Seroprevalence of Human T-Lymphotropic Virus Type I (HTLV-I) in Costa Rica

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INFECTION WITH THE HUMAN T LYMPHOTROPIC virus type I (HTLV-I), a virus associated with two diseases, adult T-cell leukemia lymphoma¹ and tropical spastic paraparesis/HTLV-I associated myelopathy,² is prevalent in Panama³ and Colombia.⁴ To determine if HTLV-I is present in neighboring Costa Rica, we tested 436 sera from women who participated, between 1984 and 1985, in a case-control study of cervical cancer in Costa Rica.⁵ These sera were all that were still available to us from the 765 collected from control participants in the study. Study participants had all been interviewed and tested for several serologic markers of sexually transmitted diseases (STDs).

Tested women were similar to nontested control participants for age (range 25–59 years), ethnic group (predominantly caucasians and hispanics), sexual histories (measured by age at first sexual activity and lifetime number of sex partners), herpes simplex type 2 (HSV2) seroprevalence, and histories of STDs. All 436 sera were screened by a commercial HTLV-I enzyme-linked immunosorbent assay (ELISA) (Dupont Co., Wilmington, DE); all repeatably reactive sera were further tested by Western blot; sera with suspected HTLV-I reactivity on Western blot but not fulfilling the criteria for HTLV-I seropositivity (reactivity to p24 and an *env* gene product)⁶ were further tested by radioimmunoprecipitation assay. Seven sera (1.6%) were repeatably reactive by ELISA; 3 (0.68%) were positive for HTLV-I antibodies (to both p24 and gp46/or gp68); of the remaining ELISA reactive, 1 had reactivity to p19 only on Western blotting and 3 had no Western blot reactivity. The 3 HTLV-I-seropositive women were older (mean age 48) than HTLV-I seronegative women (mean age 40, $p = \text{NS}$ median two-sample test); they tended to be less educated and none lived in the densely populated capital area. All 3 were caucasian and they lived in different parts of the country; all 3 had lived, as children, in the same county (Canton). While none gave a history of any STD, 2 were reactive for syphilis by microhemagglutination assay for antibody to *Treponema pallidum* (MHATP), compared with 31 of 432 (7.2%) HTLV-I-seronegative women; all 3 were positive for HSV-2 antibodies, as were 196 of 426 (46%) HTLV-I-seronegative women; and all 3 were seropositive for *Chlamydia* (titer ≥ 16), as were 56.1% of HTLV-I-seronegative women.

To our knowledge, this report is the first to document HTLV-I seroprevalence in Costa Rica. A female predominance of HTLV-I seropositivity has been noted in virtually all endemic areas; by testing only women, we therefore most likely obtained a maximal estimate of the seroprevalence of HTLV-I in Costa Rica, which appears to be less than 1%. Our 0.68% rate is much lower than the rates that have been reported for other countries in the area including neighboring Panama.³ This difference in rates is due in part to the increased specificity of the HTLV-I serologic assays that we used;⁷ in fact, our rate for Costa Rica is similar to current estimates for Panama (W. Reeves, personal communication); the difference in rates may also be related to other differences between the populations of these countries. Our numbers are too small to allow any evaluation of risks; however, the relatively older age of the HTLV-I-seropositive women and the association with STD markers are consistent with a sexual mode of transmission.⁸

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