
RESEARCH NOTE

Infestation by Ticks and Detection of Antibodies to Spotted Fever Group Rickettsiae in Wild Animals Captured in the State of São Paulo, Brazil. A Preliminary Report

Elba Regina Sampaio de Lemos^{+/},
Raimundo Diogo Machado*, José
Rodrigues Coura, Maria Angélica
Arpon Guimarães*, Nicolau Maués
Serra Freire**

Departamento de Medicina Tropical **Laboratório de Ixodides, Departamento de Entomologia, Instituto Oswaldo Cruz, Av. Brasil 4365, 21045-900 Rio de Janeiro, RJ, Brasil *Departamento de Virologia, Instituto de Microbiologia, Universidade Federal do Rio de Janeiro, Cidade Universitária, 21941-590 Rio de Janeiro, RJ, Brasil

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Since 1985 several human cases of Brazilian spotted fever, an acute infectious disease of variable severity, has been reported in the county of Pedreira, State of São Paulo. Since humans are accidental victims, the epidemiology of this tick-borne rickettsiosis depends primarily on the species and ecology of the tick vector involved and its mammal hosts. Several species of ticks have been recognized as natural carriers of *Rickettsia rickettsii*, but *Amblyomma cajennense* is the most important vector in Brazil.

Considering the scarce available information on this rickettsiosis in Brazil, we designed a multidisciplinary project in an endemic area in Pedreira. As part of this project we attempted to determine the significance of wild animals caught near human settlements, where rickettsiosis transmission foci for active transmission had been de-

tected (ERS Lemos et al. 1996 *Mem Inst Oswaldo Cruz* 91: 273-275).

A total of 605 ticks were collected from 14 animals belonging to four different species (*Hydrochaeris hydrochaeris*, *Myocastor coypus bonariensis*, *Rattus norvegicus* and *Didelphis marsupialis*) (Table). These animals were caught alive in special traps and were bled from the brachium vein (capibara) or from the heart (small animals). After collecting ticks and bleeding all animals were freed in same place where they were captured. After taxonomic identification, ticks were inoculated onto fresh monolayers of Vero cells for isolation. In an effort to analyse the presence of antibodies from sera of animals, a blocking immunofluorescence test was done with antigens *R. rickettsii* obtained from Vero cell cultures prepared at the Center for Disease Control, Atlanta, Georgia. This modified test was used to detect blocked antibodies because FITC-labeled of some anti-wild animals immunoglobulins were difficult to produce in hyper-immunized rabbits. Serial dilutions of animal sera ranging from 1:4 to 1:64 were placed on the antigen, incubated at 37°C for 30 min, and washed in phosphate buffered saline (PBS). Next, slides were incubated with a positive human sera in a 1:20 dilution for 30 min. After this step, a goat conjugate of anti-human immunoglobulin (Ig) was used. A positive sera of horse was used as positive control. Slides were examined with a Zeiss fluorescence microscope and sera titre without fluorescence was considered positive.

In spite of the small number of animals, it is worth of note that ectoparasites were abundant. Furthermore, a spotted fever group rickettsia was isolated from three *A. cooperi* ixodids collected from one of the two seroreactive (1:16) *H. hydrochaeris* (capibara) (Lemos et al. *loc. cit.*). All isolation attempts from blood of wild animals were negative.

To further clarify serologic results and other informations mentioned in this preliminary report, studies will continue and specific anti-wild animals reagent will be prepared, mainly anti-capibara reagent.

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⁺Corresponding author. Fax: +55-21-280.3740

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TABLE
 Infestations of ticks and prevalence of infection with SGF rickettsiae in 14 animals captured in the county of Pedreira, State of São Paulo, Brazil (1994)

Specie of animal (No.)	No. of			No. of reagent sera and title-blockade IFA				
	<i>Amblyomma cajennense</i>	<i>Amblyomma cooperi</i>	<i>Amblyomma triste</i>	1:4	1:8	1:16	1:32	1:64
<i>Hydrochaeris hydrochaeris</i> (7)	393	152	0	1	0	2	0	0
<i>Myocastor coypus</i> (3)	35	0	0	1	0	0	0	0
<i>Didelphis marsupialis</i> (3)	22	0	3	0	0	0	0	0
<i>Rattus norvegicus</i> (1)	0	0	0	1	0	0	0	0

SGF: spotted fever group

blockade IFA: blockade of the indirect immunofluorescence antibody