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**Increased Prevalence of Neurocognitive impairment in Aging People Living with Human Immunodeficiency Virus: The ANRS EP58 HAND 55–70 Study**

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**ABSTRACT**

**BACKGROUND** - There are limited data on the comparative prevalence of neurocognitive impairment (NCI) in aging people living with human immunodeficiency virus (PLHIV) and people not living with HIV. **METHODS** - This was a cross-sectional study of PLHIV randomly matched by age ( $\pm 4$  years), gender, and education with 5 HIV-uninfected individuals from the CONSTANCES cohort. PLHIV were fluent in French and sequentially included during routine outpatient visits if aged 55–70 years, with HIV viral load  $< 50$  copies/mL, and lymphocyte T-CD4 level  $\geq 200$  cells/ $\mu\text{L}$  in the past 24 and 12 months, respectively. The primary outcome was NCI as defined by the Frascati criteria. Multivariate normative comparison (MNC) and  $-1.5$  standard deviations in  $\geq 2$  neurocognitive domains were secondary outcomes of NCI. **RESULTS** - Two hundred PLHIV were matched with 1000 controls. Median age was 62 years, and 85% were men. In PLHIV, the median T-CD4 lymphocyte level was 650 cells/ $\mu\text{L}$ , and median nadir T-CD4 lymphocyte level was 176 cells/ $\mu\text{L}$ . NCI was found in 71 (35.5%) PLHIV and in 242 (24.2%) controls (odds ratio [OR], 1.74; 95% confidence interval [CI], 1.25, 2.41). After adjusting for confounders, HIV remained significantly associated with NCI (OR, 1.50; 95% CI, 1.04, 2.16). Adjusted results were similar with NCI defined by MNC (OR<sub>MNC</sub>, 2.95; 95% CI, 1.13, 3.50) or  $-1.5$  SD (OR<sub>-1.5</sub>, 2.24; 95% CI, 1.39, 3.62). **CONCLUSIONS** - In this matched study of aging individuals, HIV was significantly associated with an increased risk of NCI after adjusting for major confounders. Results were confirmed with more stringent NCI classifications.

**KEYWORDS:** HIV; Neurocognitive impairment; Aging; Frascati criteria; HAND

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