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Letter to the Editor

Hantavirus infection in HIV positive individuals in Rio de Janeiro, Brazil: a seroprevalence study

Dear Editor,

Hantaviral pulmonary syndrome (HPS) is a group of zoonosis caused by infected rodents described in the Americas. Human infection becomes more likely with the disturbance of the natural habitats of these rodents through deforestation for building and agriculture.¹ Several rodent species adapt to living in the surroundings of human dwellings, proliferating excessively.² Although documented in two bordering states, Minas Gerais (the first most affected Brazilian state) and São Paulo, HPS has not been documented in the State of Rio de Janeiro, where hantavirus Jucuitiba had been characterized in sigmodontine rodents *Oligoryzomys nigripes*,³ and antibody reactivity to hantavirus has been identified in 9.3% of the patients with clinical suspicion of leptospirosis (Elba Lemos, personal communication). The present study was performed on serum samples obtained from HIV-positive patients and healthy blood donors living in a potentially high-exposure area, Jacarepaguá, a forested part of the city of Rio de Janeiro, Brazil, where the world's largest urban forest, the Atlantic Rainforest, is located. This seroprevalence study was part of a more complete tick- and rodent-borne zoonosis serosurvey done in 2005 in Rio de Janeiro, with partially published results.⁴ Because no reports in the literature were found regarding HIV-positive individuals and hantavirus infection, this report is unprecedented in this respect.

ELISA with the recombinant nucleocapsid protein of Araraquara virus was used for hantavirus IgG detection in HIV-positive individuals.⁵ These were outpatients who had no concomitant opportunistic disease and had their HIV status under control.

One hundred twenty-five patients were included; mean age \pm standard deviation was 37.1 ± 10.1 years; 61 were male. 94/125 (75%) were on anti-retroviral therapy; 47 (37.6%) lived in houses with backyards and 32 (25.6%) next to preserved forests. Rodent contact was reported by 65 (52%); occupational exposure by 37 (29.6%). Walking through forest tracks was a habit for 33 (26.4%). A control group, blood donors, paired by age and sex, was tested. Of the 125 sera tested, 2 (1.6%) patients presented titers above $\geq 1:400$ for the Araraquara virus and

none of the controls were reagent. One of the patients was a female aged 33 years, born and bred in Rio de Janeiro; she was a housewife and noted the continued presence of rodents in her backyard. Her house was visited by the investigators, and next to it, there was a shack crowded with bricks, old furniture, wood and other litter. She, occasionally, swepted the area. The second hantavirus-positive patient was a 38-year-old construction worker, born and bred in inner land Piauí, a state in the northeast of Brazil. As a child and teenager he worked on a small farm. He had moved to Rio 8 years before and lived in precarious conditions (often sleeping on the floor of wooden shacks) during construction jobs, mostly in the west zone of Rio (Recreio, Jacarepaguá, Vargem Grande).

The results shows that *Hantavirus* circulates in this forested area of Rio de Janeiro and that hantavirus infection should be considered in HIV positive patients.

Conflict of interest

The authors have no conflict of interest to declare.

REFERENCES

- Cutler SJ, Fooks AR, van der Poel WH. Public health threat of new, reemerging, and neglected zoonoses in the industrialized world. *Emerg Infect Dis.* 2010;16:1-7.
- Calderón G, Pini N, Bolpe J, et al. Hantavirus reservoir hosts associated with peridomestic habitats in Argentina. *Emerg Infect Dis.* 1999;5:792-7.
- Oliveira RC, Teixeira BR, Mello FC, et al. Genetic characterization of a Jucuitiba-like viral lineage in *Oligoryzomys nigripes* in Rio de Janeiro, Brazil. *Acta Trop.* 2009;112:212-8.
- Lamas CC, Mares-Guia MA, Rozental T, et al. *Bartonella* spp. infection in HIV positive individuals, their pets and ectoparasites in Rio de Janeiro, Brazil: serological and molecular study. *Acta Trop.* 2010;115:137-41.
- Figueiredo LT, Moreli ML, Borges AA, et al. Evaluation of an enzyme-linked immunosorbent assay based on Araraquara

virus recombinant nucleocapsid protein. *Am J Trop Med Hyg.* 2009;81:273–6.

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