

Seroprevalence of human T-lymphotropic virus type 1 in Papua New Guinea and Irian Jaya measured using different Western blot criteria

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Abstract

Background: Endemic foci of HTLV-1 carriers have been found in the world, however, the origin of HTLV-1 in humans is still unclear. Since a distinct type of virus strain was isolated from the Solomon Islands, detailed surveys on HTLV-1 prevalence in New Guinea are important to shed light on its history of dissemination. **Objective:** To clarify the seroprevalence of HTLV-1 in different regions of New Guinea Island. **Study design:** Sera from 1221 individuals (649 males, 454 females and 118 unknown) in New Guinea Island were studied for the presence of antibodies to HTLV-1 by a particle agglutination and the Western blot (WB) tests. Two different sets of criteria, proposed by WHO and Kiyokawa et al., were employed to interpret the WB test. Since the latter seemed to lack adequate specificity, the WHO criteria was used for the evaluation of the seroprevalence throughout the study. **Results:** Seroprevalence of HTLV-1 differed by the WB criteria. By the more stringent criteria, HTLV-1 carriers were found in Madang, Chimbu and one hinterland province, Enga, in Papua New Guinea. An overall seroprevalence rate in different regions ranged from 0 to 14.6%. No seropositive individuals were found in Irian Jaya. **Conclusions:** To avoid overestimating the seropositivity rates, the WHO criteria would be more appropriate to employ for WB test by using the samples obtained from tropical and/or malaria endemic areas. This study is the first to show HTLV-1 infected individuals in the hinterland of New Guinea Island. © 2000 Elsevier Science B.V. All rights reserved.

Keywords: HTLV-1; New Guinea; Western blot criteria

1. Introduction

Human T-lymphotropic retrovirus (HTLV-1) is a known causative agent of adult T-cell leukemia/

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