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Case Report

Endemic transmission of HTLV-2 in blood donors from São Luís do Maranhão, northeastern Brazil: report of two asymptomatic individuals



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Introduction

Human T-cell lymphotropic virus 1 and 2 (HTLV-1, HTLV-2) belong to the *Retroviridae* family, genus *Deltaretrovirus*^{1,2} and have similar biological properties, with tropism of T lymphocytes. They are associated with rare lymphoproliferative diseases.^{3,4}

Brazil has a high seroprevalence of HTLV-1/2 among blood donors. The mean prevalence ranges from 0.4/1000 in Florianópolis to 10.0/1000 in São Luís do Maranhão.⁵

The first case of HTLV-2 was described in 1982 in a patient with hairy cell leukemia.⁶ The virus is acquired through unprotected sexual intercourse, by vertical transmission and, in Europe and North America, infection is associated with intravenous drug users. HTLV-2 is endemic in some Indian villages and urban populations in northern Brazil,⁷ in the state of São Paulo and in the central western region of the country.⁸

HTLV-2 can be classified into four major subtypes: HTLV-2a, HTLV-2b, HTLV-2c and HTLV-2d by molecular

characterization.⁹ Although HTLV-2 does not show any definite association with lymphoproliferative diseases, some studies have suggested that it may also be associated with HTLV-I-associated Myelopathy/Tropical Spastic Paraparesis (HAM/TSP) and other neurological syndromes, as well as increased incidence of pneumonia, bronchitis and inflammatory conditions and arthritis.¹⁰

These case reports show the occurrence of HTLV-2 in blood donors of the state of Maranhão for the first time, thus indicating the need for work on this issue in the region to discover the real prevalence of the virus.

Case report

Two patients were referred to the clinic specializing in HTLV-1/2 at the Supervisão de Hematologia e Hemoterapia do Maranhão (HEMOMA). Both women were married housewives living in São Luís do Maranhão with only elementary schooling. One was 54 years old and the other was 61 years old. They

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donated blood for family members but the screening laboratory test (ELISA) was positive for HTLV-1/2. This result was confirmed for HTLV-2 by Western blot. The patients denied having a family history of HTLV, blood transfusions or infectious dermatitis during childhood. Their partners refused to perform blood tests. The patients' physical examinations and laboratory analyses, including complete blood count, urea, creatinine, fasting glucose, uric acid, lipid profile, TSH, T₃ and free T₄, were unremarkable.

Discussion

HTLV-1/2 infection is endemic in Brazil¹¹ with a prevalence of 5% of the population. There is a high incidence in Maranhão, where ten out of every 1000 blood donors are seropositive.¹² However, these figures do not show the real situation in the population of Maranhão as they are for blood donors and not the general public. A study conducted in São Paulo found a rate of 20.7% for HTLV-2a/b¹³ and a rate of 0.24% for HTLV-2a/c was found in a population of the central-western region of Brazil in patients co-infected with pulmonary tuberculosis.⁸

In regions where HTLV-2 infection is endemic, the highest prevalence is associated with increased age and decreased socioeconomic status, especially in women,¹⁴ which corroborates our findings.

The pathogenic inferiority of HTLV-2 compared to HTLV-1¹⁵ is known and so it is not clearly associated with diseases, although there are reports of an association of HTLV-2 with neurological diseases and increased incidence of respiratory infections¹⁶; this explains the absence of symptoms reported in these patients.

Conclusion

These case reports will contribute to the planning and implementation of control measures by the epidemiological surveillance agency of Maranhão. Thus, despite of the small sample size in blood donors, this seropositivity indicates the need of further studies in the whole population of the state of Maranhão.

Conflicts of interest

The authors declare no conflicts of interest.

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