SUMMARY/ABSTRACT

Introduction: HIV-associated neurocognitive disorders (HAND), is the second most common neurological complication of HIV after the distal symmetric polyneuropathy. The prevalence of HAND in Nigeria is about 68.1%. The incidence of dementia among HIV-infected people has declined dramatically following widespread use of Highly Active Antiretroviral therapy HAART and effective treatment of opportunistic infections. However, asymptomatic disease is still on the increase as infected people live longer. HAART remained the main stay of treatment of cognitive disorders in HIV infected people.

Objective: to determine the pattern of cognitive performance among HAART naïve HIV positive patient at baseline and to see the time-trend change in the cognitive performance post-HAART.

Methodology: A quasi-experimental study was carried out among newly diagnosed HIV patients in the virology clinic of Olabisi Onabanjo University Teaching Hospital, Sagamu, Ogun State Nigeria, over a period of six months. Sixty (60) newly diagnosed HIV positive patients were recruited after ethical approval. Patients’ bio data, CD4 count, neuropsychological test scores and test of activities of daily living were recorded. Neuropsychological tests used were the International HIV Dementia scale (IHDS) and the Trail Making Test part A (TMT part A). The activities of daily living was tested using Lawton’s Activities of Daily Living Test. Patients were thereafter commenced on HAART. All parameters were recorded at baseline pre-HAART and reevaluated at three and six months post-HAART. The end point of the study was the measured differences in the CD4 count, neuropsychological tests and test of activity of daily living. Measured parameters from the patients were recorded in the questionnaires. Data analysis was done using the Statistical package for Social Sciences SPSS version 21. Linear regression analysis
was used to assess the factors associated with change in neurocognitive performance of patients. Paired t-test was used to examine the hypothesis that there will be better neurocognitive scores among participants post-HAART compared to baseline.

**Result:** of the sixty (60) participants 56 of them completed the study with 4 people constituting 6.71% drop out. There was preponderance of female in the studied group with female to male ratio of 1:0.8. The mean age was 37.3±7.3 years. All the participants have some level of formal education with 17.6% having above secondary education. The mean baseline CD4 count was 190±72.64 cells/mm$^3$. The mean baseline IHDS score was 10.39±1.8, the differences in the mean scores at 3months and 6months post-HAART were -1.7±1.0 and -2.43±1.3 respectively. These were significant p=0.001. Using IHDS and Lawton’s score, 7 (12.5%) have HAND, 6 of which were ANI, and one MND. Post-HAART IHDS scores in this group were also significantly better both at 3 and 6 months from the baseline, p=0.01 and p=0.009. TMT (A) and Lawton’s activity of daily living score identified 12 (21.42%) participants with HAND. Ten out of 12 had asymptomatic neurocognitive impairment and 2 had mild neurocognitive disorders. Among those with HAND, the increase in TMT (A) score at 3months over that at baseline was 26.58±17.69 and was significant (p<0.001). The change at 6 months from that at 3 months was not significant (p=0.98).

**Conclusion:** HAART improved cognitive scores among HIV patients as well as those with HAND. This improved performance occurred early (by 3 months) in the course of treatment. This was stabilized at 3-6months as treatment continued. Further studies using multi-domain neuropsychological batteries and for a longer duration are suggested.