Impaired neurocognitive function among HIV-infected Thais on stable antiretroviral therapy for more than 7 years

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Background
There are limited data on HIV-associated neurocognitive disorders (HANDs) from resource-constraint region and few studies have firm documentation of duration of treatment and suppression of plasma virus. This study aimed to estimate the prevalence of HIV-related cognitive deterioration among HIV-infected patients who were on stable ART and to describe the pattern of neurocognitive impairment (NCI), daily life disturbance and associated factors.

Methods
This was a cross-sectional evaluation of cognition in a sample of HIV adults at HIV-NAT, the Thai Red Cross AIDS Research Centre with data captured over a 6-month period. The Montreal Cognitive Assessment (MoCA), International HIV Dementia Scale (IHDS) and Activities of Daily Living Questionnaire (ADLQ) scale were administered. NCI was defined as a score of $\leq 10$ on the IHDS or $B26$ on the MoCA. The HIV-NAT Cohort Database was explored to retrieve sociodemographic data and clinical factors.

Results
Among the 162 patients evaluated, the mean (±SD) age was 42.8 (± 7.3) years and 56.8% were male. HBV and HCV co-infection frequencies were 11.7% and 7.4%, respectively. The mean (±SD) duration of ART was 9.03 (± 3.12) years. Of all, 59.3% were concurrently on protease inhibitor (PI) based regimens. 97.5% had virologic success with HIV-RNA load of less than 200 copies/mL. The prevalence of NCI was 68.5% by MoCA and 75.8% by IHDS. Tests on visuospatial cognition, language and abstraction were most commonly poor scores (81.5%, 89.5% and 74.1%, respectively). Among these, 54.9% and 61.3%, respectively, were asymptomatic without overt daily functioning interference. Daily self-care and household care were the most commonly endorsed daily activity defects (16.7% and 12.3%, respectively). Remaining as a couple ($p < 0.001$), duration of education $B12$ years ($p < 0.001$) and heterosexual risk ($p = 0.001$) were associated with NCI. The MoCA and IHDS scales correlated to each other ($r^2 = 0.177$, $p = 0.024$). Logistic regression demonstrated fewer years of education and remaining as a couple were associated with impaired MoCA scale ($p = 0.001$ and 0.008, respectively).

Conclusion
Impaired cognitive function is commonly detected among HIV-infected Thais on stable ART for over 7 years. The frequency of NCI is higher than that reported in other settings. However the performance characteristics of our screens have not been firmly established in this setting and the cut-off levels used may over-estimate NCI.