



MAKERERE UNIVERSITY



**Karolinska
Institutet**

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Cognitive Deficits and HIV associated Psychotic Disorders in Uganda

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ABSTRACT

Introduction: HIV infection is known to cause neuro-psychiatric disturbances whose prevalence ranges between 74-83%. The prevalence of HIV in patients with psychosis has been found at 18%. Cognitive dysfunction occurs in 37% of HIV individuals with advanced HIV/AIDS even after the initiation of antiretroviral therapy. This thesis presents the feasibility of a rapid screening test for HIV dementia in a resource limited setting; the nature of HIV related psychoses and the impact of HIV infection on the cognitive function of patients with and without psychosis.

Methods: Four studies (1-IV) were conducted using multiple methods. We determined the validity of the International HIV Dementia Scale (IHDS) through administering standardized neurological and neuropsychological assessments to 66 HIV-positive individuals in the USA, 81 HIV positive individuals and 100 HIV negative individuals in Uganda (Study I). We recruited 102 HIV positive individuals from the Infectious Diseases Institute and 25 HIV negative individuals from the AIDS Information Centre. Depression and cognitive function were assessed at 0, 3 and 6 months (Study II). One hundred and fifty six HIV positive and 322 HIV negative patients with psychosis were consecutively recruited from two national referral hospitals. Psychiatric, physical, and laboratory assessments were conducted at 0, 3 and 6 months (Study III & Study IV). Data was analyzed using univariate, bivariate and multivariable methods including linear and logistic regression analysis to test for predictors of the different types of psychosis and the relationship to cognitive impairment.

Results: The sensitivity and specificity for HIV dementia with the IHDS was 80% and 57% in the US part of the study, and 80% and 55% in the Uganda part of the study (I). We found higher scores (equal to or greater than 16) on the Centre for Epidemiologic Depression Scale in the HIV-positive group at all 3 clinic visits (54% vs 28%; 36% vs 13%; and 30% vs 24% respectively; all $p < 0.05$ (II). The HIV positive group had higher likelihood for cognitive impairment (OR 8.9; 95% CI 2.6-29.9). Mania, major depression and schizophrenia occurred more in the HIV negative group, 67%:62%:80% respectively, while psychotic disorder not otherwise specified occurred more in the HIV positive individuals 88% vs 12 %, ($p < 0.001$) (III). The HIV positive individuals were more likely to be impaired in the following domains, verbal memory (OR 1.8, 95% CI 1.0-2.9), verbal fluency (OR 3.4; 95% CI 2.2-5.2), Colour trails 1 (OR 2.0; 95% CI 1.3-3.0 and Colour trail 2 (OR 3.5; 95% CI 2.0-6.1).

Conclusion: We found it feasible to screen for HIV dementia using the IHDS and suggest this is implemented in routine clinical care. Depression symptomatology and the presentation of psychosis are distinct and common among HIV infected individuals compared to HIV negative individuals. The cognitive function of individuals with psychosis is worsened by HIV infection. Treatment algorithms for the different types of psychoses and the cognitive impairment that occur in HIV infection should be developed. There is need for policy changes that can improve guidelines for the care of HIV infected individuals with neuropsychiatric complications in resource limited settings.

Keywords: HIV/AIDS, cognition, HIV associated psychosis, depression.

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