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Effectiveness of Antiprotozoic Therapy in Hiv Infection with Intestinal Parasites

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Annotation: This study investigated the effectiveness of antiprotozoal therapy in cases of HIV infection with intestinal parasitosis. For the study, 70 HIV-infected patients who applied for treatment to the Samarkand Regional Infectious Diseases Hospital and the Samarkand Regional AIDS Control Center in 2023-2024 were recruited. The patients studied were divided into 2 groups: 40 patients with HIV infection + intestinal parasitosis (intestinal giardiasis, amebiasis, blastocystosis) formed group I (main group) and 30 patients with HIV infection who did not have intestinal parasitosis during the examinations formed group II. This study used general clinical: patient complaints, history and objective; laboratory: coproovoscopy, serological and molecular genetic methods. According to the results of the study, HIV infection causes more dyspeptic symptoms in patients with intestinal parasitosis. Laboratory indicators show an increase in the number of eosinophils. It negatively affects the immune system of patients, causing a decrease in the number of CD4+ lymphocytes. In patients taking anti-intestinal drugs on the background of ART, a positive change in these indicators is observed.

Keywords: HIV infection, intestinal parasites, antiresroviral therapy, antiprotozoal therapy.

HIV infection is a chronic viral infection that primarily affects the immune system, causing opportunistic infections and tumors, and can result in death [5]. Giardiasis, enterobiasis, and blastocystosis are the most common parasitic diseases in Central Asia. They are sometimes found in mixed forms and mainly cause gastrointestinal disorders [10]. Giardia parasitize in the intestines, disrupting the structure and function of the small intestine, resulting in recurrent or acute symptoms, such as pain, dyspeptic, and asthenovegetative symptoms. Using rational diagnostic tests, it is possible to timely detect giardiasis and achieve proper treatment [4]. One of the most widespread intestinal parasitic diseases is blastocystosis, which has become one of the main problems due to the increasing number of patients with HIV infection. Because with a decrease in immunity, blastocysts multiply rapidly and cause damage to the digestive system [6].

Current during HIV infection of treatment only method - high active is antiretroviral therapy (YuFART) [8]. One after YuFART started to be used row opportunistic diseases with illness sharp decreased and with HIV infection sick of patients life quality improved and extended life [12]. Available with HIV in the literature sick in patients There is insufficient information on the use of parasitotherapy.

The purpose of the study: Effectiveness of antiprotozoal therapy in HIV infection with intestinal parasites to study.

Research object. For the study, 70 HIV-infected patients who applied for treatment to the Samarkand Regional Clinical Hospital for Infectious Diseases and the Samarkand Regional AIDS Center during 2023-2024 were recruited.

The patients studied were divided into 2 groups: Group I (main group) consisted of 40 patients with HIV infection + intestinal parasitosis (intestinal giardiasis, amebiasis, blastocystosis) and 30 HIV-infected patients who did not have intestinal parasitosis during examinations formed group II (Table 1).

Table 1. General description of HIV-infected patients studied

Index	Group I HIV-infected patients with intestinal parasitosis, n=40		Group II HIV-infected patients without intestinal parasitosis, n=30	
	ART (+) n=20	ART (-) n=20	ART (+) n=15	ART (-) n=15
Male	11 (55.0%)	12 (60.0%)	8 (53.3%)	8 (53.3%)
Woman	9 (45.0)	8 (40.0%)	7 (46.7%)	7 (46.7%)
Clinical stage of HIV infection				
Clinical phase I	1 (5.0%)	-	1 (6.7%)	-
Clinical phase II	5 (25.0)	4 (20.0%)	6 (40.0%)	6 (40.0%)
III - clinical stage	14 (70.0%)	16 (80.0%)	8 (53.3%)	8 (53.3%)
IV -clinical phase	-	-	-	1 (6.7%)

Group I consists of 40 (100%) patients, 20 (50%) of whom are receiving antiretroviral therapy (ART) and 20 (50%) of whom are not receiving ART, and group II consists of 30 (100%) patients, 15 (50%) of whom are receiving ART and 15 (50%) of whom are not receiving ART. The groups are comparable in terms of indicators.

patients in group I were given anti-intestinal parasite medications on the background of ART.

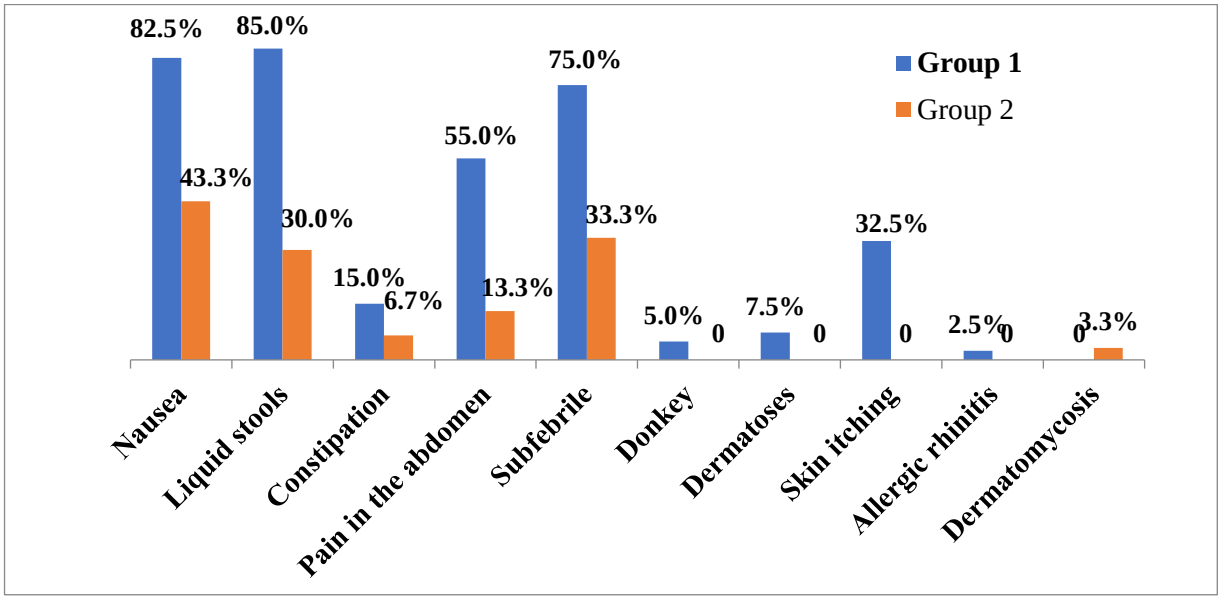
Research methods. This study used general clinical methods: patient complaints, anamnesis and objective examination. Patients were diagnosed with HIV infection based on immunoenzyme analysis and immunoblot analysis at the Samarkand Regional AIDS Center in accordance with the Order of the Ministry of Health No. 277 dated April 30, 2018. Blood serum (plasma) was taken as the research material.

CD4 + cells (T-lymphocytes) in the blood was determined by cytofluorimetry using the Becton Dickinson FACS Calibur cytometer technology. The amount of HIV RNA (viral load) in the blood plasma was determined using the "Votex Rotergi Monitor Test" test system. Parasitic invasion was determined by coproovoscopy (native/large drop by the Kato and Miur method) and the formalin ether sedimentation method of feces. The amount of immunoglobulin E in the blood serum was determined by ELISA.

Microsoft Excel was used to statistically analyze the research results .

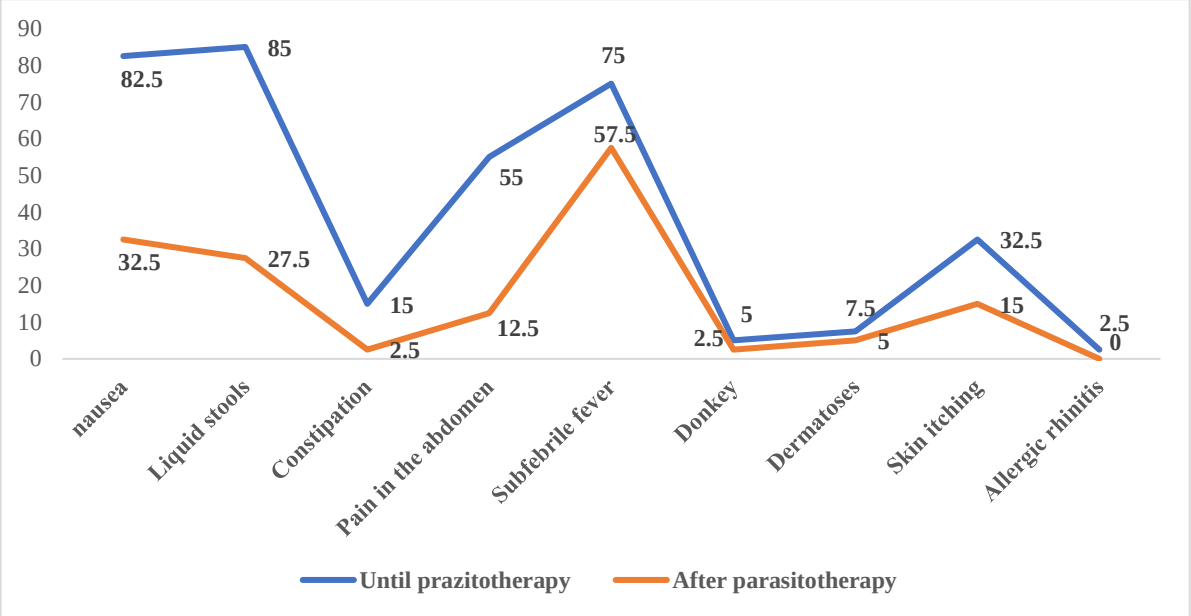
Results of the study: In the mixed form of HIV infection with intestinal parasitosis in group 1, 84.6% of patients experienced nausea, diarrhea or constipation, epigastric, peri-umbilical, and left iliac pain. Subfebrile temperature was observed in 75.0% of patients in this group.

In group 2, patients with HIV infection had 2 times less complaints of monoinfection, subfebrile fever 33.3% and 2.5 times less than in the comparison group. Allergic symptoms are also typical for intestinal parasitosis, urticaria in 5.0% of patients, dermatosis in 7.5%, skin itching in 32.5%, and allergic rhinitis in one patient. Dermatomycosis was detected in only one of the patients of group 2 (Fig. 1):



1. Clinical signs observed when HIV infection is accompanied by intestinal parasites

When patients in the control group were given an anti-parasitic drug - metronidazole on the basis of the scheme against the background of ART, it was found that the occurrence of clinical symptoms of the disease was significantly reduced (Figure 2).



2. Clinical signs observed before and after antiparasitic therapy in patients with HIV infection and intestinal parasites

Laboratory tests revealed eosinophilia in 65.0% of patients not receiving ART in the group of HIV-infected patients with intestinal parasites, 62.5% of patients receiving ART, and 23.3% of patients in the group without intestinal parasites. In the group of HIV-infected patients without intestinal parasites, eosinophilia was not detected in patients receiving ART.

The laboratory indicators described above are presented in the following table (Table 2).

Table 2. Indicators of laboratory analyses

Indicators	Group I HIV-infected patients with intestinal parasitosis, n=40		Group II HIV-infected patients without intestinal parasitosis, n=30	
	ART (+) n=20	ART (-) n=20	ART (+) n=15	ART (-) n=15
Hemoglobin (g/l)	92.6	89.2	1 12 , 4	93.2
Erythrocytes (10^{12} / l)	3.2	3.04	5.0	3.8
Leukocytes (10^{9} / l)	6 , 8	5.6	6.2	5.18
Lymphocytes (10^{9} /l)	1.8	1.2	1.5	1.3
Neutrophil (10^{9} /l)	3.42	2.86	4.06	4 , 06
Basophils (10^{9} /l)	0.0 3	0	0.0 2	0.02 *
Eosinophils (10^{9} /l)	4 , 3	5,26	4.1*	2.24*
Platelets (cells / µL)	182.6	178.4	196.4	2 14.8
ESR (mm/ hour)	11 , 8	9.8	10.6	1 1 , 6

*Note: * - confidence difference between HIV-infected patients with and without intestinal parasites is <0.05*

No significant difference was found between study groups in general clinical laboratory parameters (except for eosinophils).

In patients receiving antiparasitic drugs on the background of ART, a difference was found between laboratory indicators of anemia and eosinophils. Cases of increased numbers of CD4 + cells were detected (Table 3).

Table 3. Indicators of laboratory analyzes before and after parasitotherapy

Indicators	Until parasitotherapy	After parasitotherapy
Hemoglobin (g/l)	92.6	1 08 , 3
Erythrocytes (10^{12} / l)	3.2	3.6
Leukocytes (10^{9} / l)	6 , 8	7 , 6
Lymphocytes (10^{9} /l)	1.8	1, 8
Neutrophil (10^{9} /l)	3.42	4 , 12
Basophils (10^{9} /L)	0.0 3	0.02
Eosinophils (10^{9} /L)	0, 3	0, 5
Platelets (vials / μL	182.6	216 , 2
ECHT (mm / h	11 , 8	9 , 14
C D 4 + hujairalar (1 mL/h)	216–393	348–568

During the registration of patients, the number of T-lymphocytes (T-helpers) with CD4+ receptors was determined in HIV-infected patients. The number of CD4 + lymphocytes in the main group of HIV-infected patients with intestinal parasites was 216-393 cells per ml of blood, while in HIV-infected patients without intestinal parasites this figure was 446-567 cells per ml of blood.

of CD4 + lymphocytes was 262-501 cells per ml of blood 1 month after treatment . In patients receiving antiparasitic drugs on the background of ART, the number of CD4 + lymphocytes was 348-568 cells per ml of blood.

Conclusion. Thus, intestinal parasites cause more dyspeptic symptoms in HIV-infected patients. Laboratory indicators lead to an increase in the number of eosinophils. They negatively affect the immune system of patients, causing a decrease in the number of C D 4 + lymphocytes. In patients receiving anti-intestinal drugs on the background of ART, a positive change in these indicators is observed.

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