

# High Prevalence Of Filariasis In Myanmar-Migrant Workers From Screening Program Of A Local Hospital In A Rural District Of Southern Thailand

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## Abstract

**Background:** Although the present prevalence of filariasis in the Thai population is low, migration of Myanmar labor into Thailand may increase the incidence of bancroftian filariasis. Due to the previous report, the prevalence of filariasis in Myanmar-migrant workers was very high. In this study, we reported the prevalence of lymphatic filariasis in Myanmar-migrant workers in Bangsaparn district, Prachuab Kiri Khan, a rural community in the Southern Region of Thailand with the high density of Myanmar-migrant workers as fishermen.

**Methods:** We analyzed the data of screening for filariasis using microscopic examination among 250 Myanmar-migrant workers (169 males and 81 females) who had just stayed in Thailand for less than 1 month.

**Results:** The microfilarial rate among these Myanmar migrants was 2.4 %. All cases were bancroftian filariasis. The microfilarial rates in males and females were 3.0% and 1.2 %, respectively.

**Conclusion:** Since these migrants carry the parasite with high infected rate and the mosquito vector *Culex quinquefasciatus* is also prevalent in Thailand, Thai people are at high risk of acquiring this disease if good control and prevention strategies are not implemented. Filaria screening test as one of the infection control strategies is necessary.

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## INTRODUCTION

Lymphatic filariasis, caused by filarial nematode parasites, is an important mosquito-borne disease in the tropical countries including to Thailand. Up to billion of people around the world is the population at risk for filariasis (1).

The two species as *Wuchereria bancrofti* and *Brugia malayi* are the two common pathogenic parasites in Thailand (2, 3).

Presently, in Thailand, endemic areas of lymphatic filariasis are limited to some provinces in the Western, Southern and Northern region (3). However, due to the recent report of Triterapapab and Songtrus (4), the high prevalence as up to 4.4 % was reported in the group of Myanmar migrant workers in Tak province, Northern Region of Thailand. Such a high infection rate obviously deserve Thai public health concern, therefore, specific infectious control program for

communicable diseases among the migrant Myanmar workers was purposed.

Recently, more than thousands of Myanmar workers live in Thailand, working as the laborers. Furthermore, though most of these workers are legal some are illegal. Also, these workers are usually a carrier of many diseases, therefore, the outbreak of some controllable diseases in Thailand can be expected (4).

Here, we reported the result of screening tests for the Myanmar migrant workers in a rural district near Thai-Myanmar border, where a number of Myanmar immigrated for better job and income.

## MATERIALS AND METHODS

### STUDY SETTING AND POPULATION

The setting of this study is at Bangsaparn District, Prachuab kiri khan Province, about 400 km from Bangkok capital city. This district is a rural district closed to Thai Gulf. Also,

Thai-Myanmar border locates in this area. There are hundreds of Myanmar immigrate to this district to work as fishermen. According to the communicable diseases control program, the screening program for all migrant workers was set by the district hospital.

The data from two hundreds and fifty Myanmar workers who had just stayed in Thailand for less than 1 month and passed the screening program by the district hospital during year 1997 were reviewed in this study.

## SCREENING FOR FILARIASIS

All screenings in this study were performed by the medical technologists. The method use for diagnosis of filaria in this study was identification of microfilaria in the peripheral blood smear as described in the previous study (4). All subjects were got blood collection during 9.00 - 11.00 o'clock. Thin and think blood films were prepared for each individual. All blood films were examined under the light microscope ( X 1,000).

## DATA ANALYSIS

Review of all recorded data was performed. The data were analyzed by the SPSS for Windows program.

## RESULT

Of the total 250 studied workers, 169 were males and 81 were females. The demographic data of all subjects were presented in Table 1.

### Figure 1

Table 1: Demographic data and relative prevalence of filariasis.

Parameters	Total number of subjects	Infected subject (relative percentage*)
Age group		
□ < 20 years	52	1 (1.9 %)
□ 21 - 30 years	164	4 (2.4 %)
□ 30 - 40 years	32	1 (3.1 %)
□ 40 - 50 years	2	0 (0 %)
Sex		
□ male	169	5 (3.0 %)
□ female	81	1 (1.2 %)

\* relative percentage compared to the total number in each group

The microfilarias were detected in 6 workers, giving the infection rate equaled to 2.4 %. All cases were bancroftian filariasis. The microfilarial rates in males and females were 3.0% and 1.2 %, respectively (Table 2).

### Figure 2

Table 2: Filariasis among the Myanmar workers.

Parameters	Microfilariaemics	Amicrofilariaemics
Male (n = 169)		
□ < 20 years	1	41
□ 21 - 30 years	3	104
□ 30 - 40 years	1	17
□ 40 - 50 years	0	2
Female (n = 81)		
□ < 20 years	0	10
□ 21 - 30 years	1	56
□ 30 - 40 years	0	14
□ 40 - 50 years	0	0

## DISCUSSION

One hundred and twenty million people in at least 80 countries of the world are infected with lymphatic filarial parasites, and it is estimated that one billion (20% of the world's population) are at risk of acquiring infection (1). Most of these infections are caused by *Wuchereria bancrofti*, and most of the remainders by *Brugia malayi*.

The endemic area for this disease is the tropical zone, in many developing with low socioeconomic conditions. The main pathology of filariais is lymphatic filariasis, resulted from a complex interplay of the pathogenic potential of the parasite and the immune response of the host (3). In Thailand, this disease is an old disease under successful control programs (2). However, due to the recent migration of thousands of Myanmar migrants for the better life in Thailand and since the Thai and Myanmar's parasite and mosquito vector are same, the increase prevalence of filariais due to this population can be expected (4,5).

Presently, only microscopic microfilaria screening for these alien workers in the endemic area is recommended. In interest, although our setting was not the endemic area in Thailand as Kanchanaburi, Tak and Narathiwat (2,3) the high prevalence of filariasis among the migrants workers, both illegal and legal, can be detected. According to our study, although the prevalence of filariasis (2.4 %) was slightly lower than the recent previous reports among the migrant Myanmar workers (about 4 %) (3,5) it was high comparing to the local population (about 0.5 % according to the hospital statistics). Nevertheless, the hometowns of our population, the cities in the Southern of Myanmar, were different from the population in the previous studies (3,5), which were the cities in the Eastern region of Myanmar thus the epidemiological difference could be displayed.

Concerning the age group of the infected subjects, we

detected the highest infection rate in the age group 20 - 30. This result is similar to the previous studies, which mentioned the high infection rate in the same age group (3,5). This may due to the fact that most subjects were in this age group. Actually this age group is the most common group of Myanmar migrants, immigrating for work as the laborers (3,4). Since these migrants carry the parasite with high infected rate and the mosquito vector *Culex quinquefasciatus* is also prevalent in Thailand, effective screening program for these population as one of the prevention strategies is necessary (4).

Although the screening technique used in our study is the microscopy technique, which is not as sensitive as the immunology or molecular technique, high prevalence of filariasis can be detected. The microscopy technique is still recommended by the Ministry of Public Health Thailand due to the limitation of resource in our country. Furthermore, filariasis detected in these workers has never been detected and treated before in their hometowns. Although all detected cases were immediately treated with diethylcarbamazine revisiting of these workers to their hometown and immigration back with the re-infection can be expected. If no strict control by effective screening, filariais may re-emerge as a big problem in the community (3).

In addition to the present strategies, which focus early detection of the microfilaria among the local population in the endemic area, the screening program should be implemented for not only the endemic area but also the non-endemic area with high density of migrant workers.

Furthermore, effective vector control should also be concerned. Sensitive, specific, practical and acceptable screening technique for the field surveillance must be set (7).

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