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Mary Ann Liebert, Inc., Publishers

Letter to the Editor
Reappraisal of Human Retroviral Infection in Venezuela

To the Editor:

Two major groups of retroviruses, whose distribution varies geographically, are the cause of several human diseases.[1] The human T-lymphotropic virus type I (HTLV-I) is the etiologic agent for both adult T-cell leukemia/lymphoma and HTLV-I-associated myelopathy. HTLV-II has been linked to a certain type of hairy cell leukemia; however, its role in disease remains uncertain. HTLV-I is endemic in Japan, the Caribbean, and Africa; while both HTLV-I and HTLV-II have been reported in the United States and Italy, predominantly among intravenous drug abusers. Recently, HTLV-II infection has been demonstrated among certain American Indian groups in the United States[2] and Panama.[3] The human immunodeficiency virus types 1 and 2 (HIV-1 and HIV-2) are the agents for acquired immunodeficiency syndrome (AIDS). Both viruses are highly prevalent in Africa. In Europe, HIV-1 is more prevalent than HIV-2 and in the United States almost all cases of AIDS are due to HIV-1. Understanding the prevalence of these retroviruses in South America is important with regard to determining their origin and mode of transmission to different geographic regions due to the continent's ethnic heritage, native Indian populations, and geographic proximity to the Caribbean.

To further assess human retroviral infection in Venezuela, serum samples from individuals of different risk groups were screened for HTLV-I/II using an HTLV-EIA (Abbott Laboratories). Repeatedly, reactive samples were confirmed for seropositivity by a combination of Western immunoblot and radioimmunoprecipitation.[4] Confirmed samples were typed as either HTLV-I or HTLV-II seropositive by EIA using a series of synthetic peptides coated onto the solid phase. Each peptide represented a region of 20 to 30 amino acids from the HTLV-I or HTLV-II envelope or core proteins. Samples also were screened for HIV-1/2 using either a recombinant HIV-1 EIA (Abbott Laboratories) or Vironostika (Organon-Teknika). All repeatedly reactive specimens were confirmed for seropositivity by Western immunoblot for HIV-1. Additionally, specimens from 147 male homosexuals selected by epidemiology and/or HIV-1 indeterminate immunoblot patterns along with 10 specimens HIV-1 EIA weakly reactive but immunoblot negative from Amerindians were also tested with reagents specific for HIV-2, Lav-blot II, and Peptilav (Pasteur Diagnostics).[5]

Serum specimens (as indicated in Table 1) were tested from low-risk populations which included 2,014 healthy mestizos (a racial mixture of Spanish, Amerindian, and African which characterizes most of the Latin American population), ages 1 to 76 years and their places of residence represented the entire country. The low-risk populations also included 305 Amerindians from five different ethnic groups and 1,589 blood donors. The high-risk population tested included 315 male homosexuals and 99 female prostitutes. A seroprevalence of 0.39% for HTLV-I/II was found among the mestizos and all were typed as HTLV-I. No clustering was observed since each of the infected individuals originated from different states. Women had a higher rate of HTLV-I seroprevalence (0.48%) than men (0.26%). Overall seroprevalence increased with age; individuals at the ages 0–19 years, 20–39 years and over 40 years had seroprevalences of 0.08%, 0.35%, and 1.46%, respectively. Among the blood donors, a seroprevalence of 0.13% for HIV-1/2 was found and all were typed as HIV-1. Among the Ameridians none were HTLV-I/II or HIV-1/2 seropositive. Among high-risk groups, 0.32% of male homosexuals were HTLV-I/II seropositive and all typed as HTLV-I; while 2.02% of female prostitutes were HTLV-I/II seropositive, with both HTLV-I and HTLV-II detected. Additionally, 30.79% of the homosexuals and 6.06% of the prostitutes were HIV-1/2 seropositive, with all typed as HIV-1.

This study demonstrated the presence of HTLV-I, HTLV-II, and HIV-1 infection but not HIV-2 in Venezuela. A low prevalence of retroviral infection was found among the general population of Venezuela, despite the close proximity to endemic areas.[1,6] Even in the coastal region of Barlovento, where African descendants are clustered, the seroprevalence is low. This is consistent with previous reports for HIV-1/2,[7,8] but not HTLV-I, which showed higher HTLV-I prevalences even among isolated tribes of Amerindians.[9,10] The differences may be due to the higher specificity of the screening test, the confirmation methodology and the stringent criteria for seropositivity used in the present study. Elevated rates of HIV-1 infection were found among high-risk groups such as female prostitutes and male homosexuals. Male homosexuals had HTLV-I infection rates similar to the low-risk populations, while elevated rates of HTLV-I/II infection were found among female prostitutes. Both HTLV-I and HTLV-II infection were found among female prostitutes. The finding of HTLV-II infection is important due to recent findings of HTLV-II being endemic among different Amerindian groups[2,3] and the possible relevance to the origin of HTLV-I and HTLV-II.

TABLE 1. SEROPREVALENCE OF HUMAN RETROVIRAL INFECTION IN DIFFERENT VENEZUELAN POPULATIONS

Population	*Number*	*HTLV-I (%)*	*HTLV-II (%)*	*HIV-1 (%)*	*HIV-2 (%)*
Blood donors	1,589	NT[a]	NT	2 (0.13)	NT
Male homosexuals	315	1 (0.32)	0	97 (30.79)	0[b]
Female prostitutes	99	1 (1.01)	1 (1.01)	6 (6.06)	NT
Amerindians	305	0	0	0	0[b]
Mestizos	2,014	8 (0.39)[a]	0	NT	NT

[a]NT = not tested.

[b]Serum specimens from 147 male homosexuals selected by epidemiology and/or HIV indeterminate immunoblot patterns along with 10 specimens HIV EIA weakly reactive but immunoblot negative from Amerindians were also tested with reagents specific for HIV-2, Lav-blot II and Peptilav (Pasteur Diagnostics).[5]

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G. Echeverria de Pérez
O. Loreto
N.E. Bianco
Institute of Immunology
Faculty of Medicine
Central University of Venezuela
Caracas, Venezuela

H. Méndez-Castellanos
Fundacredesa
Caracas, Venezuela

J.D. Burczak
H. Lee
Abbott Laboratories
North Chicago, IL