

Prevalence of *Bartonella henselae* Antibodies in Domestic Cats in Thailand

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ABSTRACT

A total of 34 serum samples collected from cats seen at Animal hospital, Faculty of Veterinary Medicine, Kasetsart University, Thailand during June to October 1996 were examined for antibody against *Bartonella henselae* using an Indirect Fluorescence Antibody (IFA). The prevalence of antibody was 32.3% in those cats. Moreover healthy human sera were also positive antibody. Our results showed higher prevalence of antibody than that in Japan, but similar to those in America.

Key words: *Bartonella henselae*, cat scratch disease, domestic cats, prevalence.

INTRODUCTION

Bartonella (*Rochalimaea*) *henselae* is a gram negative- rod bacteria (Brenner *et al.*,1993) and is the causative agent of Cat Scratch Disease (CSD) in humans. This disease was first described over 40 years ago by Debre *et al.*(1950) in France. Cats are known to be a major reservoir for *Bartonella henselae* and their association with the occurrence of CSD has been established (Carithers. 1985). Unlike humans, however *Bartonella henselae* infected cats show no clinical signs (Koehler *et al.*,1994; Regnery *et al.*,1992). Although there have been many reports from other countries (Childs *et al.*,1994; Demers *et al.*,1995; Koehler *et al.*,1994; Regnery *et al.*,1992a,b, ; Zangwill *et al.*,1993; Ueno *et al.*,1995), no such information is available in Thailand. This report is the prevalence of antibody against *Bartonella henselae* in domestic cats in Thailand.

MATERIALS AND METHODS

Cat and human sera. Thirty four cat serum samples were collected from cats visiting our University Animal Hospital for various medical serious during June to October 1996. All of them except two were female with an average age of one year. Fifty human sera samples were provided by the Thai National Institute of Health. They were collected from individual healthy age ranging from 12 - 76 years old, 21 males and 29 females.

Serology Antibody titers in serum samples against *Bartonella henselae* were determined using an indirect immunofluorescence antibody (IFA) test. *Bartonella henselae* (ATCC 49852) was cultivated with *Felis catus* whole fetus (FCWF) cells in complete cell culture media for antigen preparation. Antigen coated slides were prepared following the method of Chomel *et al.*(1995). Positive sera control was from the human CSD patient and CSD infected cat.

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Indirect Fluorescence Antibody Assay.

All serum samples were evaluated for antibody by IFA (Regnery *et al.*, 1992). Samples were inactivated at 56°C for 30 minutes and then serially diluted in PBS containing 5% skim milk, 30 µl of the diluted serum sample was applied to each well of the antigen slide. Positive and negative controls were included in each slide. The antigen slide was then placed in a moisture box at 35°C for 40 minutes. After washing the slide 5 min. with PBS, 30 µl of a fluorescent isothiocyanate conjugated anti cat IgG goat serum was applied to each well. The slides were further incubated in a moisture box at 35°C for another 40 minutes. After washing with PBS and rinsed with distilled water, the slide was observed by fluorescent microscope with magnification×200 for the fluorescence of bacteria. Fluorescence at a dilution of 1:64 or high was considered to be a positive result.

RESULTS

Out of 34 cats, 11(32.3%) were found to be antibody positive. Two positive cats possessed antibody titer as high as 1:256. Although most of them had antibody titer of 1:64 (Table 1). Prevalence of antibody to *Bartonella henselae* in human sera was 12% (6/50). Only one (2%) showed antibody with a titer of 1:64, and the rest (10%) had a titer of 1:128 (Table 2).

DISCUSSIONS

Our findings show for the first time in Thailand. The prevalence of *Bartonella henselae* antibody in domestic cats, since most of the recently investigated cases of CSD indication of an exposure the association between cats and the disease (Chomel *et al.*, 1995; Ueno *et al.*, 1995), it is possible that the same things could happen here in Thailand. Our results showed 32.3% (11/34) of antibody to *Bartonella henselae* in domestic cats and 12% (6/50) in healthy human sera, which is comparable to that reported from the Pacific Northwest of United States (Jameson *et al.*, 1995).

Demers *et al.* (1995) had reported only 1 of 48 human control subjects with no known previous cat exposure had antibody to *Bartonella henselae* with a titer of 1:64 and also reported that 67% (21/31) of kittens (less than 1 year old) had positive blood culture and antibody to *Bartonella henselae*. Additionally, 78% (18/23) of adult stray cats had positive IFA test. However, Ueno *et al.* (1995) found only 15% of antibody positive in Japanese domestic cats. The seroprevalence of *Bartonella henselae* in cats varies throughout the areas and appears to be influenced by climate (Jameson *et al.*, 1995). Thailand is the warm humid country which is favorable for the existence of potential arthropod vectors and this might enhance the transmission of *Bartonella henselae* infection (Zangwill *et al.*, 1993).

This is a preliminary study of Cat Scratch Disease in Thailand. We need to investigate further

Table 1 Prevalence of antibody to *Bartonella henselae* in 34 domestic cats.

Titer of antibody	64	128	256	512	1024
No. of seropositive	5	4	2	-	-
%	14.7	11.7	5.8		

Table 2 Prevalence of antibody to *Bartonella henselae* in 50 human sera.

Titer of antibody	64	128	256	512	1024
No. of seropositive	1	5	-	-	-
%	2	10			

as to whether antibody positive cat harbour *Bartonella henselae*. Surveillance of CSD in the owners of *Bartonella henselae* infected should also be exercised.

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