LANDSCAPE ECOLOGY AND EPIDEMIOLOGY OF HANTAVIRUSIS IN SÃO PAULO STATE.

Theme: Biodiversity conservation indicators

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Introduction: Hantavirus infection is an emerging diseases occurring due environmental changes caused by human disturbance. Rodents are natural hosts and reservoirs of Hantavirus. Virus circulation among rodent populations is crucial for its maintenance. The occurrence of hantavirus infections in humans is assumed to rise as a secondary effect from altered population sizes of rodents in a changing environment due to e.g. mast years, forest fragmentation, global warming. Landscape ecology, which deals with the mosaic structure of landscapes and ecosystems, considers the spatial heterogeneity of biotic and abiotic components as the underlying mechanism which determines the structure of ecosystems. Spatial statistics are tools to analyze and integrate the spatial component in epidemiology of zoonotics diseases into research, surveillance, and control programs based on a landscape ecology approach. Objective: to understand spatial and temporal distribution of Hantavirusis in São Paulo State and to raise data on landscape ecology of the probable areas of infection. Materials and Methods: We used epidemiological data and the historical pattern of land use and land cover changes of the sites, spatial statistics and correlation analysis. Results: January 2002 to December 2009, a total of 983 cases of hantavirus pulmonary syndrome have been reported in the Brazil. Thirty-eight percent of all reported cases have resulted in death. Of persons ill with HPS, 77% have been male, 23% female. The mean age of confirmed case patients is 33 years (range: 3 to 80 years). Cases have been reported in Rondônia, Amazonas, Pará, Maranhão, Rio Grande do Norte, Bahia, Minas Gerais, São Paulo, Paraná, Santa Catarina, Rio Grande do Sul, Mato Grosso, Mato Grosso do Sul, Distrito Federal, Goiás State. In São Paulo, from 1993 to August 2010, 168 cases of HPS were reported and the epidemiological profile is similar to the national one. Discussion: Eighty percent of counties in which cases have occurred have less than 15% of native forest vegetation, divided in small fragments surrounded by monocultures, mainly cane sugar, reaching the periphery of cities. The predators of voles to have their unbalanced ecosystems by human actions simply come into population decline, the predation pressure on voles population will decrease. That disequilibrium can cause rodent population increasing in rural and peri-urban areas, with monoculture surrounding forest fragments. Conclusion: that scenario provides locomotion, habitat and food conditions for those rodents, which has been closer and closer to the periphery of cities, increasing the HPS risk to urban population.

Key-words: Hantavirusis, landscape ecology, epidemiology, land cover changes