Prevalence of ATL V and HIV among Hemodialysis Patients in Japan

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Dear Sir,

HIV (human immunodeficiency virus) and ATL V (adult T cell leukemia virus, or human T cell leukemia virus type 1) both belong to a family of human retrovi-ruses and are believed to be transmitted by blood transfusion and blood products [1,2]. Japan, especially its southwestern region, is known as a high endemic area of ATL V [3] while the prevalence of HIV has been reported to be very low in this country [4]. HD patients appear to be at risk of exposure to these viruses because they sometimes receive multiple blood transfusions. In Japan there have been no available data about HIV infection in HD patients and only a few reports [5, 6] on the prevalence of ATL V among HD patients mainly in high endemic areas. We examined the prevalences of HIV and ATL V among HD patients in this country, in comparison to nonen-demic areas with a high endemic area of ATL V.

1,066 HD patients consisting of 220 in Tokyo and 946 in Chubu, nonendemic areas of ATL V, and 66 in Okinawa, a high endemic area, were examined. HIV infection was assessed by the detection of antibodies to HIV (HIV-ab) using an enzyme immunoassay (HTLV III EIA Diagnostic Kit, Abbott, Chicago, Ill., USA), and ATL V infection by the detection of antibodies to adult T cell leukemia associated antigen (ATLA-ab) using an enzyme immunoassay (Eitest EIA, Eizai, Tokyo, Japan). The seropositivity of each test was confirmed by the Western blot analysis.

HIV infection There were 7 patients (2 male, 5 female) positive for HIV-ab by the EIA, but none of them was confirmed by the Western blot analysis. Neither of them had any characteristic clinical features of AIDS nor AIDS-related complex at all although 5 of them had a history of multiple blood transfusions. Three of these 7 patients were positive for antinuclear antibody and 1 was suspected of having progressive systemic sclerosis.

ATL V infection 30 (6 in Tokyo, 10 in Chubu, and 14 in Okinawa) were positive for ATLA-ab by both the EIA and Western blot analysis. The prevalence rates of ATL V-ab among the HD patients in Tokyo, Chubu and Okinawa were significantly higher than those among their local blood donor populations [3] (2.7 vs. 0.7%, 1.1 vs. < 0.5%, 21.2 vs. 11.0%, respectively), reflecting a roughly corresponding increase to each endemic rate. In Tokyo and Chubu,

nonendemic areas, 15 out of 16 patients had a history of multiple transfusions. There was a significant difference in the prevalence between the HD patients with and without a history of blood transfusion (15/604 vs. 1/436, $p < 0.005$). Three HD patients with ATLA-ab in these areas had come from endemic areas of ATL. There was a significant difference between those born in endemic areas and in nonendemic areas (3/29 vs. 13/1,032, $p < 0.005$). In Okinawa, a high endemic area, the relationship between blood transfusion and ATLA-ab was not so close, probably masked by the high background prevalence. All of the HD patients had been lifelong residents in this area.

The CD 8 cell number and percentage of the peripheral lymphocytes of the 11 patients with ATLA-ab studied were significantly decreased compared to those of patients without ATLA-ab. Although none of the HD patients with ATLA-ab had any characteristic signs and symptoms of ATL, a long-term follow-up of these asymptomatic carriers is needed, because a relatively long period preceding the onset of adult T cell leukemia is suggested.

The results appear to indicate that HIV infection at present is not as serious as ATL infection in HD patients in Japan. The prevalence of ATLA-ab among HD patients was related first to blood transfusion, second to the prevalence in the local population, and third to the migration from endemic areas. The probability of these two virus infections by blood transfusion may be effec-

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tively reduced in the near future, if blood bank screening for both antibodies having initiated in 1986 is successful in avoiding contaminated blood. However, the prevention of the spread of ATL by other routes, such as vertical or horizontal transmission within the family or the community, needs further effort, especially as to HD patients in endemic areas.

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