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Clinical Aspects of Herpes Infection in Hiv-Infected Children

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KEYWORDS

HIV-infected children, herpes infection.

ABSTRACT:

This article presents the clinical aspects of herpes infection in HIV-infected children. A clinical examination of 57 children aged 4 to 15 years was conducted, 41 (71.93%) were boys and 16 (28.07%) were girls. The children were distributed by age as follows: 34 (59.65%) children aged 4 to 6 years, 13 (22.81%) children aged 6 to 10 years, and 10 (17.55%) children aged 10 to 15 years. The results of the study showed that the simultaneous action of such unfavorable factors as early age at the time of infection, concomitant diseases with the formation of complications, with the progression of immunodeficiency worsened the course of the disease in infected children, and led to a severe, continuously recurring course of herpes infection in HIV-infected children, especially young children.

Introduction

According to the World Health Organization, diseases caused by the herpes virus are the second most common cause of death (15.8%) after influenza and acute respiratory infections (35.8%). It should be noted that almost a third of the world's population is affected by herpes infection and 50% of them experience relapses of the disease annually due to the lack of immunity against it [21]. Herpes infection and especially its combination in patients with HIV/AIDS remains particularly relevant in modern society. Herpes viruses are widespread in the human population, they are capable of affecting almost all organs and systems of the host organism, causing latent, acute and chronic forms of infection. The cytopathogenic effect of herpes viruses is enhanced by immunodeficiency states. Herpes viruses can activate HIV, which is in the provirus stage, and are a cofactor in the progression of HIV infection and AIDS. In this regard, herpes infection (HI) is one of the important AIDS-indicating diseases. Currently, AIDS ranks third in the world in the group of fatal outcomes after cardiovascular diseases and neoplasms, and is the main cause of death among children with HIV/AIDS [2,65].

Objective: To study the characteristics of the course of herpes infection in HIV-infected patients.

Materials and research methods.

To achieve the set objectives, we conducted a clinical examination of herpes infection in 57 HIV-infected children aged 4 to 15 years, 41 (71.93%) were boys and 16 (28.07%) were girls. The comparison group consisted of 23 HIV-infected children and children without herpes infection of the same age. Primary diagnostics of HIV: a) Determination of antibodies to the human immunodeficiency virus was carried out in the laboratory of the Republican AIDS Center of the Ministry of Health of the Republic of Uzbekistan. Verification of the diagnosis of HIV infection was carried out in accordance with the National Protocol of the Republic of Uzbekistan, No. 117 dated March 17, 2005. Antibodies to the human immunodeficiency virus were detected twice by the enzyme immunoassay method using the Peptoscreen test systems (Russia) in the city AIDS laboratory at the place where the patient was identified. Then the results were

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confirmed for detection of antibodies to structural proteins of HIV by the method of immune blotting using the test systems "Biotek" Cambridge, USA. The principle of the ELISA method. The ELISA method is based on the determination of total antibodies to HIV in the blood serum. c). The ELISA method determined antibodies to the herpes simplex virus (HSV) and CMV Research Institute of Virology of the Ministry of Health of the Republic of Uzbekistan; d). The ELISA method determined CD 4 + cells.

Results of research and discussion.

As HIV infection progresses, the severity of herpes lesions worsens, which requires timely diagnosis and therapeutic antiviral therapy. To achieve the objectives, we conducted a clinical examination of herpes infection in 57 HIV-infected children aged 4 to 15 years, including 41 boys (71.93%) and 16 girls (28.07%). The comparison group consisted of 23 HIV-infected children, children without herpes infection, of the same age. By age, the children were distributed as follows: from 4 to 6 years old - 34 (59.65%) children, from 6 to 10 years old - 13 (22.81%) and from 10 to 15 years old - 10 (17.55%) children. The results of the study showed that herpes simplex types 1 and 2 occurred in 59.65–80.71% of HIV-infected patients without herpes infection, causing mucocutaneous ulcerative lesions and diseases of the nervous system. Herpes zoster is observed in 15.79–31.58% of patients with HIV infection and is one of the early markers of immunosuppression. Clinical and serological studies made it possible to diagnose the primary form of herpes simplex in 26 (45.61%) patients with HIV infection and reactivation in 31 (54.39%). The primary form of herpes simplex occurred in the form of fever, adenopathy, painful ulcerative lesions mainly of the mucous membranes of the oropharynx, lips and skin. Examination revealed hyperemia of the mucous membrane and pharyngeal edema. The vesicles that appeared on the oral mucosa and lips quickly increased in number and ulcerated, sometimes becoming widespread, affecting not only the lips but also the cheeks. In the reactivation stage, 54.39% of patients had the same but more pronounced herpes infection symptoms. The following forms were identified in the structure of recurrent herpes infection: chronic recurrent orofacial herpes (OFH) - in 28 (49.13%) children, chronic recurrent cutaneous herpes (CH) - in 56 (98.25%), chronic recurrent ophthalmic herpes (OH) - in 48 (84.21%). When analyzing the anamnestic data, it was revealed that 75.44% of the mothers of the examined children suffered from GGI in the form of cutaneous herpes, genital herpes, ophthalmic herpes. In 45.62% of cases, the disease was observed in the family. During pregnancy, reactivation of latent infection was observed in 50.88% of cases in mothers. Manifestation of herpes infection was noted in children aged (4.7±0.7) years, including with the development of OFG in 28.07% of cases, cutaneous form in 70.18% of cases. The disease mainly proceeded in mild (40.35%) and moderate (43.86%) forms. Patients with mild OFG against the background of HIV infection complained of itching, burning in the lip area, a small number of vesicles. Primary infection was characterized by the development of vivid symptoms with the formation of intoxication (82.46%) and lymphadenopathic (75.44%) syndromes. During OFG, relapses of the disease were noted less frequently, but when a relapse occurred, the rash was more abundant. During OFG, patients had a significant percentage of concomitant lung and liver diseases; in patients with HG, sexually transmitted infections, including the "second generation" (chlamydia, gardnerellosis, mycoplasmosis), were recorded in the structure of other diseases in 33.3-45.5%. When studying laboratory tests in patients with frequently recurring herpes, a slight increase in the number of erythrocytes was revealed during OFG [(4.18±0.07)x1012/l versus (4.50±0.11)x1012/l during exacerbation]. At the same time, an increase in ESR to 12.08-15.22 mm/hour was noted, as well as a slight increase in segmented neutrophils and monocytes during OFG.

The results of the study showed that children under 6 years of age were significantly more likely to have OFG, amounting to 35.9% versus 14.04% in the group of children aged 7 to 15 years ($p < 0.05$), and in children aged 7 to 15 years - OH (35.09% and 12.28%), $p < 0.05$). In both groups, the predominant form of recurrence was cutaneous herpes (52.64% and 49.13%, respectively). The provoking factors for the development of relapses of the infection were hypothermia in 61.41% of cases, insolation in 8.78%, psychoemotional stress in 3.51%, acute respiratory viral infections in 57.90%, mechanical trauma to the mucous membranes in 7.02%, and exacerbation of allergic dermatosis in 8.78% of cases (Fig. 1).

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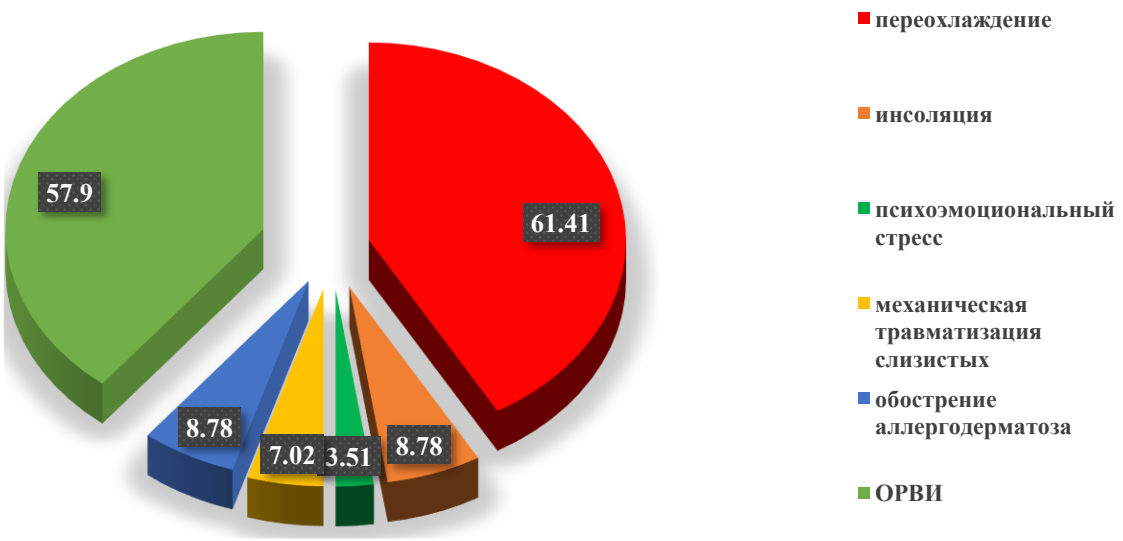

Fig. 1 Provoking factors for the development of relapses of herpes infection in HIV-infected children, n=57.

Mild course of RGI 14 (24.5%), OFG was formed more often in the group of children aged 7 to 15 years 11 (78.58%) ($p < 0.05$), in children under 6 years 3 (27.28%), the duration of relapses in children under 6 years was significantly higher ($p < 0.05$) than in the group of children aged 7 to 15 years. The terms of epithelialization in both groups did not differ. With mild course of RGI, CG was noted in 5 (35.71%) children under 6 years and 3 (21.43%) in the group of children aged 7 to 15 years. Intoxication manifestations in the group of children aged 7 to 15 years were absent, the frequency and duration of relapses did not have statistically significant differences in both groups. The relapse rate was 4-6 times a year in 6 (42.86%) children under 6 years of age and 5 (35.71%) in the group of children aged 7 to 15 years. Intoxication manifestations were more often observed in children in the group of children under 6 years of age ($p<0.05$). In both groups, an increase in regional lymph nodes was equally often noted. Moderate-severe course of OFGRGI was observed with the same frequency in both groups (57.15% and 42.86%). Severe course of CG RGI was registered in children under 6 years old 19 (86.37%), including continuously recurring in 2. Moreover, relapses were observed 6 or more times a year, on average (7.6 ± 4.8) times. The period of extinction was (8.6 ± 2.2) days. Intoxication syndrome was stopped on the (3.4 ± 1.5) day. Epithelialization of elements was delayed up to (10.3 ± 5.4) days. Severe course of herpes of the skin RGI was noted in 36.5% of children in the group from 7 to 15 years old with a relapse frequency of (6.5 ± 3.7) times a year. In 28% of children under 6 years of age with severe course of OFG, the relapse rate was (7.2±3.4). The duration of remission was (2.7±0.8 and 2.5±0.4) months, the duration of relapse was (9.7±1.6 and 11.2±2.4) days in both groups, respectively. Subjectively, all children in this group had general malaise, lymphadenopathy, headache.

Conclusions.

The results of the study showed that the simultaneous action of such unfavorable factors as early age at the time of infection, concomitant diseases with the formation of complications, with the progression of immunodeficiency worsened the course of the disease in infected children, and led to a severe continuously recurring course of herpes infection in HIV-infected children, especially young children.

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