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BRIEF COMMUNICATION

HUMAN TOXOCARIASIS: INCIDENCE AMONG RESIDENTS IN THE OUTSKIRTS OF CAMPINAS, STATE OF SÃO PAULO, BRAZIL

Francisco ANARUMA FILHO(1), Pedro Paulo CHIEFFI(2,3), Carlos Roberto S. CORREA(4), Eide Dias CAMARGO(5), Edilene P. Real da SILVEIRA(5) & Joana José B. ARANHA(5)

SUMMARY

With the aim of estimating the incidence of infection by *Toxocara* among residents in the outskirts of Campinas (State of São Paulo, Brazil) two serological surveys, using ELISA anti-*Toxocara* tests, were performed in January 1999 and January 2000, involving, respectively, 138 and 115 individuals, 75 of which examined in both occasions. Among this group 67 individuals did not show the presence of anti-*Toxocara* antibodies in 1999, and 12 presented seroconversion in the second survey, revealing an annual incidence rate of 17.9%.

KEYWORDS: Human toxocariasis; *Toxocara canis*; Incidence; ELISA; Campinas, SP, Brazil.

Visceral larva migrans is a zoonosis determined by the prolonged migration of some nematode larvae through human tissues. *Toxocara canis* and *T. cati* are common ascarids of dogs and cats and considered the principal aetiological agents of this syndrome. Humans are infected after ingestion of either embrionated eggs of those ascarids or tissues of infected paratenic hosts[10,13].

Human infection by *Toxocara* has a worldwide distribution, with variable frequencies, depending on local factors such as close contact with soil contaminated mainly by dog faeces and low income level of the community[5,9]. The rate of infection and occurrence of symptoms are more frequent in children[12,13], principally in rural areas[7,10]; however, albeit less frequently, adults have also been involved. The most common signs and symptoms include fever, respiratory complaints and hepatomegaly[6,10].

Several studies have investigated human infection by *Toxocara* in Brazil, usually finding high frequencies[1,2,4,11,14]. However, in this Country, as in many other regions, data on the incidence rate are not available, since almost all field investigations had been designed as transversal studies, considering only one moment of the infection's natural history.

With the aim of estimating the rate of infection by *Toxocara* among the residents of three boroughs located in the outskirts of the city of Campinas (State of São Paulo, Brazil) two serological surveys were performed: the first in January 1999 and other in January 2000, involving respectively 138 and 115 randomly selected volunteers. Among these, evaluating 75 individuals who were examined in both occasions, was possible to calculate the annual incidence rate.

In each survey the sera were tested for the presence of anti-*Toxocara* IgG antibodies through enzyme-linked immunosorbent assay (E.L.I.S.A.), using an excretion-secretion antigen obtained from *T. canis* larvae maintained in Eagle's medium at laboratory[8]. To avoid cross-reactions with *Ascaris* antigens, a soil-transmitted roundworm frequent in the studied region and to improve test specificity, each serum was previously submitted to absorption with *Ascaris suum* extracts[4]. Serological examinations were carried out at the Serology Section of the Central Laboratory of the Adolfo Lutz Institute employing technique standardized in that laboratory[3]. The ELISA cut-off had been determined every day using human positive and negative sera.

The objective of the study was clearly explained to all those involved and their informed consent was solicited before collecting blood samples.

The results of the first survey were published elsewhere[2] and showed a prevalence rate of 23.9% for *Toxocara* infection. In the second survey, carried out one year later, 24/115 (20.9%) individuals examined showed anti-*Toxocara* antibodies in their blood samples. Considering the 75 residents examined in both surveys, 67 had negative results in 1999 and 12 presented seroconversion in the second survey, revealing an annual incidence rate of 17.9% for *Toxocara* infection in the studied area.

Among the 12 individuals presenting seroconversion to anti-*Toxocara* antibodies, eight (66.7%) were less than 10 years old, pointing out the role of visceral larva migrans as a pediatric disease[10,13] but also calling attention to the occurrence, although not so common, of *Toxocara* infections in adults.

(1) Associação Cultural e Educacional de Garça – ACEG, SP, Brasil
(2) Instituto de Medicina Tropical de São Paulo (LIM 06), São Paulo, SP, Brasil
(3) Faculdade de Ciências Médicas da Santa Casa de São Paulo, São Paulo, SP, Brasil
(4) Departamento de Medicina Preventiva e Social, Faculdade de Medicina da UNICAMP, Campinas, SP, Brasil
(5) Instituto Adolfo Lutz, São Paulo, SP, Brasil
Correspondence to: P.P. Chieffi, Instituto de Medicina Tropical de São Paulo. Av. dr. Enéas de Carvalho Aguiar, 470, 05403-000 São Paulo, SP, Brasil. E-mail: **pchieffi@usp.br**

RESUMO

Toxocaríase humana: incidência de infecção em indivíduos residentes na periferia de Campinas, Estado de São Paulo, Brasil

Dois inquéritos sorológicos empregando testes imunoenzimáticos (ELISA) anti-*Toxocara* foram realizados em moradores da periferia de Campinas (SP, Brasil) em janeiro de 1999 e janeiro de 2000, envolvendo, respectivamente, 138 e 115 indivíduos escolhidos aleatoriamente. Dos 75 indivíduos examinados em ambas as ocasiões, 67 apresentaram resultados negativos em 1999, observando-se soroconversão em 12 no segundo inquérito. Tais resultados indicam taxa anual de incidência de 17,9% para infecção por *Toxocara* na região.

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