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Elevated incidence of HTLV-1 infection in a highly inbred human population inhabiting the center of Marajo Island in the debouchment of Amazon river, Brazil

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The Human T cell Lymphotropic virus type 1 (retroviridae, deltaretrovirus) is etiologically linked to Adult T-cell leukemia/lymphoma and inflammatory neuromyelopathies (HAM/TSP). Few as 5 % of HTLV-1 infected individuals progresses to any retroviral related disease as also it is not yet understood the controversial pathogenic nature of HTLV-1. In 1991 we identified for the first time an elevated level of HTLV-1 infection in Santa Cruz do Arari county (Pará, Brazil). After 18 years we accessed the same population and confirmed the high increasing incidence of HTLV-1 infection in the population. Of 281 subjects analyzed, 8 (2.84 %) reacted positively by the ELISA assay (Murex HTLV-I/II Bioteck Limited, UK) and confirmed to be HTLV-1 by the Western blot test (HTLV 2.4 DBL, Singapore), as previously all serologically confirmed samples amplified and hybridized to HTLV-1-*ltr-gag-tax*. We speculate that 2 factors could strongly account for the elevated HTLV-1 infection in Santa Cruz do Arari community: the high consanguinity among them and the geographical isolation imposed by the distance by fluvial transportation (12-18 hours) to the main city (Belém, Pará, Brazil). Santa Cruz do Arari county is spread out in two geographically communicated and very near areas (Santa Cruz do Arari and Jenipapo). Curiously, all positive subjects live in the area near a lake (Santa Cruz do Arari) in contrast to the other area (Jenipapo) that is inundated by the surrounding river during the rainy season, exposing the people to unhealthy conditions as the human and animals dejects flow to the river. Usually the community in Jenipapo utilize the water from the river and they also swim in the contaminated river. Presently we are investigating the possible involvement of the river microbiota, mainly coliform bacteria and their phages, in the defense mechanism toward a particular HTLV-1 infection in the community here investigated.

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