

Cognitive aging is premature among a community sample of optimally treated Australian living with HIV

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Background:

While some research has indicated that there may be premature cognitive aging among people living with HIV (PLHIV), results are derived from non-community samples with suboptimal combination antiretroviral therapy (cART) access and virological control. The current study assessed whether age and HIV status interact to lead to premature cognitive aging among a community sample of PLHIV with high cART coverage and their age and lifestyle-matched HIV negative (HIV-) counterparts while considering the mental health and non-HIV comorbidity burden.

Methods:

This study enrolled 254 HIV+ and 72 HIV- gay and bisexual men (mean age = 49 years; SD=10.2) from Holdsworth House Practice in Sydney. Neurocognitive function was evaluated with the Cogstate Computerized Battery (CCB) at baseline and 6 months assessing speed of processing, attention/working memory, and verbal learning and memory. Linear mixed-effect models examined main and interaction effects of HIV status and chronological age on CCB age-uncorrected global neurocognitive z-score (GZS) adjusting for repeated testing, and then adjusting sequentially for HIV biomarkers, mental health, and comorbidities.

Results:

The majority of HIV+ participants were on cART (92%) and were virally suppressed (84%). Only 15% had a history of HIV disease CDC stage C. HIV positive status and age interacted to produce lower GZS ($\beta=-0.43$ (95% CI=-0.85, -0.02), $p<0.05$). Among covariates, a higher level of con-current anxiety symptoms ($\beta=-0.11$ (95% CI=-0.19, -0.04), $p<0.01$), historical AIDS ($\beta=-0.12$ (95% CI=-0.22, -0.03), $p<0.05$), and historical HIV brain involvement ($\beta=-0.12$ (95% CI=-0.22, -0.01), $p<0.05$) were associated with lower GZS.

Conclusion:

We found a robust medium size premature aging effect on cognition in a community sample with optimal HIV care. Our study supports routine screening of cognitive and mental health among older PLHIV.

Disclosure of Interest Statement:

Bruce J. Brew contributes to the Natalizumab advisory board (Australia) 2006-; Biogen Idec PML advisory board (Natalizumab) International 2008-; GlaxoSmithKline national advisory board 2009-; Merck Serono PML international advisory board 2009- and contributed to the Biogen Alzheimer's advisory board in 2018. He has received speaker honoraria from Janssen. He is on the AIDS editorial board (2018-), Lancet HIV; and the Journal of Neurovirology.

Mark Bloch has served as an advisory board member and/or educational speaker for Gilead Sciences, ViiV Healthcare, Janssen and Abbvie and has received travel assistance from Gilead Sciences.

All the other authors declare no conflict of interests.