

ABSTRACT

Seroprevalence of Toxocariasis in School Children in Trinidad

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The seroprevalence of toxocariasis was investigated in 1009 school children throughout Trinidad, ranging in ages from 5 to 12 years. Infection, as measured by titre, was found to be high compared to values obtained from children in other countries. Using an excretory-secretory antigen and performing an ELISA test it was found that 62.3% of children had an IgG antibody titre of $\geq 1:100$, indicating exposure to the parasite, while 27.2% had a titre of $\geq 1:800$, suggesting a current or recent infection.

Relationships between seroprevalence and host factors including age, sex, school location, and other risk factors including geophagia, thumb-sucking, presence of other gastro-intestinal tract parasitisms and pet ownership were explored. Further investigations to measure clinical symptoms and the effect of infection on cognitive skills were also undertaken.

There was no significant relationship between age and the presence of current or recent infection ($P=0.746$). Males were significantly more commonly infected than females as were the attendees of rural schools versus urban schools ($P<0.001$). The percentage of seropositivity among children varied widely from school to school. Pet ownership and the absence of pipe-borne water in the household were found to be

significantly associated with positive serology ($P < 0.05$). Clinical symptoms mostly associated with positive serology were eczema, seizures and chronic cough. Measurement of cognitive skills by the school achievement test showed that children with positive serology gained lower scores ($P < 0.001$) than age- and sex-matched controls with negative serology.

When sub-samples of IgG positive ($\geq 1:800$) and negative ($< 1:100$) sera were tested for IgM antibodies, no significant differences were observed when the results were compared ($P > 0.05$). Additionally, inclusion of an IgM antibody test to the testing algorithm for the laboratory diagnosis of toxocariasis could not be justified in terms of added value to the final result.

In conclusion, this survey of toxocariasis in school children confirms the high level of infection indicated by earlier, though limited studies in Trinidad. More detailed studies are however needed to determine whether this high level of seroprevalence may be the cause of specific illnesses associated with toxocariasis.

Recommendations derived from this study include health education in order to increase the public awareness on the transmission of the disease, de-worming all dogs and cats periodically and the curbing of stray dogs and cats. Environmental sanitation measures should include keeping children away from contaminated areas and practising proper hygiene after play.