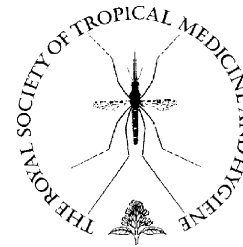




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SHORT COMMUNICATION

Seroprevalence of *Toxoplasma gondii* infection among inhabitants in the Democratic Republic of Sao Tome and Principe

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Received 13 December 2006; received in revised form 18 April 2007; accepted 18 April 2007

Available online 2 July 2007

KEYWORDS

Toxoplasma gondii;
Protozoan antibodies;
Latex agglutination test;
Seroprevalence;
Risk factors;
Sao Tome and Principe

Summary The level of *Toxoplasma gondii* infection among the general population of the Democratic Republic of Sao Tome and Principe is unclear. The *T. gondii* infection status of inhabitants who visited National Central Hospital on Sao Tome Island was assessed by a latex agglutination test. The overall seroprevalence was 74.5% (120/161). No significant gender difference in seroprevalence was found between males and females. The older age group (≥ 45 years) had significantly higher seroprevalence (80.0%, 28/35) than the younger age group (< 15 years) (20.0%, 3/15) ($\chi^2 = 16.04$, $P < 0.001$).

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1. Introduction

Toxoplasma gondii is a worldwide threat to human health. The infection is transmitted horizontally to humans by acci-

dental ingestion of oocysts in cat feces contaminating water, food or soil, or by eating raw or undercooked meat containing cysts (Montoya and Liesenfeld, 2004).

Our previous study indicated that the seroprevalence of *T. gondii* infection among specific populations in the Democratic Republic of Sao Tome and Principe (DRSTP), i.e. pre-schoolchildren (21.49%) and pregnant women (75.2%), was not low (Fan et al., 2006; Hung et al., 2007). Consumption of oocysts from contaminated soil, water or vegetables

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Table 1 Seroprevalence of *Toxoplasma gondii* infection among inhabitants in the Democratic Republic of Sao Tome and Principe

Variable	Group	No. tested	No. positive (%)	Chi-square (χ^2)	P-value
Gender	Male	60	41 (68.3)	Referent 1.94	– 0.16
	Female	101	79 (78.2)		
Age group (years)	<15	15	3 (20.0)	Referent 14.72 19.95 16.69 16.04	– <0.001 <0.001 <0.001 <0.001
	15–25	42	32 (76.2)		
	25–35	42	35 (83.3)		
	35–45	26	22 (84.6)		
	≥45	35	28 (80.0)		
Total		161	120 (74.5)	–	–

seemed to be the most likely route for pregnant women to acquire this parasite (Hung et al., 2007). However, the true prevalence of *T. gondii* infection in the general population of the DRSTP remains unclear and requires further investigation.

2. Materials and methods

Inhabitants (mean age \pm SD: 34.2 \pm 17.9 years) who visited National Central Hospital on Sao Tome Island were invited to participate in the present study after giving their informed oral consent. In total, 161 serum samples were obtained by venipuncture and they were screened for *T. gondii* antibodies using a *Toxoplasma* latex agglutination test (Fan et al., 2006; Hung et al., 2007). The participants were divided into five age groups (Table 1). Statistical analysis was performed using the SAS software system (SAS Institute, Inc., Cary, NC, USA).

3. Results and discussion

Of the 161 serum samples studied, 74.5% (120/161) were positive for *Toxoplasma* antibody (Table 1); this is significantly higher than for inhabitants of Sudan (41.7%) and Somalia (29.6%) in East Africa, Algeria (52.2%) in North Africa, and Nigeria (20.6%) in West Africa (Hall et al., 2001). However, the seroprevalence was a little lower than that in Ethiopia (80.0%) (Woldemichael et al., 1998). The varying seroprevalence between Africa countries might be explained by differences in socioeconomic status, food habits and even the screening method.

The present study indicated that *T. gondii* prevalence was not significantly different between males (68.3%, 41/60) and females (78.2%, 79/101; $\chi^2 = 1.94$, $P = 0.16$) (Table 1) as has been reported in other countries (Montoya and Liesenfeld, 2004).

Seroprevalence tended to increase with age (Table 1). The higher seroprevalence in older age groups might be due to their longer exposure to the risk factor of consumption of food or water contaminated by oocysts (Fan et al., 2006; Hung et al., 2007). The present study further reinforces the findings that *Toxoplasma* infection is indeed highly prevalent in the DRSTP.

Authors' contributions: C-KF, C-CH and K-ES designed the study protocol; VG, MCRF and L-FT carried out the latex agglutination test; H-YC analyzed the data; C-KF drafted

the manuscript. All authors read and approved the final manuscript. C-KF is guarantor of the paper.

Acknowledgements: The authors are grateful to the Ministries of Foreign Affairs and Hygiene of the Democratic Republic of Sao Tome and Principe for their support and permission to conduct the study and to the Ministry of Foreign Affairs and the Department of Health, Taiwan, for their support of this investigation. The authors thank Yu-Kuan Lin, Hung-Shue Lan, Wen-Cheun Chang, Shing-Hsien Chou for their assistance with the collection of serum samples and the latex agglutination test; Fung-Chang Sung, Ke-Yun Sao for suggesting the National Central Hospital on Sao Tome Island as the study location; and Jose Manuel de Carvalho and Claudina Cruz for communicating with the study participants.

Funding: None.

Conflicts of interest: None declared.

Ethical approval: Ministry of Hygiene of the Democratic Republic of Sao Tome and Principe.

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