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

Dear Editor,

Hantaviral pulmonary syndrome (HPS) is a group of zoonoses caused by infected rodents described in the Americas. Human infection becomes more likely with the disturbance of the natural habitats of these rodents through deforesting for building and agriculture. Several rodent species adapt to living in the surroundings of human dwellings, proliferating exceptionally. 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 Juquitiba had been characterized in sigmodontine rodents Oligoryzomys nigripes, 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. 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. 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 ± 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 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, swept 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 show 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

5. Figueiredo LT, Moreli ML, Borges AA, et al. Evaluation of an enzyme-linked immunosorbent assay based on Araraquara...

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Received 8 July 2012
Accepted 27 July 2012
Available online 1 January 2013