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Guest Editors: Mary H. Kosmidis, Athanasia Liozidou, Lambros Messinis, Ioannis Zalonis

EXECUTIVE FUNCTIONS IN HIV SEROPOSITIVE PATIENTS: PROTECTIVE EFFECTS OF HIGHER COGNITIVE RESERVE

Messinis L [1], Leonidou L [2], Psichogiou M [3], Nasios G [4], Ntoskou A [1], Karadimou J [1], Geredakis A [4], Karala M [4], Marneras C [5], Gogos C [2], Papathanasopoulos P [1]

[1] Neuropsychology Section, Department of Psychiatry and Neurology, University Hospital of Patras

[2] Division of Infectious Diseases, Department of Internal Medicine, University of Patras Medical School, Patras

[3] Department of Hygiene, Epidemiology and Medical Statistics, Medical School, University of Athens, Athens

[4] Department of Speech and Language Therapy, TEI Epirou, Ioannina

[5] Department of Nursing, University Hospital of Patras

Abstract

OBJECTIVE: Recent data suggest that cognitive reserve may modulate the adverse effects of HIV infection on cognitive functioning; however, the protective effects of cognitive reserve on executive functions remain unclear.

MATERIAL AND METHOD: 99 native Greek speaking (male = 76.4%) cART treated HIV-infected patients without major neurological, psychiatric or HCV/HBV comorbidity, underwent comprehensive neuropsychological assessment by a Greek standardized battery of cognitive tests assessing premorbid intelligence, attention, information processing speed, learning and memory, visuospatial function, and executive functions. Participants had M (SD) age = 39.78 (9.12), education = 13.93 (3.36), years since diagnosis = 6.77 (5.36), Nadir CD4 count = 312.77 (176.50), Current CD4 count = 677.81 (272.23). Participants were grouped according to Centers for Disease Control (CDC) clinical stages (A= 60, B=17, C= 22). Moreover, we calculated cognitive reserve (CR) for participants in each CDC stage based on education level, estimated premorbid IQ (Vocabulary scale T –WASI) and occupational attainment. Based on these variables participants were classified as having either high or low cognitive reserve.

RESULTS: We found significant differences in favour of the high CR group on the Stroop color – word task, verbal fluency task, including strategy utilization (clustering and switching processes) and on mental processing speed.

CONCLUSIONS: The study provides evidence that high CR may exert a protective effect on executive functions (cognitive flexibility, response inhibition, initiation and mental shifting, processing speed) and strategies (shifting and switching). These findings support the cognitive reserve theory for interpreting individual differences in susceptibility to HIV related neuropathology.

Corresponding Author: Messinis L, Neuropsychology Section, Department of Psychiatry and Neurology, University Hospital of Patras, lmessinis@upatras.gr