



Monitoring of mpox in rural rainforest areas of the Congo basin using a one health approach

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The Congo Basin, due to its rich ecosystem, is considered a major hotspot for the emergence and re-emergence of zoonotic diseases such as Mpox. In the Republic of Congo, several Mpox outbreaks have been reported in 2003, 2012, 2022, and 2024, especially in the northern regions bordering the Democratic Republic of Congo, where trade and population movement are intense. These repeated outbreaks emphasize the importance of strengthening Mpox surveillance through a One Health approach that integrates both human and animal health monitoring.

Methods: A cross-sectional study was conducted in 2023 to evaluate exposure to Mpox virus among humans and rats in three at-risk villages: Attention, Edzielo, and Toukoulaka. Researchers collected 104 paired serum and oropharyngeal swab samples from healthy individuals, as well as 50 samples from rats, including sera and tissue specimens. Molecular testing using qRT-PCR was performed to detect active infection, while ELISA assays targeting IgG antibodies against the Mpox E8L protein were used to assess previous exposure.

Results: No active Mpox infection was detected in either human or animal samples. However, evidence of previous exposure was identified through antibody detection. Among humans, 30.8% tested positive for Mpox-specific IgG antibodies, while 19% of rat sera also showed exposure. The highest human seroprevalence was recorded in Edzielo (65.6%), compared with Attention (18.7%) and Toukoulaka (15.6%).

Conclusion: These findings indicate significant circulation of Mpox virus in the study areas and highlight the urgent need to strengthen surveillance and prevention strategies in the Congo Basin.

