



Study of the Epidemiological, Clinical and Laboratory Features of Hiv Infection in Children

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Abstract: HIV infection is the causative agent of chronic infectious immunodeficiency diseases. HIV infection in children and adolescents is becoming relevant in many countries of the world. Given the unfavorable course of HIV infection in pediatric patients, and the rapid transition to AIDS with the development of a fatal outcome, it is necessary to study and timely diagnose the disease. The purpose of the study was to study the clinical, epidemiological and laboratory characteristics of HIV infection in children, taking into account secondary diseases and opportunistic infections. We studied seropositive children under the age of 15 who were in the Samarkand regional infectious diseases hospital in 2019. The need for this research was dictated by the demands of practical health care in order to optimize the diagnosis, treatment and prevention of opportunistic diseases, taking into account the clinical and epidemiological characteristics of their course.

Keywords: Opportunistic infections, enzyme immunoassay, immunoblotting, children, HIV infection.

Introduction. The AIDS epidemic is not only a national health problem, but it also has extraordinary consequences for the well-being and safety of society. (Lenok G.V. 2009). There are over 40 million HIV-infected people in the world, including 2.7 million children under the age of 15 (Dushina L.V. 2020. 2). The prevalence of HIV infection in the Republic of Uzbekistan is at a concentrated stage of its development. According to the Agency for Sanitary and Epidemiological Welfare under the Ministry of Health of Uzbekistan, according to the latest data and calculations of specialists as of December 1, 2019, more than 41,000 people are living with HIV infection in the republic. The almost full coverage of pregnant HIV-infected people by the state programs today makes it possible to keep the share of vertical transmission of HIV at a stable low level. The adverse course of HIV infection in pediatric patients and the rapid progression to AIDS with lethal outcome dictate the need for timely diagnosis of the disease based on a comprehensive account of epidemiological history, clinical and laboratory examination data. Thus, HIV infection is an urgent problem of infectious diseases worldwide.

Keywords: HIV infection, children, Samarkand, AIDS

Objective of the study. Study of clinical, epidemiological and laboratory features of the course of HIV infection in children according to the materials of the regional clinical infectious hospital for 2019 in Samarkand region.

Materials and Methods: The material for the study and analysis were the case histories of seropositive children who were treated in the regional infectious diseases clinical hospital for 2019. For all patients with HIV infection, general clinical, laboratory tests (general blood analysis, urinalysis, feces), expanded blood biochemical analysis, hepatitis B and C marker tests, ELISA diagnostics for HIV infection were performed. Among non-specific methods, immunological

research was conducted to determine the absolute number of CD4+ lymphocytes, which was conducted in the regional AIDS center of Samarkand city. The fact that all the examined children were HIV-positive was confirmed by ELISA, using a MRW AM60 and Voshier 203 reagent multiresponder, and by immunoblotting on an Elmi-ST-3 thermostatically controlled shaker. Immunoenzymatic analysis was performed on the equipment of Ridertechnologies (USA). HIV viral load was investigated by determining the level of HIV RNA in plasma blood by PCR on Vortex Rotergi MonitorTest test systems from Hoffman-LaRoche. The study of immune status indicators included determination of cellular and humoral immunity parameters, as well as the phagocytic component. The diagnoses of HIV-infection and opportunistic infections were established on the basis of Order No. 277 of the MHRAU, 2018.

Study Results. All patients were referred from the regional AIDS center with a diagnosis of B 20 based on confirmed specific IB tests (+). The results of the study showed a predominance of the disease in girls (64%), compared to boys (36%). The number of patients who applied from the city was 44%, district 56%. The number of organized children 52%, unorganized 48%. Epidemiological history of the course of HIV infection in this category of patients was used. The main routes of transmission: 1) Parenteral (72%): blood and plasma transfusion (44%), parenteral intervention (20%), surgery (8%). 2) Implicit route of transmission (20%). 3) Vertical route of transmission (8%).

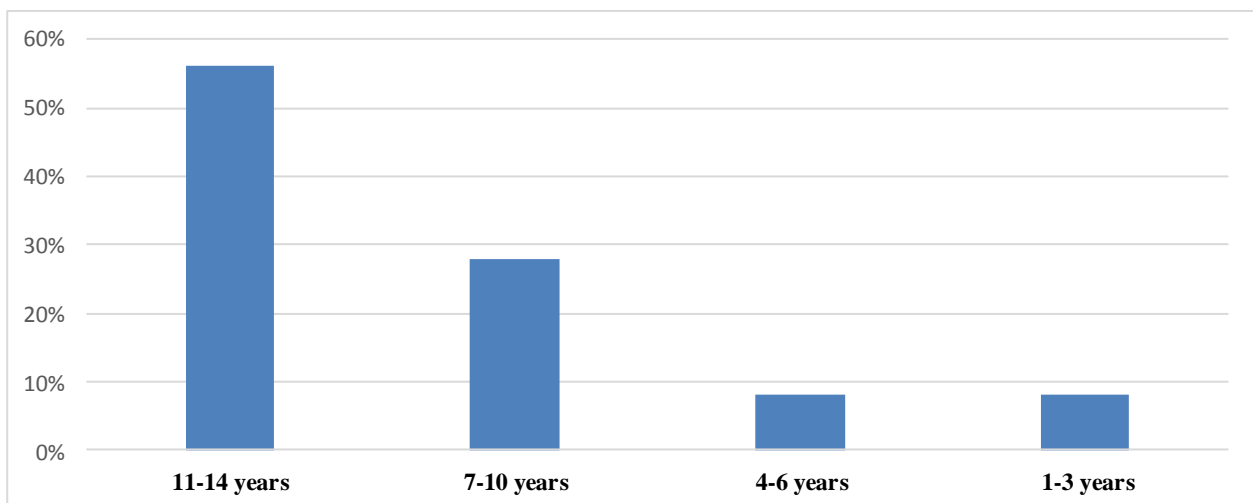


Fig.1. Distribution of patients by age category

In the distribution of patients in Figure 1 by age category, we found that the high level of the morbidity rate falls on the age of 11 to 14 years - which amounted to (56%) of patients. (Fig. 1).

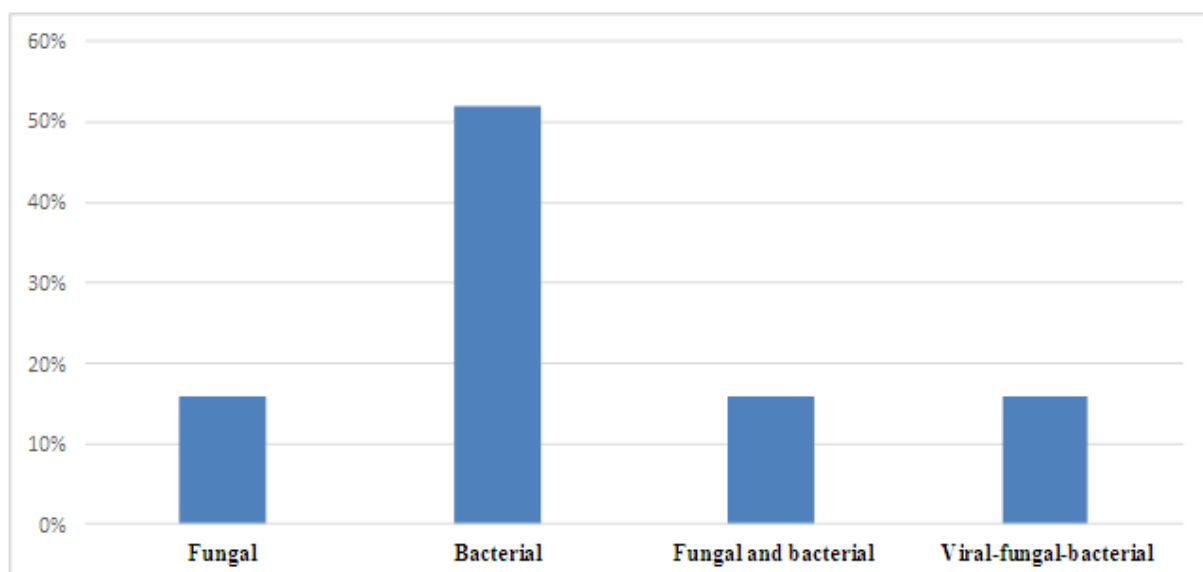


Fig. 2. Distribution of patients by etiological structure

Analysis of the distribution of patients by etiology showed a high level of patients with opportunistic infections of bacterial etiology, which amounted to (56%) (Fig. 2).

The diagnoses of HIV infection and opportunistic infections were established on the basis of the order Volume 1 "On the implementation of national clinical protocols for HIV infection". On admission to the hospital, the patient's complaints were evaluated, life and medical history, objective data, and laboratory examination were carefully collected. The leading complaints on admission were fever syndrome in 100% of patients, asthenic syndrome was also observed in all admitted patients, lymphadenopathy syndrome was observed in 92.3% of patients, hepatosplenomegaly syndrome was observed in 44% of patients, chronic fatigue syndrome was observed in 88% of patients. All 25 patients were admitted to the hospital with varying degrees of fever (37.2- 40 C).

When distributing patients according to diagnoses according to the order No. 277 of the Ministry of Health of the Republic of Uzbekistan, 2018, it was established that 64% of patients were admitted in the 3rd clinical stage, 36% were admitted in the 4th clinical stage.

Of the 64% of patients, 43.7% were admitted with a diagnosis of B 20 stage 3. Chronic bacterial respiratory infection. Bronchitis. Unexplained eating disorders of moderate severity. 25% were admitted with a diagnosis of B 20 stage 3. Candidiasis stomatitis. Unexplained eating disorders of moderate severity. 31.2% were admitted with a diagnosis of B 20. Stage 3. Acute gastroenteritis. Unexplained eating disorders of moderate severity. Of the 36% of patients, 44% were admitted with a diagnosis of B 20. Stage 4. Candidiasis stomatitis. Recurrent diarrhea. Unexplained severe malnutrition. 33.3% admitted with a diagnosis of B 20. Stage 4. Chronic diarrhea. Unexplained severe malnutrition, marked eating disorders. 11% were admitted with a diagnosis of B 20. Stage 4. Chronic bronchitis. HIV encephalopathy. Unexplained severe malnutrition. 11% were admitted with a diagnosis of B 20. Stage 4. Chronic viral hepatitis C. Chronic pyelonephritis. Unexplained severe wasting.

Analysis of body weight deficit showed that weight below 10% was noted in 32% and above 10% in 48% of patients. Severe weight deficit with cachexia was noted in 20% of patients. The number of SD4+ lymphocytes in children is normally 1500 cells per ml. In 48% of patients there was a decrease in this indicator from 633 to 567 cells, in 28% of patients from 567 to 143 cells, and in 24% of patients below 143 cells. The study of peripheral blood hemoglobin showed: 100-90 g/l was noted in 44% of patients, 90-80 g/l in 28%, 80-70 g/l in 20%, 70 g/l or lower in 8% of patients. A study of the number of lymphocytes showed: 50-40% in 60% of patients, 40-30% in 16%, 30-20% in 14%, 20% or lower in 8% of patients.

The patients were discharged from the hospital after their general condition had improved; 80% of 25 patients were discharged in a relatively satisfactory condition, 8 % of them were transferred to other medical institutions, 8% left the hospital on their own, and 4% were taken home in a critical condition.

Conclusions

Analysis of the dynamics of HIV prevalence among patients shows an increase in the proportion of district children. The results of the study showed a predominance of the disease in girls. The distribution of patients by age category revealed a high incidence rate for the age of 11 to 14 years. Patients with opportunistic infections of bacterial etiology prevailed in the diagnosis by etiology.

Mainly unorganized children were admitted. The main route of transmission: Parenteral

The distribution of patients according to diagnoses revealed that the number of admissions at clinical stage 3 was greater. There were no cases in stages 1 and 2. Patients admitted in clinical stage 3 had unexplained eating disorders of moderate severity. Patients admitted in clinical stage 4 were accompanied by unexplained severe malnutrition. When examining the parameters of body weight deficit, the majority of the admitted patients appeared to be above 10%. Study of hemoglobin in peripheral blood showed: The majority of patients had polydeficit anemia of degree 1-2.

Given the unfavorable course of HIV infection in pediatric patients, there is a need for timely diagnosis of laboratory markers of opportunistic infections.

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