Age Distribution Among Patients at High Risk for Human T-Cell Lymphotrophic Virus Type I Infection

Human T-cell lymphotropic virus type I (HTLV-I) is a human retrovirus associated with adult T cell leukemia and tropical spastic paraparesis. We recently reported a high incidence of HTLV-I infection in Israeli Jews originating from the city of Mashhad in Iran [1, 2]. There is a characteristic age-dependent increase in the seroprevalence of HTLV-I infection in areas of endemicity. This increase typically occurs in adulthood and is higher in females than in males throughout their lifetimes [3, 4]. It is not fully understood whether age, immunity, and the CNS are distinctive factors or cofactors associated with morbidity in elderly populations. We designed the present study to investigate whether there is an age-dependent increase in the incidence of HTLV-I infection in a population at high risk; the results of our investigation were designed to be used as a model for CNS infectivity in the elderly.

The Jews of Mashhad were persecuted because of their religious beliefs since 1747, but they secretly continued to practice the Jewish religion and to intermarry, resulting in families that are closely related genetically. We included 321 Iranian Jews of Mashhadi origin (either the subject or at least one of his or her parents was born in Mashhad) in our study. All subjects underwent physical and neurological examination, and samples of peripheral blood were obtained from each subject after informed consent was obtained. Sera were tested for antibodies to HTLV-I with use of the gelatin-particle agglutination test, and genomic DNA was amplified as previously reported [2]. Statistical analysis was performed with analysis of variance (ANOVA).

Of the 321 subjects included in the study, 203 were female and 118 were male (mean age ± SD, 45.7 ± 22.3 years). Fifty-eight (18%) of the 321 subjects (38 females and 20 males; mean age ± SD, 50 ± 17.3 years) were positive for HTLV-I antibody by serological testing and by PCR analysis. Of the 58 HTLV-I infected subjects, 36 were asymptomatic carriers, whereas 22 (14 females and 8 men; 38%) had signs of spastic paraparesis. None of the 263 subjects who were not infected had abnormalities of the pyramidal tract compatible with spastic paraparesis.

The age distribution among the various decades of the Mashhadi population being studied is presented in figure 1. The age distribution of HTLV-I-infected subjects was significantly different from that of the healthy Mashhadi population (P < .01); in addition, the incidence of infection was distributed in a bimodal pattern, with a peak in the incidence of infection in young adulthood (20–30 years old) and a gradual rise reaching a second peak in the incidence of infection in the very elderly (80–90 years old).

The HTLV-I infection rate (18%) in the Mashhadi Jewish population in the present study is similar to that found in our previous studies [1, 2]. The most striking finding in the present study was the high rate of infection among the elderly population (>60 years old). This finding is an extension of the reported clustering of HTLV-I infection within a nursing home for Mashhadi elderly [1]. HTLV-I is known to be transmitted by sexual intercourse [5], from mother to child in breast milk [6], via blood transfusion [7], and by sharing of needles by parenteral drug abusers [8]. These modes of transmission can account for the early peak of HTLV-I infection in the younger population. However, the increase in the incidence of HTLV-I infection in the elderly is poorly understood since trans-
mission by breast milk and sexual transmission are no longer risk factors for this population. Moreover, drug abuse and sexual promiscuity are rare in the Mashhadi population because these individuals are brought up in Orthodox Jewish households.

A possible explanation for the rise in the seroprevalence of HTLV-I infection is that individuals may be exposed to an agent of low virulence over their lifetimes, possibly by coming in contact with salivary secretions (HTLV-I has been detected in saliva) [9, 10]. The age-dependent increase in the incidence of HTLV-I infection may suggest that horizontal transmission is predominant in populations such as the Mashhadi and that transmission via salivary secretions may be a significant factor. Our results support the possibility that HTLV-I is a dormant infection and that detection of antibodies is delayed as the rate of infection increases with age. This increase can be explained by the fact that the elderly have increased susceptibility to infections because of changes in lifestyle and nutrition or because of a decrease in immunologic functions. These factors as well as poor oral hygiene (which is common among the elderly) may contribute to cross-infectivity of HTLV-I through the salivary route.

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Clostridium perfringens as a Cause of Infectious Endocarditis in a Patient with a Vascular Prosthesis

Infective endocarditis (IE) is the most common and threatening form of endovascular infection, and gram-positive cocci are the most common causative agents. IE due to anaerobic bacteria is uncommon, but its incidence has increased, probably because of improvements in laboratory diagnostic methods. In 1970, Feltner and Dowell [1] reviewed the medical literature on IE and reported that 1.3% of all cases were caused by anaerobic bacteria. In 1982 von Reyn et al. [2] found an incidence of 7.7% among 123 patients studied. In 1982 Sapico and Sarma [3] reported seven cases of IE due to anaerobic and microaerophilic bacteria; they found an incidence of 10.6%. Kolander et al. [4] reported one case of clostridial IE and reviewed 16 cases; Clostridium perfringens was the most common species involved. We report a case of prosthetic valve IE due to C. perfringens.

A 31-year-old man with systemic arterial hypertension complained of progressive dyspnea due to myocardial dysfunction. In December 1994 he was admitted to the Heart Institute, Hospital das Clínicas (São Paulo, Brazil), with the echocardiographic diag-

References