SHORT COMMUNICATION

Coinfection by *Strongyloides stercoralis* in Blood Donors Infected with Human T-Cell Leukemia/Lymphoma Virus Type 1 in São Paulo City, Brazil

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The frequency of coinfection with Strongyloides stercoralis *and human T-cell leukemia/lymphoma virus type 1 (HTML-1) was determined in 91 blood donors examined at the blood bank of a large hospital in São Paulo city, Brazil. As control group 61 individuals, not infected by HTLV-1, were submitted to the same techniques for the diagnosis of* S. stercoralis *infection. In HTLV-1 infected patients the frequency of* S. stercoralis *infection was 12.1%; on the other hand, the control group showed a frequency significantly lower of* S. stercoralis *infection (1.6%), suggesting that HTLV-1 patients shoud be considered as a high risk group for strongyloidiasis in São Paulo city.*

Key words: strongyloidiasis - human T-cell leukemia/lymphoma virus type 1 - blood donors - São Paulo - Brazil

Strongyloides stercoralis is a soil-transmitted nematode that usually produces a chronic intestinal infection with either mild or no symptoms in tropical and subtropical countries. However, in immunodepressed patients strongyloidiasis may evolve as a massive systemic larvae invasion resulting in a severe and sometimes fatal outcome.

The frequency of infection by *S. stercoralis* in Brazil is quite variable. In the State of São Paulo, in a non-randomized study involving the examination of 320,000 fecal samples, frequencies of 0.7% and 1.5%, respectively, for the metropolitan area and the hinterland (Waldman & Chieffi 1989) had been found. On the other hand, in randomized samples of children less than five years old and schoolchildren examined in the urban areas of São Paulo (Monteiro et al. 1988) and Guarulhos (Chieffi et al. 1988) the prevalence rates found for *S. stercoralis* infection were 0.3% and 0.4%, respectively.

Infection with human T-cell leukemia/lymphoma virus type 1 (HTLV-1) occurs all over the world but higher rates are found in some areas, such as southeastern Japan and some Caribbean islands. In Brazil, the rate of HTLV-1 infection among blood donors ranges from 0.3% to 0.4% (Gabbai et al. 1993, Segurado et al. 1997). In female commercial sex workers examined in Fortaleza, State of Ceará, it was found a rate of infection by HTLV-1 of 1.21% (Broutet et al. 1996).

Infection with HTLV-1, even in asymptomatic carriers, is usually associated with immunologic alterations resulting in decreased levels of serum IgE (Newton et al. 1992, Hayashi et al. 1997). Studies performed in Japan (Sato & Shiroma 1989) and Jamaica (Robinson et al. 1994) suggest an association between *S. stercoralis* and HTLV-1 infections in the same host. Recently, it was reported the association of *S. stercoralis* hyperinfection with HTLV-1 infection in Peruvian patients (Gotuzzo et al. 1999), reinforcing some other reports about severe strongyloidiasis and refractoriness to usual treatment in patients infected with HTLV-1 (Sato et al. 1992). On the other hand, it was proposed that the onset of adult T-cell leukemia/lymphoma (ATL) in patients infected with HTLV-1 occurs significantly earlier when the subjects are coinfected with *S. stercoralis* (Plumelle et al. 1997).

The aim of the present study was to determine the frequency of coinfection with *S. stercoralis* in a group of blood donors infected with HTLV-1 examined at the blood bank of a large hospital in the municipality of São Paulo (São Paulo, Brazil).

We surveyed the frequency of intestinal infection with *S. stercoralis* employing three techniques

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(spontaneous fecal sedimentation, Baermann larval searching and Harada-Mori larval cultivation) in 91 healthy blood donors positive for anti-HTLV-1 antibodies detected by an enzyme-linked immunosorbent assay (ELISA) and Western blotting. At the same time, 61 healthy individuals, either relatives living in the same dwellings or close neighbours of the HTLV-1-positive people and showing negative results for anti-HTLV-1 antibodies, were examined for *S. stercoralis* infection using the same methods. The objectives of the research were explained and informed consent was obtained from all subjects before sample collection.

The frequency of *S. stercoralis* infection was significantly higher in the group coinfected with HTLV-1 (Table). Statistical analysis using the one-tailed Fisher exact test showed a p value of 0.015 and an odds ratio of 8.25 with the 95% confidence limits ranging from 1.05 to 175.56. These results, in spite of the huge variation of the confidence limits, suggest that HTLV-1 infected patients, even when asymptomatic, should be considered as a high risk group for *S. stercoralis* infection in the municipality of São Paulo.

TABLE

Frequency of infection with *Strongyloides stercoralis* in blood donors positive for human T-cell leukemia/lymphoma virus type 1 (HTLV-1) infection in the municipality of São Paulo city, Brazil

HTLV-1	*S. stercoralis*		Total
	Positive	Negative	
Positive	11(12.1%)[a]	80(87.9%)	91
Negative	1(1.6%)[a]	60(98.4%)	61

a: $p<0.05$

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