

Current status of parasitic infections among Pangkor Island community in Peninsular Malaysia

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Abstract. Limited data is available on the prevalence of parasitic infections among the island communities in Malaysia with most studies performed between 1960s-1980s. This study was conducted to determine the current prevalence status of parasitic infections among communities living in Pangkor Island Peninsular Malaysia. A total of 131 stool and 298 serum samples were collected and subjected to microscopic examination for intestinal protozoa and helminths and detection of *Toxoplasma gondii* antibodies using commercial ELISA kits respectively. In addition, thin and thick peripheral blood films were microscopically screened for the presence of *Plasmodium* spp. and microfilariae respectively. The overall prevalence of intestinal parasitic infections among Pangkor Island community was 9.9% (13/131) with *T. trichiura* (5.3%) being the most common intestinal parasite detected. Toxoplasmosis was reported in almost 60% of the community with the seroprevalence being significantly high among females (64.7%) compared to males (52.8%) ($p=0.038$). None of those examined samples were infected with intestinal sarcocystosis, malaria and filariasis. This study revealed that the prevalence of intestinal parasitic infections among Pangkor Island community has been greatly reduced compared to that reported 35 years ago. Massive improvements in the socioeconomic status, personal hygiene, water facilities and sanitation may have contributed to the low prevalence of parasitic infections in this community. Nevertheless, further studies still need to be performed to determine the possible risk factors for the high prevalence of toxoplasmosis in this community.

INTRODUCTION

Parasitic infections are a major cause of great concern particularly in developing countries (WHO, 1987; Haque, 2007; Alyousefi *et al.*, 2011; Ngui *et al.*, 2011a). Among the important parasites are soil-transmitted helminths (*Ascaris lumbricoides*, *Trichuris trichiura* and hookworms), intestinal protozoa (*Entamoeba histolytica* and *Giardia lamblia*), tissue protozoa (*Toxoplasma gondii*), blood parasites (*Plasmodium* spp.) and parasites causing lymphatic filariasis (*Wuchereria bancrofti* and *Brugia malayi*) (WHO, 1987). Worldwide, it has been estimated that > 1000 million, 795 million and 740 million individuals are infected with *A. lumbricoides*, *T. trichiura* and hookworms, respectively (de Silva *et al.*, 2003; Bethony

et al., 2006), whereas, more than 50 and 200 million people worldwide are infected with *E. histolytica* and *G. lamblia*, respectively (WHO, 1987; van Hal *et al.*, 2007).

With regards to blood parasites, previous studies have shown that almost 3 billion people are at risk of malaria yearly with 300 - 500 million individuals infected and up to 3 million deaths (Snow *et al.*, 2005; WHO, 2005). Meanwhile, lymphatic filarial nematodes namely *W. bancrofti* and *B. malayi* cause filariasis among humans regardless of age and gender (Michael *et al.*, 1996). Transmission of both diseases to humans is via bites of infected mosquitoes (Vythilingam, 2012). The World Health Organization (WHO) has identified lymphatic filariasis as the second leading cause of permanent and long-term disability