

EXPERIMENTAL INFECTION OF *LUTZOMYIA LONGIPALPIS* FED ON A  
PATIENT WITH CUTANEOUS LEISHMANIASIS DUE TO  
*LEISHMANIA MEXICANA AMAZONENSIS*

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*The Authors were able to infect phlebotomine sandflies on a human case of American Cutaneous Leishmaniasis by feeding females of Lutzomyia longipalpis on a patient with a lesion due to Leishmania mexicana amazonensis.*

Key words: Cutaneous Leishmaniasis – *Lutzomyia longipalpis* – *Leishmania mexicana amazonensis*

In order to investigate the possibility of humans being a source of infection in the epidemiology of American Cutaneous Leishmaniasis, we submitted a series of patients to xenodiagnosis with phlebotomine sandflies.

Up to the present the test was performed on fourteen patients. In the first thirteen the infection had been acquired in various localities of the municipality of Rio de Janeiro, the lesions being nodular in two and ulcers in the remaining eleven. Smears from all showed few amastigotes. The agent was identified as *Leishmania braziliensis braziliensis* by both serodeme analysis based on its characteristic reactivity with *L. braziliensis* species and subspecies specific monoclonal antibodies using an indirect radioimmune binding assay, and by zymodeme analysis (isoenzyme characterization).

The fourteenth patient is a resident of another municipality, Angra dos Reis, Rio de Janeiro State, but had spent six days in the municipality of Pedro Gomes, Mato Grosso do Sul State, from where he returned to Angra dos Reis six weeks before the onset of the disease. The lesion is located on the nose, which is swollen, deeply reddish and non ulcerated. Abundant, large amastigotes were found in smears made from biopsies and luxuriant cultures were obtained in NNN. The parasite was identified as *Leishmania mexicana amazonensis*, also by serodeme and zymodeme analysis.

The sandflies used came from the closed colonies of *Lutzomyia intermedia* and *Lu. longipalpis* maintained in the Department of Entomology. These species are, respectively, the vectors of cutaneous leishmaniasis due to *L. braziliensis braziliensis* and of visceral leishmaniasis, in Rio de Janeiro.

The xenodiagnosis tests were performed by placing small cups with hungry female sandflies on the non ulcerated lesions or on the clean outer margins of the ulcers. After 30-40 minutes, the blood-engorged females were transferred to individual tubes and kept in the insectary at  $25 \pm 1^\circ\text{C}$  and 90% humidity, on a diet of sugar solution.

Dissections for the search of flagellates in the intestine of the sandflies were carried out on the 4th and 5th days after the blood meal in the insects fed on patients 1 to 13 and from the 2nd to the 6th day in those engorged on patient 14.

No infection was found in 136 *Lu. intermedia* and 522 *Lu. longipalpis* fed on patients 1 to 13. Of the xenodiagnosis performed on patient 14, 30 *Lu. intermedia* examined on days 4 and 5 were negative, but with *Lu. longipalpis* the results were the following:

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<i>Day</i>	<i>Sandflies dissected</i>	<i>Sandflies positive</i>
2	5	1
3	8	1
4	10	3
5	10	3
6	7	2
<hr/> Total	<hr/> 40	<hr/> 10

On the 2nd day a moderate number of promastigotes were seen in the midgut, but from the 3rd day on they had become abundant and since the 4th day masses of flagellates had reached the oesophageal valve. In all positive sandflies the infection was of the suprapylarian type, no parasites being detected in the pylorus, Malpighian tubules or the rest of the hindgut.

Although *Lu. longipalpis* is not a vector of cutaneous leishmaniasis in nature, the present experiments indicate that human cases of the disease can be a source of infection for sandflies.

#### RESUMO

Os Autores lograram infectar flebótomos em um caso humano de leishmaniose tegumentar americana fazendo fêmeas de *Lutzomyia longipalpis* se alimentarem em paciente com lesão devida à *Leishmania mexicana amazonensis*.