

# EVIDENCE OF ZONOTIC AND NOSOCOMIAL TRANSMISSION OF HTLV-1 IN LARGE SURVEY IN RURAL POPULATION OF CENTRAL AFRICA

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## Background:

Human T-cell Leukemia virus type 1 (HTLV-1) can be transmitted sexually, from mother-to-child, or through contaminated blood products. Zoonotic transmission is rare and has only been reported in central Africa in people who have frequent contact with non-human primates (NHP). In this study, we aimed to investigate the prevalence of HTLV-1 in a rural population in Cameroon and identify risk factors associated with infection.

## Methods:

We performed a cross-sectional survey in rural areas of the East region of Cameroon, between March 2019 and March 2021. HTLV-1 infection was first screened by ELISA and all positive plasma samples were then tested by Western blot and envelope gene targeted Polymerase chain reaction (PCR). Risk factors associated with HTLV-1 infection were identified by logistic regression on univariate and multivariate analyses.

## Results:

A total of 3,400 participants were included, aged 15 to 90 years, with a mean age of 39.9 years. HTLV-1 infection was detected in 36 individuals, resulting in an overall prevalence of 1.1% (95%CI 0.7-1.5). The prevalence was higher in the Pygmy ethnic group (2.1%) compared with the Bantu population (0.8%), increased with age but there was no difference between men and women. Independent risk factors associated with HTLV-1 infection were: Pygmy ethnicity (adjusted odd ratio ORa 2.9), history of surgery (ORa 6.3), and a bite by a NHP (ORa 6.6). Association was stronger for hernia surgery and gorilla bite. History of transfusion and other contact with NHPs, such as hunting, consumption and cutting bushmeat, were not associated with HTLV-1.

## Conclusion:

The association of HTLV-1 infection with NHP injury and a history of surgery suggests both zoonotic and iatrogenic transmission of HTLV-1. Further studies are needed to assess the risk of nosocomial transmission of HTLV-1 during surgery, particularly hernia, to guide public health authorities in implementing preventive measures to control HTLV-1 transmission.

## Disclosure of Interest Statement:

The authors have disclosed no conflicts of interest.