

Rate of malarial infection among foreigners in a tertiary hospital of Thailand : change of epidemiology and importance of travel medicine (1996–2005)

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Abstract

Background & objectives: Malaria is still an important infectious disease in Thailand. The study of the incidence of malaria can provide useful data for disease prevention and control. At present, trade and travel can impact on vector-borne diseases, including malaria. Transmission of malaria from an endemic to a non-endemic area can be expected and this can affect the pattern of malaria epidemiology.

Methods: Analysis of rate of malarial infection among foreigners in a tertiary hospital of Thailand in the past decade (1996–2005) was carried out by scrutinising the available published and unpublished reports.

Results: According to this study, two main groups of travellers, the migrant workers from the nearby countries, who bring malaria from the endemic area in their countries and the naïve cases as the travellers from the western countries, who expose to malaria during their travelling in Thailand, can be identified.

Conclusion: Change of epidemiology due to high rate of infection in non-Thai patients and importance of travel on the epidemiology of malaria can be seen from this study.

Key words Foreigner – malaria – tertiary hospital – Thailand

Introduction

Malaria is an important, potentially fatal mosquito-borne disease characterised by cyclical bouts of fever with muscle stiffness, shaking and sweating in tropical countries including Thailand¹. Organised malaria control activities have reduced malaria morbidity from 286/1000 population in 1947 to 1.5/1000 population in 1996². Despite encouraging trends in dramatically reducing malaria, the rates of disease may be re-emerging in the country as evidenced from an increase annual parasite index (API) from 1.78/1000 in 1997 to 2.21/1000 in 1998². It can be shown that

the pattern of malarial incidence is dynamic and the study of the incidence of malaria can provide useful data for disease prevention and control.

Global change includes climate change and climate variability, land use, water storage and irrigation, human population growth and urbanisation, trade and travel, have impact on vector-borne diseases, including malaria³. Transmission of malaria from an endemic to a non-endemic area can be expected and this can affect the pattern of malaria epidemiology. Here, the author analyses and summarises the rate of malarial infection in the King Chulalongkorn Memorial

Hospital, a tertiary hospital of Thailand in the past decade (1996–2005). Change of epidemiology due to high rate of infection in non-Thai patients and importance of travel on the epidemiologists of malaria can be noted from this study.

Material & Methods

This study was designed as a descriptive retrospective study. A literature review of the papers concerning malaria in Thailand was analysed, using the database of published works cited in the *Index Medicus* and *Science Citation Index*.

The author also reviewed the published works in all 256 local Thai journals, which are not included in the *International Citation Index*. The literature review focused on the years 1996–2005. The key words for searching are ‘malaria’, ‘hospital’, ‘incidence’, and ‘Thailand’.

Out of 48 reports on malaria only four reports had complete data on malaria epidemiology in the King Chulalongkorn Memorial Hospital, a tertiary hospital and were recruited for further study. The details of the patient epidemiology focusing on the nationality in all included reports were studied. Descriptive statistics were used in analysing the patient characteristics. All the statistical analyses in this study were made using SPSS 7.0 for Windows.

Results

There are four included reports^{4–7} covering 786 cases of malaria (564 males and 222 females). The highest incidence is found in the age group 20–30 yr. Out of 786 cases, 500 had falciparum malaria (244 Thais, 256 foreigners), 244 had vivax malaria (170 Thais, 74 foreigners) and 42 had mixed vivax-falciparum infection (16 Thais, 26 foreigners). In overall 786 cases of malaria, there are 366 foreigner cases (284 males and 82 females), giving the rate equal to 46.6% (Table 1). Out of 366 foreigners, 359 are migrant workers (all

from Asia) and seven are tourists (2 from Asia and 5 from Europe).

Discussion

Malaria is the most important parasitic disease, affecting over 200 million people and causing more than one million deaths each year. Southeast Asia including Thailand is still the endemic area for malaria. In Thailand, this disease is still prevalent in some distant area. For decades, malaria in Thailand has been largely confined to rural areas principally along the borders with Cambodia and Myanmar^{8–10}. However, number of cases has decreased due to the use of effective drug regimens.

Due to the present rapid industrial growth, the effect of the population migration on the epidemiology pattern of malaria can be expected. It has recently been reported on the effect of the immigration on the malaria in a rural district of Thailand¹¹. Therefore, the study of the home-towns of the patients with diagnosis of malaria can be a useful baseline data in epidemiology. Here, we focused our study on the reported registry data of the tertiary hospital in Thailand. The rate of malarial infection among foreigners in a tertiary hospital of Thailand in the past decade

Table 1. Reports of malaria epidemiology in a tertiary hospital during 1996–2005

Report	Setting*	No. of malarial cases	No. of malarial cases in foreigners
Sukrasmita	Smutsakhon	200	155
Junnoy	Tak	200	145
Angkasekwinai	Kanchanburi	224	49
Wiwanitkit	Bangkok	162	17
Total		786	366

*The rate of infection is different in each setting. The settings with high number of migrants workers (Smutsakhon and Tak) have significant higher numbers of foreigner cases.

(1996–2005) was studied.

Of interest, although there are a huge number of studies relating to malaria in Thailand, only a few reports are available on malaria epidemiology and rate of infection among the foreigners admitted to the hospital. According to this study, there are two groups of foreigners who got malaria in Thailand. Concerning the first group, the migrant workers from the nearby countries, the infections were firstly detected in Thailand without previous history of diagnosis or treatment in their home-country. Of interest, these cases comprise of a large proportion of registry malaria cases. The high prevalence of falciparum malaria is also reported in these workers. It is suspected that they were not detected for malaria in their respective countries.

Apart from some generally mentioned problems in malaria control in Thailand as technical, operational and social obstacles⁹, a possible cause of this phenomenon may be due to the imported cases of malaria through the migrants. Presently, thousands of migrant workers live in Thailand, working as labourers. A number of these workers are illegal. Also, these workers usually act as a carrier of many diseases including malaria¹¹. Further studies are indicated to understand the role of imported infection in Thailand. A hyperendemic situation with an annual incidence rate of 600/1000 was reported in Karen migrants in Thailand in 1988¹². Fortunately, after the recent national policy for control of migrant workers, the annual incidence of malaria was decreased. A recent study in 2002 showed that prevalence rate is also lower than the previous period in migrants¹¹. Therefore, control and screening programme for these migrant workers are necessary. Treatment by antimalarial drug for all infected cases before giving work-permit is needed.

In regard to other group, the foreign tourists who visited Thailand, some cases of malaria can be detected. The malaria among foreign tourists becomes a new emerging problem after the starting of tourism

promotion in Thailand in 1998¹³. Before this period, nearly null prevalence of malaria among foreign tourists was documented. Though the total number of cases are not high, but the necessity for chemoprophylaxis for the travellers is indicated¹⁴. Since, travelling is the present main business for Thailand, the information for the primary health prevention should be included in the promotion for tourism. Because the tourists have no immunity to many tropical diseases, which is still prevalent in Thailand, the physicians who get the consultation from the foreign tourists should be aware for these diseases. Special precautions for the tourists who plan for travelling into endemic forest areas are strongly recommended.

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