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HTLV-1 Infection-Induced Motor Dysfunction, Memory Impairment, Depression, and Brain Tissues Oxidative Damage in Female BALB/c Mice

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Abbreviated title: HTLV-1 infection-induced motor dysfunction

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Abstract

Abstract:

Aims: The HTLV-1 infection is associated with a neuro-inflammatory disease. In the present study, the behavioral consequences and brain oxidative damages were evaluated in HTLV-1-infected BALB/c mice.

Material and methods: 20 female BALB/c mice were divided into two groups comprising control and HTLV-1-infected. The HTLV-1-infected group was inoculated with a 10^6 MT-2 HTLV-1-infected cell line. Two months later, the behavioral tests were conducted. Finally, oxidative stress was assessed in the cortex and hippocampus tissues.

Key findings: In the HTLV-1-infected group, running time and latency to fall, travel distance and time spent in the peripheral zone, total crossing number and total traveled distance in open field test, the latency of entrance into the dark compartment in the passive avoidance test, the new object exploration percentage, and discrimination ratio were significantly lower than in the control group. The immobility time, time spent in the dark compartment in passive avoidance test, and total exploration time significantly increased in the HTLV-1- infected group compared to the control group. In the cortical tissue of the HTLV-1 group, the