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Research Note

Intestinal Parasitic Infections in Native and Residents of Mozambique

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Many people live and work in outside their native countries. In the developing countries, intestinal parasitic infections are still an important public health problem (Suarez, 1992). Of the many reports on the prevalence of intestinal parasitic infections, some are biased, because they are studies of individuals under unusual conditions, such as those hospitalized or receiving medical care in outpatient clinics. Prevalence should be drived from randomly sampled populations, and is thus generally difficult to estimate. There are few data about the prevalence of intestinal parasites in Mozambique. Our objective is to investigate the prevalence of infections of protozoa and other intestinal parasites in Japanese, Indonesian, Chinese, and Mozambican residents in Mozambique, and to consider the environmental and epidemiological factors that play a role in the dissemination of parasites. As the geographical conditions Mozambique is a country of plateaus and slopes, and its climate is classified as tropical monsoon with the four changes of seasons.

We conducted this survey in two cities (Maputo and Quelimane in Mozambique) in 1994. Samples of stool and urine for medical check-up were obtained from 43 Japanese (staying period; 7.78±6.27 years, foreign workers and their family), 24 Indonesians (foreign workers), six native Mozambican house-boys and one Chinese (a foreign worker). They were social-active and healthy. Each stool specimen was fixed with 10% formalin, and centrifuged for 3 minutes at 2500 rpm. Slurries were checked by microscopy in the laboratory, using formalin-ether methods, and examined for oocytes. An aliquot of each stool sample to a volume of mixed with a drop of Lugol's solution (5% iodine, 10% potassium iodide, 100 ml with distilled water), and examined microscopically tested for protozoan. Urine samples were tested for blood contamination, and 10% formalin was added to the sediments. Each sample was centrifuged at 2500 rpm and the slurry was examined microscopically for parasites.

Five genera of protozoan cyst were identified in six stool samples from 43 Japanese residents (14.9%). *Blastocystis hominis* was the most prevalent, being identified in four individuals (9.3%). A stool from a child contained *Giardia lamblia*. *Endolimax nana*, *Entamoeba histolytica*, and *Chilomastix mesnili* were detected in one sample (Table 1).

Trichuris trichiura, hookworm, *Blastocystis hominis*, *Entamoeba histolytica*, *Entamoeba coli*, *Iodamoeba buetschlii*, and *Endolimax nana*, were detected in one sample from one Chinese resident (Table 1).

Two genera of helminth and two genera of protozoa were identified in stool samples from 11 of 24 Indonesians (45.8%) (Table 1). Two samples from two Indonesians showed both *Ascaris lumbricoides* and *Trichuris trichiura*. Four samples showed two parasites. One sample from one individual showed four parasites.

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Table 1 Prevalence of Parasites in 74 Stool Samples from 74 residents of Mozambique

	Japanese	Indonesians	Chinese	Mozambicans
Entamoeba histolytica	1		1	
Endolimax nana	1	2	1	2
Entamoeba coli			1	
Iodamoeba buetschlii			1	
Giardia lamblia	1			
Chilomastix mesnili	1			
Trichuris trichiura		6	1	4
Hookworm			1	3
Ascaris lumblicoides		2		1
Blastocystis hominis	4	8	1	3
*Schistosoma haematobium**				1
Parasites carriers	5	11	1	5
Tested cases	43	24	1	6

*urine sample

Three genera of helminth and two of protozoa were identified in five of six stool samples from six Mozambican residents (83.3%). In three samples from three individuals both hookworm and *Trichuris trichiura* were detected. One urine sample contained *Schistosoma haematobium* eggs (Table 1). One Mozambican was suffering from elephantiasis (data not shown).

In countries whose residents come from different countries with differing ways of life, the prevalence of parasitic infections also varies according to differences in diet and living conditions.

We investigated the incidence of parasitic infections in four groups, three of whom came from other countries to live in Mozambique. The Japanese and Indonesian subjects lived in separate dormitories. One Chinese resident and the Mozambican residents lived in their own houses. The incidence of infection in Japanese was the lowest of the four groups studied. In six samples from the Japanese, parasites were detected that are transmitted by faecal-oral route, such as *Blastocystis hominis, Entamoeba histolytica*, and *Giardia lamblia* (Pikula, 1987). The Japanese who shared the same dormitory may have been exposed to the same protozoa.

In samples from Indonesian, Chinese, and Mozambican residents, the same kinds of intestinal helminth such as *Trichuris trichiura* were detected. Of 133 Indonesian residents in Japan, 94 (71%) had intestinal helminth and/or protozoan infections (Akao *et al.*, 1993). This finding showed that the incidence of parasitic infection of Indonesians in Mozambique is lower than that in Japan. We consider that this difference may be due to the life styles. In Mozambique Indonesians live in the dormitory together. Their standard of living is good. A urine sample from one native Mozambican resident in our study showed *Schistosoma haematobium*. In one sample from an indigenous Chinese resident, seven parasites were detected. Stool samples from Mozambicans and the one Chinese resident studied showed hookworm. These findings in the four groups having in different life-style each group showed a different spectrum of parasites in the stool.

Considering poor public health, environment contaminated with feces, manners and customs etc, we need campaign for endemic control for intestinal parasite infections. If so, the parasite infection rate is hoped to be decreased in Mozambique.

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