BRIEF COMMUNICATION

SEREOEPIDEMIOLOGICAL STUDY OF HUMAN STRONGYLOIDIASIS WITH BLOOD SAMPLES COLLECTED ON FILTER PAPER, IN ABADIA DOS DOURADOS (MINAS GERAIS, BRAZIL)

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Strongyloides stercoralis (Bavay, 1876) infection is ranked in 5th place among the helminthiasis in the world with an estimated 35 million infected individuals, mostly living in tropical and semitropical countries. The frequency of nonsymptomatic or disseminated forms has become a serious public health concern due to the lack of reliable tools for the diagnosis of this disease.

The development of immunological tests for the diagnosis of strongyloidiasis can be helpful in epidemiological and clinical evaluations. Studies have been done trying to standardize a serological test for the diagnosis of this helminthiasis. The main limitations found in developing such tests are the low antigen yielding which does not permit further fractionation and analysis, added to the difficulties in collecting blood samples for conducting seroepidemiological inquiries.

Immunological tests using the third-stage filariform larvae of S. stercoralis and Strongyloides ratti (Sandground, 1925), have shown comparable results. Thus, the use of S. ratti has been preferred to overcome the problem in obtaining antigens in sufficient amount.

The use of blood samples collected on filter paper was proved to be useful for the serodiagnosis of parasitic diseases, as well as for seroepidemiological surveys in human and veterinary investigation. Thus this procedure has been applied with success in research on schistosomiasis, Chagas' disease, and toxoplasmosis. Since the use of blood samples collected on filter paper for the diagnosis of human strongyloidiasis is very scarce, the objective of the present work is to utilize this procedure in a serological inquiry applying the indirect immunofluorescence antibody test (IFAT). In this test, the third stage filariform larvae of S. ratti was chosen as antigen because this parasite stage presented a sensitivity of 92.5% and specificity of 97.1%.

Abadia dos Dourados is a city located in the Alto Paranaiba region in State of Minas Gerais, Brazil, its population is about 6,424 inhabitants. In July 1996, 207 individuals who live in the rural area were selected at random. These individuals were later identified according to sex and age, after their agreement for the participation in this project. Blood samples were obtained by digital puncturing with disposable lancets, collected on filter paper (Klabin 80 g/m²), as described by SOUZA & CAMARGO, and stored in the Parasitology Laboratory of the Universidade Federal de Uberlândia at 4°C until November of 1996, when the blood elution was performed.

Filter papers were cut into 1.2 cm diameter discs using a metallic mold, and they were put individually in plastic bungs. On each bung 0.3 ml of phosphate buffered saline 0.01M, pH 7.2 (PBS) were added and kept during 18 hours at 4°C. The IFAT with the eluates was done according to COSTA-CRUZ et al. using FITC-conjugated anti-human IgG at an ideal titer of 150. The analysis of the reactions was done using an immunofluorescence microscope (OLYMPUS BH-2 RFCA) at 400 X.

Of the 207 blood samples, 91 (44.0%) were from males and 116 (56.0%) from females. The age varied from two to 78 years. In the IFAT, 16 cases (7.7%) were seroreagents for strongyloidiasis. Table 1 shows the infection frequency of anti-Strongyloides antibodies in the inhabitants of the rural area in Abadia dos Dourados according to sex and age. Positive individuals of all age-groups were identified, with the youngest being seven years and the oldest being 74 years old. Applying the X² test, there was no statistical significant difference between sex and age (p>0.05).

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Infection frequency of anti-Strongyloides antibodies (IgG-IFAT) according to sex and age among the inhabitants of the rural area in Abadia dos Dourados, State of Minas Gerais, Brazil, in July, 1996.

<table>
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<th>Age</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
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<tr>
<td></td>
<td>N° +/ total by sex</td>
<td>P</td>
<td>N° +/ total by sex</td>
</tr>
<tr>
<td>00 - 09</td>
<td>1/19</td>
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<td>0/20</td>
</tr>
<tr>
<td>10 - 19</td>
<td>0/21</td>
<td>0</td>
<td>2/39</td>
</tr>
<tr>
<td>20 - 29</td>
<td>1/9</td>
<td>1.1</td>
<td>1/8</td>
</tr>
<tr>
<td>30 - 39</td>
<td>2/17</td>
<td>2.2</td>
<td>3/23</td>
</tr>
<tr>
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<td>0/10</td>
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<td>2/9</td>
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<tr>
<td>Total</td>
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<td>7.7</td>
<td>9/116</td>
</tr>
</tbody>
</table>

N°+ = Numbers of seropositive cases  
P = Percentage

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REFERENCES


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