

RESEARCH NOTE

Intestinal Parasites in AIDS and +HIV Patients in Uberlândia, Minas Gerais, Brazil

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In spite of biomedical advances, parasitic disease continues to exist and represent an example of complex interaction between parasite and host (OPAS 1985, publicación 1). Many patients infected by the Human Immunodeficiency Virus (HIV) because of their sexual practices, are predisposed to enteric infections as well as to traditional sexually transmitted diseases (SC Phillips et al. 1981 *N Engl J Med* 305: 603-606). Intestinal parasites in HIV infected patients, have been reported mainly in USA and Africa (PD Smith et al. 1988 *Am Inter Med* 108: 328-333, BE Laughon et al. 1988 *Gastroenterol* 94: 984-993, MA Gomez Moraes et al. 1995 *Trop Med Parasitol* 46: 109-114).

In Brazil, the occurrence of intestinal parasites in HIV patients was reported particularly in the states of Rio de Janeiro and São Paulo (JR Coura 1987 *J Bras Med* 53: 42-54, RMDS Dias et al. 1988 *Rev Inst Adolfo Lutz* 48: 63-67, H Moura et al. 1989 *Mem Inst Oswaldo Cruz* 84: 527-533, RMDS Dias et al. 1992 *Rev Inst Med Trop São Paulo* 34: 15-17).

This study was undertaken to contribute to the knowledge of the occurrence of intestinal parasites in AIDS and +HIV patients in Uberlândia, in the

State of Minas Gerais, Southeast region of Brazil. A retrospective analysis of medical files was made of 291 patients who were attended in the Infirmary of Infectious and Parasitic Diseases of the Clinical Hospital at Federal University of Uberlândia (HC-UFU), during the period of January 1990 to December 1994. Of these patients 238 were AIDS patients and 53 were +HIV. Files of attended patients (897) were analyzed as a control group in the Clinical Medical Ambulatory of HC-UFU and all these patients did parasitologic examination in feces in the same period. The data was randomly considering the total number of patients month by month during the work period. The results were obtained through the examination of feces and submitted to statistical analysis following a normal distribution curve. The group of AIDS patients was compared to the +HIV and control group adopting a level of alpha significance equal to 0.05 (5%).

The fecal material of the 1,188 patients was collected in plastic flask, containing 10ml of MIF, for the realization of the method of MIFC. In the cases of 108 patients with AIDS and diarrheic feces, 10ml of formol 40%, was also used to research of *Cryptosporidium* sp. or *Isospora belli* by Kinyoun coloration. The methods of MIFC and coloration were both made in the laboratory of clinical analysis of HC-UFU (Baermmann-Moraes method is not a routine in this laboratory).

As result of this research 39 (16.4%) patients were diagnosed with parasites in the AIDS group; of these, 78.9% were male and 21.1% were female. Their ages varied between 4 and 60 years; 94.7% were from the State of Minas Gerais and 5.3% from the State of São Paulo.

In the group of +HIV patients there were 5 (9.4%) patients with parasites; 80% were male and 20% female. Their ages varied between 22 and 33 years; 80% were from the State of Minas Gerais and 20% from the State of São Paulo.

In the control group there were 69 (7.7%) patients with parasites; 58.7% were male and 41.3% were female. Their ages varied between 1 and 76 years; 90.6% were from the State of Minas Gerais, 6.7% from the State of São Paulo and 2.7% from the State of Goiás.

The Table shows the occurrence of intestinal parasites detected by the method of MIFC or Kinyoun in AIDS, +HIV patients and control group.

In the AIDS patients group there were 32 (82.1%) cases of monoparasitism, 5 (12.8%) cases of biparasitism and 2 (5.1%) cases of poliparasitism. The associations found are the following: *Strongyloides stercoralis* and *Hymenolepis nana* (1 case), *S. stercoralis* and *Giardia intestinalis* (1 case), *S. stercoralis* and *Cryptosporidium* sp. (1

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case), *Ascaris lumbricoides* and *Cryptosporidium* sp. (1 case), *A. lumbricoides* and hookworm (1 case), *Cryptosporidium* sp., hookworm and *Entamoeba histolytica* (1 case) and *S. stercoralis*, hookworm, *E. histolytica* and *Trichuris trichiura* (1 case).

In the +HIV patients group there were 5 cases of monoparasitism. In the control group there were 65 (94.2%) cases of monoparasitism, 3 (4.3%) cases of biparasitism and 1 case (1.5%) of poliparasitism. The associations found were: *G. intestinalis* and *H. nana* (2 cases), hookworm and *S. stercoralis* (1 case) and *T. trichiura*, *A. lumbricoides* and *S. stercoralis* (1 case).

The statistical analysis showed significance when compared the occurrence of *S. stercoralis* in AIDS patients group and in the control group (calculated $Z = 2.71$ to critical $Z = 1.645$). The differences for the rest of the parasites were not significant in comparison to the control group. There were no significant statistical difference in comparison to the +HIV group of patients.

A significant statistical difference was observed in comparison to the number of patients with more than one parasite in reference to the group of pa-

tients with AIDS and in the control group (calculated $Z = 3.92$ to critical $Z = 1.645$).

It was demonstrated that the occurrence of intestinal parasitic diseases in AIDS patients was higher than the observed in +HIV patients and the control group. This difference was significant when compared to the occurrence of *S. stercoralis* in AIDS group and control group. It was also observed that patients with more than one parasite are more frequently encountered among AIDS individuals, the difference is significant in relation to the control group. The importance of research in *Cryptosporidium* sp. should be emphasized as well as the routine diagnosis in patients that reveal diarrhea. The frequency of *S. stercoralis* is also important, even though the specific parasitologic method for research in helminths larvae in feces were not used in the routine of the laboratory.

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TABLE
Intestinal parasites in AIDS, +HIV patients and control group in Uberlândia, MG, Brazil

Parasites	AIDS		+HIV		Control group	
	Frequencies	no. positive/ no. tested	Frequencies	no. positive/ no. tested	Frequencies	no. positive/ no. tested
<i>Cryptosporidium</i> sp.	13.0%	(15/108)	—	—	—	—
<i>Strongyloides stercoralis</i>	3.8%	(09/238)	3.8%	(02/53)	1.2%	(11/897)
<i>Giardia intestinalis</i>	3.4%	(08/238)	1.9%	(01/53)	3.8%	(34/897)
<i>Isospora belli</i>	2.8%	(03/108)	—	—	—	—
<i>Entamoeba histolytica</i>	2.1%	(05/238)	1.9%	(01/53)	0.9%	(08/897)
Hookworm	2.1%	(05/238)	1.9%	(01/53)	1.3%	(12/897)
<i>Ascaris lumbricoides</i>	0.8%	(02/238)	0	(00/53)	0.5%	(05/897)
<i>Hymenolepis nana</i>	0.4%	(01/238)	0	(00/53)	0.4%	(04/897)
<i>Schistosoma mansoni</i>	0.4%	(01/238)	0	(00/53)	0.2%	(02/897)
<i>Trichuris trichiura</i>	0.4%	(01/238)	0	(00/53)	0.5%	(05/897)
<i>Enterobius vermicularis</i>	0	(00/238)	0	(00/53)	0.2%	(02/897)

— = not tested