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Seroprevalence of HTLV-I infection among general populations in Torbat-e-Heydarieh, Northeastern Iran

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Introduction:

Human T-cell lymphotropic virus type I (HTLV-I) is an oncogenic human retrovirus that causes adult T cell leukemia/lymphoma (ATL) and HTLV-1-associated myelopathy/tropical spastic paraparesis (HAM/TSP) in only 2-3% of infected people. It was previously shown that HTLV-I infection is endemic in Khorasan Razavi province, particularly in Mashhad and Neyshabour. The region is presently the largest endemic area for this virus in Iran due to several factors such as environment, immigration patterns and individual risk behaviours. The purpose of this study was to determine the prevalence of HTLV-I infection among general populations in Torbat-e-Heydarieh, Northeastern Iran.

Materials and Methods:

Between April and June 2011, serum samples obtained from 400 randomly selected individuals screened for the presence of anti-HTLV-I antibodies by ELISA method (Dia.Pro/Italy). Genomic DNA was then extracted from peripheral blood mononuclear cells (PBMC) using PrimePrem™ genomic DNA isolation kit, (GeNet Bio, South Korea). PCR for HTLV-I Tax and LTR region was performed using specific primers.

Results:

In the primary screening of the samples by ELISA, eight (2%) samples were positive for HTLV antibodies, from which only five (1.25%) cases (three males and two females) were confirmed to be HTLV-I by PCR. A significant correlation existed between prevalence HTLV-I infection and increase with age among positive cases.

Conclusion:

Our results demonstrated that Torbat-e-Heydarieh is endemic for HTLV-I infection. Thus, routine screening among blood donors along with other strategies are needed for prevention of the virus transmission in whole population in Torbat-e-Heydarieh.

Keywords: HTLV-I, Seroprevalence, Epidemiology, PCR, Iran