Brugia timori INFECTION IN LEKEBAI, FLORES.
clinical aspects
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ABSTRACT


INTRODUCTION

Information regarding distribution of filariasis due to Timor microfilaria (David and Edeson, 1965) or Brugia timori (Partono, et al, 1977a) in Indonesia is limited. This observation which was done in February 1975 to determine the current status of filariasis in the Flores Island was a continuation of a series of filariasis surveys conducted by the Directorate General of Communicable Disease Control, Ministry of Health, relating to the collection of the base-line data for the National Filariasis Control Program. The observation laid emphasis on the clinical aspects of the disease.

The sub-village Nualolo-Lekebai surveyed is situated in the Sikka Regency of the Province of East Nusatenggara in the island of Flores. This area is a fertile valley with an altitude of 100-200 meters above sea-level and located at about 30 kilometers to the southeast of Mau-mere, the capital of the Regency (Figure). Inhabitants of the sub-village surveyed were all indigenous population of the Flores Island; most of whom were converted to Christianity. The sub-village consisted of 107 families with a total population of 680. The average number of person for each family was 6.4 persons.

Corn farming was the primary occupation of the villagers. Most of the daily chores in the family were done by girls and their mothers. The women travelled long distances on foot to the fields and to the market while most of the men travelled on horseback. The life style of the community found that women were more exhausted than the men in their daily activities. It was also found that women suffered higher rate of clinical symptoms of the disease than men and the results are presented in this paper.

MATERIALS AND METHODS

Blood specimens for parasitological study
were obtained from finger tips of the whole members of each family, except babies of less than 6 months old. A measured 20 mm$^3$ of blood was drawn with a Hb-pipette between 20.00 hours and 24.00 hours and a thick film was made. Blood films were dried overnight, haemolyzed and stained in the next morning in buffered Giemsa solution (10 cc of Giemsa stock solution in 140 cc of buffered water pH 7.2) for 15 minutes. The total microfilariae and the species of the parasite were recorded by using microscope.

A clinical study was made by recording the symptoms of filariasis: retrograde lymphangitis, lymphadenitis, abscess, elephantiasis of legs and scrotum and hydrocele, on the whole members of each family in the surveyed area.

**RESULTS**

A total of 601 or 88.4% of the 680 villagers in the sub-village Nualolo-Lekebai were examined for filarial parasites and 7.0% of them were found infected with *B. timori* (Table). The parasite density with more than 10 microfilariae was observed in 33.3% of the examined population as compared to 66.7% with less than 10 microfilarial count per 20 mm$^3$ of blood examined. The highest count was 95 microfilariae in 20 mm$^3$ blood. The youngest person infected was a 2 years old boy. Of 290 males examined, 9.7% were infected as compared to 4.5% infection in 311 females. The frequency of microfilaraemia was considerably high in the 40–49 age-group.

Clinical examination of the 601 villagers revealed 10.3% with the symptom of elephantiasis of the legs below the knees (Table) and the youngest patient was a 12 years old boy. Symptoms of retrograde lymphangitis and lymphadenitis with or without abscess were shown in 17.8% and no symptoms of hydrocele and elephantiasis of scrotum were detected. The symptom of elephantiasis was found in 7.6% of 290 males as compared to 12.9% of 311 females examined. The difference between these two observed percentages was 2.2 times its standard error. The frequency of elephantiasis cases was considerably high in the 20–29 age-group.

**DISCUSSION**

*B. timori* as Timor microfilaria was first identified in the East Timor Province of the island of Timor (David and Edeson, 1965). The distribution of this species of filaria in Timor and Rote islands of the East Nusatenggara Province was also reported by Sri Oemijati and Partono (1971) and its distribution in Indonesia was reported by Joesoef and Cross (1978a, b).

David and Edeson (1965) found both the microfilaraemia rate and the microfilarial count were low among the villagers in the endemic area. Later Sri Oemijati and Partono (1971) confirmed the observation made by them. The same result was also found in this observation. In subsequent years similar observations again were made by Joesoef and Cross (1978b) and Joesoef and Dennis (1980). The microfilarial rate in Karakuak Village of West Flores, using finger prick and nucleopore filtration techniques was 24% and 30% respectively (Partono, et al., 1978) which was 4½ times higher than the present sub-village surveyed. The comparative result indicates that the microfilarial rate varies from village to village. Atmosejono, et al., (1977) reported that a high percentage of *Anopheles barbirostris* examined was infected with the infective larvae of *B. timori* in
Flores Island. The low microfilarial rate in the reported surveyed areas above could be due to a low frequency of vector-man contact in each area. Further investigation is needed to study the ecology of the vector in relation to its transmission dynamics.

Observation made on the transmigrants in Kalawara, Central Sulawesi, showed that there were remarkably high number of Javanese transmigrants suffering from the symptom of elephantiasis with low microfilaraemia rate as compared to the Javanese transmigrants born in this endemic area (Tesch, 1937). It seems that the factor of susceptibility of the people coming from non-endemic areas accelerating the development of the symptom of elephantiasis among themselves when they have settled in the endemic areas. On the other hand, Partono, et al (1977b) observed the acute clinical symptoms of *B. malayi* infection were precipitated by strenuous labour in the field and the recurrent attacks of these acute symptoms precipitated the manifestation of elephantiasis. In this observation, since the male and female populations are indigenous population in the same endemic area, the higher number of female with the symptom of elephantiasis as compared to male population might be caused by the lifestyle on the physical exercise behavioral pattern of the female population in that community rather than the factor of susceptibility among the infected cases. It is suggested that further study is needed to confirm such observation.

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REFERENCES


Figure. MAP OF THE STUDY AREA