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PREVALENCE OF HTLV-I AND HTLV-II INFECTIONS AMONG HIV-1-INFECTED ASYMPTOMATIC INDIVIDUALS IN SÃO PAULO, BRAZIL

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SUMMARY

Human immunodeficiency virus (HIV-1)-infected subjects with acquired immunodeficiency syndrome (AIDS) are often infected with multiple pathogens. In particular, HTLV-I and HTLV-II infections have been found more frequently in AIDS patients than in asymptomatic individuals in Europe and Japan. We carried out a serosurvey among asymptomatic HIV-1-infected subjects in São Paulo, Brazil and compared our results with those of other investigators. In this study, we found HTLV infection in 1.5% of 266 asymptomatic and 14% of 28 AIDS patients. Epidemiological data obtained from patients pointed out the use of intravenous drugs as the principal risk factor for acquiring retroviruses. In conclusion, our results are in accordance with other studies done in Brazil and elsewhere where the principal risk group for HIV/HTLV-I/II coinfection was IDU.

KEYWORDS: HTLV-I; HTLV-II; HIV-1; Prevalence; Brazil; São Paulo.

INTRODUCTION

Infection with HIV-1 and HTLV-I and II occur in overlapping high risk populations resulting in coinfection. HATORI et al. reported HTLV infection rates of 58% and 23% in AIDS and asymptomatic HIV-infected Japanese hemophiliacs, respectively[8]. ZANETTI et al. reported HTLV infection rates of 8.2% and 4% in AIDS and asymptomatic HIV-infected Italian intravenous drug users (IDU)[13]. Homosexual men coinfected with HTLV-I and HIV in Trinidad-Tobago showed 2-3 fold faster disease progression than those singly infected with HIV[1]. Serosurveys conducted in Brazil among AIDS patients in Rio de Janeiro, São Paulo, and Salvador have shown HTLV-I/II antibody prevalence of 5.6%, 10% and 23%, respectively[2,4,10,11]. To determine if the HTLV infection rate in asymptomatic HIV-infected individuals is lower than among AIDS patients we evaluated the prevalence and risk factors of HTLV-I and HTLV-II infection among HIV-1-asymptomatic individuals from São Paulo in comparison with that found in Brazilian AIDS patients previously reported.

MATERIALS AND METHODS

A total of 266 HIV-1-positive sera from asymptomatic individuals (group II, CDC AIDS classification, 1986)[3], were tested for HTLV-I/II antibodies. Of these, 66 sera were from patients attending the Secondary Immunodeficiencies Outpatient Clinic, Immunology Division of Hospital das Clínicas, São Paulo University, and 200 sera were collected from October to December 1992 at the Counseling Center for Sexually Transmitted Diseases and AIDS (COAS). The age of the 231 men and 35 women ranged from 18 to 68 years (mean 30 years). Thirty-nine (15%) were IDU, 169 (63%) were homo/bisexual men, and 58 (22%) reported heterosexual partners. The sera were screened for HTLV-I/II antibodies using an enzyme immunoassay (EIA) (Hemobio ELISA anti-HTLV-I, Embrabio, SP, BR) and indirect immunofluorescence assay (IFA)[9]. All sera reactive on either or both, IFA and EIA were typed by IFA endpoint titration[10] and Western blot (HTLV 2.4, DBL, Singapore) techniques.

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RESULTS

Six out of 266 sera (2.2%) were reactive by EIA and four (1.5%) of these were reactive by IFA. Two were HTLV-I and two were HTLV-II by IFA endpoint titration and WB. The cases with discordant results were negative by Western blot and IFA. Thus, the HTLV prevalence rate in HIV-infected asymptomatic individuals from São Paulo was 1.5%.

According to epidemiological data, four dual positive specimens were from male IDU. We also tested using the same serological approach an additional 28 sera obtained from patients with AIDS (14 homo/bisexual men, 9 heterosexual, and 5 IDU). Four (14%) resulted positive for HTLV antibodies by IFA and WB (two cases presented sexual risk, were HTLV-I infected, and two IDU with HTLV-II infection, and another one with unkown risk had HTLV-II infection).

DISCUSSION

Several studies have been conducted to assess the prevalence of HTLV infection among Brazilian AIDS patients. CORTES et al. reported that 10% of men with AIDS were coinfected with HTLV in São Paulo[4]. SCHECHTER et al. reported an AIDS prevalence of 15% in coinfected patients compared to 3% singly infected with HIV in Rio de Janeiro[11]. MOREIRA et al. estimated a prevalence of 23% of HIV/HTLV coinfection in men with AIDS in Salvador, Brazil[10]. We did not detect HIV/HTLV coinfection in the asymptomatic homo/bisexual men in this cohort, and the 4 cases of HIV/HTLV coinfection were detected among IDU (4/39; 10%, p = 0.004, Fisher's exact-test). This result is in agreement with CATERINO-DE-ARAUJO et al. that described a high prevalence of coinfection (26.4%) was found among IDU with AIDS, as compared to 1.4% detected in homo/bisexual men with AIDS[2] from São Paulo.

The difference in prevalence of coinfection between the two groups analysed may be due to the more severe immunological abnormalities seen in AIDS patients resulting in enhanced susceptibility to HTLV infection. Another possibility is that coinfection results in accelerated disease progression[1]. A third possibility is that the period of overlapping risk behavior is greater in coinfected individuals. However, we did not observe significant differences in aging between the two groups (data not shown). *In vitro* studies have indicated that HTLV-I infection can enhance the expression of HIV-1[5]. One study suggested that HTLV-II may act as a cofactor in HIV infection and disease progression[9] whereas another showed no difference in the clinical course of HIV infected IDU coinfected with HTLV-II[12].

This study amplifyed and confirmed our previous report concerning to the highest prevalence of HTLV coinfection in HIV-1-infected patients with AIDS[2], we suggest that HTLV serology be included in the antibody screening battery for following up HIV-infected individuals.

RESUMO

Prevalência de infecção HTLV-I e HTLV-II em portadores assintomáticos do HIV-1 da cidade de São Paulo, SP, Brasil

Indivíduos infectados pelo vírus da imunodeficiência humana (HIV-1) geralmente apresentam infecções por múltiplos patógenos, dentre eles, os HTLV-I e HTLV-II. Estes foram descritos com freqüência variável em pacientes com AIDS e portadores assintomáticos do HIV-1, tanto na Europa como no Japão. Este trabalho foi conduzido com o objetivo de determinar a prevalência de infecção HTLV-I e -II em portadores assintomáticos do HIV-1 da cidade de São Paulo, e comparar os resultados obtidos com os descritos em literatura e os por nós anteriormente publicados. Foi detectada infecção HTLV em 1,5% dos 266 portadores assintomáticos do HIV-1 e 14% dos 28 casos de AIDS analisados. Com base em dados epidemiológicos foi confirmado como sendo o principal fator de risco para adquirir a coinfecção HIV/HTLV, o uso de injetáveis.

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