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Prevalence of filarial parasites in domestic and stray cats in Selangor State, Malaysia

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ABSTRACT

Objective: To determine the prevalence of the filarial parasites, *ie.*, *Brugia malayi*, *Brugia pahangi* (*B. pahangi*), *Dirofilaria immitis* and *Dirofilaria repens* (*D. repens*) in domestic and stray cats.**Methods:** A total of 170 blood sample were collected from domestic and stray cats and examined for filarial worm parasites in two localities, Pulau Carey and Bukit Gasing, Selangor State, Malaysia.**Results:** The overall prevalence of infection was 23.5% (40/170; 95% CI = 17.4–30.6). Of this, 35% (14/40; 95% CI = 22.1–50.5) and 50% (20/40; 95% CI = 35.2–64.8) were positive for single *B. pahangi* and *D. repens*, respectively. The remaining of 15% (6/40; 95% CI = 7.1–29.1) were positive for mixed *B. pahangi* and *D. repens*. In addition, 75% of the infected cats were domestic, and 25% were strays. No *Brugia malayi* and *Dirofilaria immitis* was detected. Eighty-four cats were captured at Pulau Carey, of which 35.7% (30/84) were infected. Among the cats determined to be infected, 93% (28/30; 95% CI = 78.7–98.2) were domestic, and only 6.7% (2/30; 95% CI = 19.0–21.3) were strays. Conversely, the number of infected cats was three times lower in Bukit Gasing than in Pulau Carey, and most of the cats were stray.**Conclusions:** *B. pahangi* and *D. repens* could be the major parasites underlying filariasis in the study area. Adequate prophylactic plans should be administrated in the cat population in study area.

1. Introduction

Cats, dogs, and leaf monkeys are among the known animal hosts that serve as reservoirs for *Brugian* filarial parasites [1]. Numerous published reports on zoonotic filariae involving cats have originated from several countries including Thailand [2], Indonesia [3], the Philippines [4], and other Southeast Asian countries [5,6]. In the endemic regions, both domestic and stray cats have been reported to be infected with several filarial parasites, such as *Brugia malayi* (*B. malayi*), *Brugia pahangi* (*B. pahangi*), *Dirofilaria immitis* (*D. immitis*) and *Dirofilaria repens* (*D. repens*) [2,7,8].

In Malaysia, domestic cats and leaf monkeys have been established as the primary reservoir hosts for these parasites [2].

The current investigation was prompted by the close association and proximity of cats and humans in Malaysia, as well as the evidence of possible natural infections of *B. pahangi* in man [3,9,10] and the possibility that *B. pahangi* infection in humans may be underestimated.

In humans, infection with *B. malayi* causes lymphatic filariasis [11]. Reports of experimental transmission of *B. pahangi* in humans have indicated that volunteers inoculated with *B. pahangi* not only developed microfilaria but also suffered from episodes of lymphangitis, lymphadenitis, and edema in the inoculated limb, each of which began approximately 1 month after the inoculation [12]. Human infection with *D. immitis*, on the other hand, is very rare, but when infection occurs, it is usually associated with pulmonary lesions or radiological coin lesions in the lung [13,14]. Moreover, humans may become infected with *D. repens* and present with subcutaneous nodules, pruriginous urticarioid patches, eosinophilia, photophobia, conjunctival irritation, and nodules or cysts in the eye or in the periocular tissues. Infection with

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