'ir va og'irshaklda kechishi (85,8%), shigellozning kolitik shakllari (62,5%) ustunlik qiladi. Periferik qonda bemorlarning 67,1% da leykotsitoz, leykotsitlar formulasini chapga siljishi kuzatiladi (12,9%).

Kalit so'zlar: shigellyoz, kattalar, tashxisot, *Shigella flexneri*

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 shigellosis 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 [1,2,6,8]. Shigellosis 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 shigellosis [3,4,5,7,9,14]. Shigellosis toxins is the most common toxin in nature. Despite the increased interest in the study of shigellosis and their toxins, recently its role as a virulence factor in the pathogenesis of shigellosis and, especially in the development of hemolytic 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 shigellosis [2,3,11,13]. However, since the mid-90s, *Shigella* spp - Flexneri predominates in the etiological structure of shigellosis [1,5,10,15]. A successful fight against shigellosis 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.

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. 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 mirabilis*) – 3,6%, staphylococcal infection (*Staphylococcus aureus*) – 2,1%, citrobacter infection (*Citrobacter* spp) – 6,6%, salmonellosis (*Salmonella* spp) – 16,4%, enterobacterial infection (*Enterobacter* spp) – 6,6 %, pseudomonas infection (*Pseudomonas aeruginosa*) – 4,1 %, shigellosis (*Shigella* spp) -12,8%. The rest are unidentified acute intestinal infections (52,8%).

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%) (Figure 1).

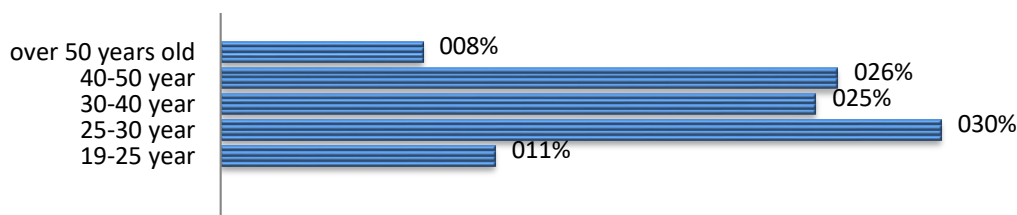


Fig. 1. Distribution of patients by age

Of the total number of examined patients in adults with a diagnosis of "Shigellosis", there were 35,6% of males and 65,4% of females (Figure 2).

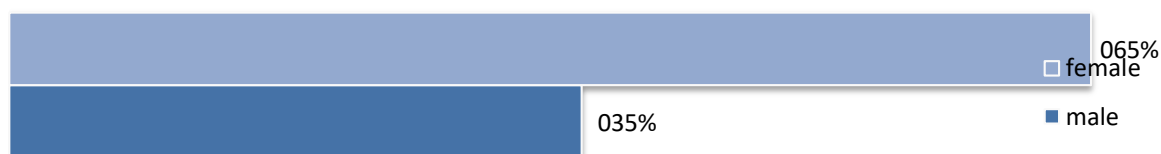


Fig 2. Distribution of patients by sex.

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. 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%).

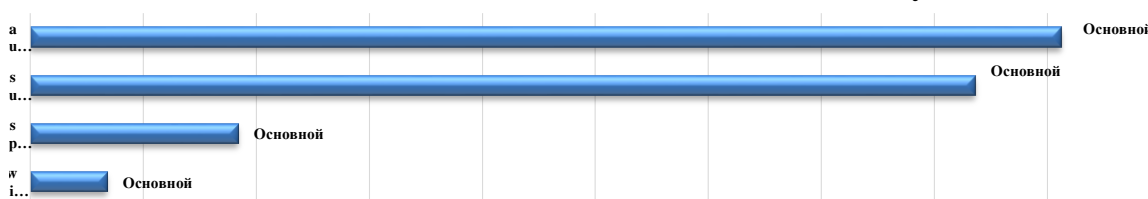


Fig 4. Distribution of patients depending on the seasonality of the disease.

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.

Table No. 1 Social composition of patients with shigellosis

	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 shigellosis 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):

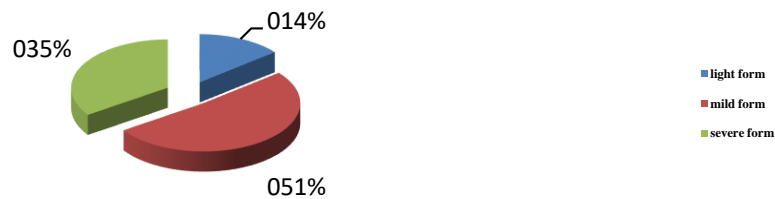


Fig 5. Distribution of patients by severity

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%) and diarrhea (100%). Subfebrile temperature was observed in 35% of patients, febrile - in 38,5%. 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 $2,15 \pm 0,22$ 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. The duration of pain syndrome in 85,9% of patients did not exceed 5 days. Defecation were accompanied by tenesmus only in 9% of patients, while false desires were observed in 25% 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.

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. 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 Shigellosis. According to T.A. Avdeeva, in the first days of the disease, the most intense excretion of the pathogen is observed in Sonne's shigellosis, less intense in Flexner's shigellosis. 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* spp - *Shigella flexneri* was mainly

identified. In the general analysis of blood, it was found that the leukocyte count was $6,65 \cdot 10^9/l$. 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 $3,2 \pm 0,3$ days on average, and that of ethiotropic therapy was $5,7 \pm 0,2$ days. Stool normalization occurred on average by $7,5 \pm 0,5$ days, pain relief on average by $6,2 \pm 1,2$ days. The duration of inpatient treatment averaged 8.1 ± 0.30 days. All cases ended in recovery. 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:

The dominant causative agent of shigellosis – *Shigella* spp - *Shigella Flexneri*. 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%).

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