

Original Article

Effect of folic acid on duovir-n induced weight, behavioural and cyto-cerebellar changes in adult male wistar rats

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Duovir-N is a highly active antiretroviral therapy (HAART), a combination of three drugs (lamivudine, zidovudine and nevirapine) used for pre-exposure prophylaxis and management of human immunodeficiency virus infection in sub-Saharan Africa. This research investigated the potential ameliorative effect of folic acid on Duovir-N induced toxicity on the cerebellum. Forty adult male Wistar rats were divided into 4 groups of 10 rats each. They were administered with distilled water, 9.28 mg/kg of Duovir-N only, 9.28 mg/kg of Duovir-N and 0.07 mg/kg of folic acid, and 0.07 mg/kg folic acid. Drugs were administered twice daily for 30 days after which neurobehavioral test in the open field maze was performed. The rats were then sacrificed and their cerebellum harvested, processed and stained using haematoxylin and eosin method. Result showed a significant ($p < 0.05$) decreased in weight of the Duovir-N (HAART) groups compared to the control or folic acid groups. There was also a significant ($p < 0.05$) reduction in the brain to body weight index between the HAART group compared with control and folic acid groups. There were no significant changes in all the parameters of the open field maze between the HAART group and the control. The cerebellum was affected with mild to moderate shrinkage of pyramidal cells and distortion of the granular cells. These results indicate that Duovir-N affects cerebellar histology, and folic acid is able to ameliorate this, thus, may be beneficial to people taking Duovir-N.

Keywords: Duovir-N, Cerebellum, Folic acid, Human Immunodeficiency Virus, Neurobehaviour
