

DEVELOPMENT OF ADULT T-CELL LEUKEMIA IN A PATIENT WITH HTLV-I SERONEGATIVE MOTHER: CONFIRMATION OF PARENTAGE USING THIRTEEN SHORT TANDEM REPEAT LOCI ANALYSIS

Li-Hui Tseng, Ming-Tseh Lin, Chia-Kai Hsu, Pi-Mei Hsu, Chung-Yi Hu, Ya-Chien Yang, Chiu-Hwa Wang, Tsang-Ming Ko

National Taiwan University Hospital, Taipei, Taiwan



Human T-lymphotropic virus type-I (HTLV-I) is transmitted vertically from mother to child or horizontally through sexual contact or by blood transfusion. Transmission of HTLV-I from mother early in life is believed to be critical for the development of adult T-cell leukemia (ATL) in later decades. In this report, we demonstrated a 59 year-old ATL patient born by a seronegative mother in Taiwan, a non-endemic area of HTLV-I. None of her other 13 siblings were seropositive. To exclude the possibility of adoption, a parentage test was conducted using the 13 different short tandem repeat (STR) loci. The 13 loci are D3S1358, D16S539, TH01, TPOX, CSF1PO, D7S820, vWA, FGA, D8S1179, D21S11, D18S51, D5S818 and D13S317. Dye-labeled amplification products were separated and detected using the gel electrophoresis instrument ABI™ Prism® 377 automated system. The probability of exclusion is 0.999989. The results provide evidence that she was the biological mother of this ATL patient. Analysis of the proviral nucleotide sequences of the patient and his wife suggested transmission of HTLV-I from husband to wife or vice versus. The development of ATL might occur after horizontal transmission of HTLV-I infection. This report suggested that a reliable and reproducible STR multiplex system to provide genetic evidence of parentage is very important to define vertical or horizontal transmission in infectious disease.

