

An Epidemiological Review of an HIV-Psychiatry Clinic – Characterizing Cognitive Disorders in HIV



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Introduction

•The Human Immunodeficiency Virus (HIV) is known to be neurotropic, causing a wide range of neuropsychiatric complications including neurocognitive impairment.

•The HIV Psychiatry Clinic at the National Centre for Infectious Diseases (HIV-PSY clinic) was started in 2010 as the only national site for integrated psychiatric care for persons living with HIV (PLHIV) in Singapore.

•There is a total of 7,137 PLHIV in Singapore as of 2024 (0.13% of the population) but the neuropsychiatric burden of HIV has not been characterized.

Aims

•To perform an epidemiological characterization of PLHIV who accessed care at the HIV-PSY clinic between 2014 and 2024, with a focus on the subgroup of PLHIV diagnosed with cognitive disorders.

•To describe the clinical outcomes of PLHIV with cognitive disorders between 1 to 3 years after diagnosis.

Method

•An Institutional Review Board-approved retrospective chart review with waiver of informed consent.

•Inclusion criteria:

- Patients aged 18 to 99
- Accessed HIV-PSY clinic as a First Visit between 1 January 2014 and 30 June 2024 with available records in the hospital's electronic record system

•Patients who only had documented follow-up visits during the review period were excluded.

•Demographics, biopsychosocial factors, and diagnosis-related (both HIV and psychiatric) variables were extracted.

•Clinical outcomes at 1-year intervals after the First Visit up to 3 years were recorded.

•Patients who had defaulted after the First Visit within the review period had an additional per protocol review as a unique subject if they were referred to and attended the clinic again more than 5 years after the last attendance.

Results

Patient demographics (overall sample)	N = 431
Average age	Mean 43.50 (± 12.949)
Males	398 (92.3%)
Highest education level	Valid n = 168
<10 years	35 (20.83%)
Marital status	Valid n = 431
Single / divorced / widowed	359 (83.8%)
Employment status	Valid n = 429
Unemployed	212 (49.4%)

HIV Risk factors	Valid n = 305
Men who have sex with men (MSM)	202 (66.23%)
Intravenous drug use (IVDU)	48 (15.74%)
Commercial sex workers (CSW) exposure	49 (16.07%)
Multiple sexual partners	76 (24.92%)
HIV positive partner	29 (9.51%)
Unprotected sexual encounters	90 (29.51%)
Multiple risk factors	133 (43.61%)

Psychosocial factors	Valid n = 431
Pre-existing psychiatric conditions	224 (52.0%)
Alcohol use	80 (18.6%)
History of illicit drug use	152 (35.3%)
History of stimulant use	121 (28.1%)
Documented adverse childhood experiences*	53 (12.3%)

• Remaining 378 patients either did not report any adverse childhood experiences or information was not documented

Comorbidities	Valid n = 431
Patients with non-CNS opportunistic infection	133 (30.9%)
Patients with CNS opportunistic infections	41 (9.5%)
Patients with cardiovascular risk factors	96 (22.3%)
Patients with vascular disease	31 (7.2%)

FIRST VISIT	
HIV Indicators	Valid n = 431
Years since HIV diagnosis	Mean 7.09 (SD ± 6.142)
CD4 count at time of clinic visit	Valid n = 386
CD4 count < 200	58 (13.5%)
On Efavirenz (EFV) containing regimen	61 (14.2%)

Psychiatric indicators	Valid n = 431
Mood disorders	141 (32.7%)
Anxiety disorders	58 (13.5%)
Psychotic disorders	43 (10.0%)
Sleep disorders	52 (12.1%)
Substance use disorder	24 (5.6%)
Cognitive disorders	22 (5.1%)
Other diagnoses (e.g. adjustment disorder, ASPD, ADD)	74 (17.2%)
Suicidality	8 (1.9%)
No mental illness	93 (21.6%)

Patient demographics (cognitive subgroup)	N = 22
Average age	Mean 57.8 (SD 8.77)
Males	20 (90.9%)
Years since HIV diagnosis	Mean 6.5 (SD 6.59)
Marital status	
Single / divorced / widowed	16 (72.7%)
Employment status	
Unemployed	18 (81.8%)
Past psychiatric history	8 (36.4%)

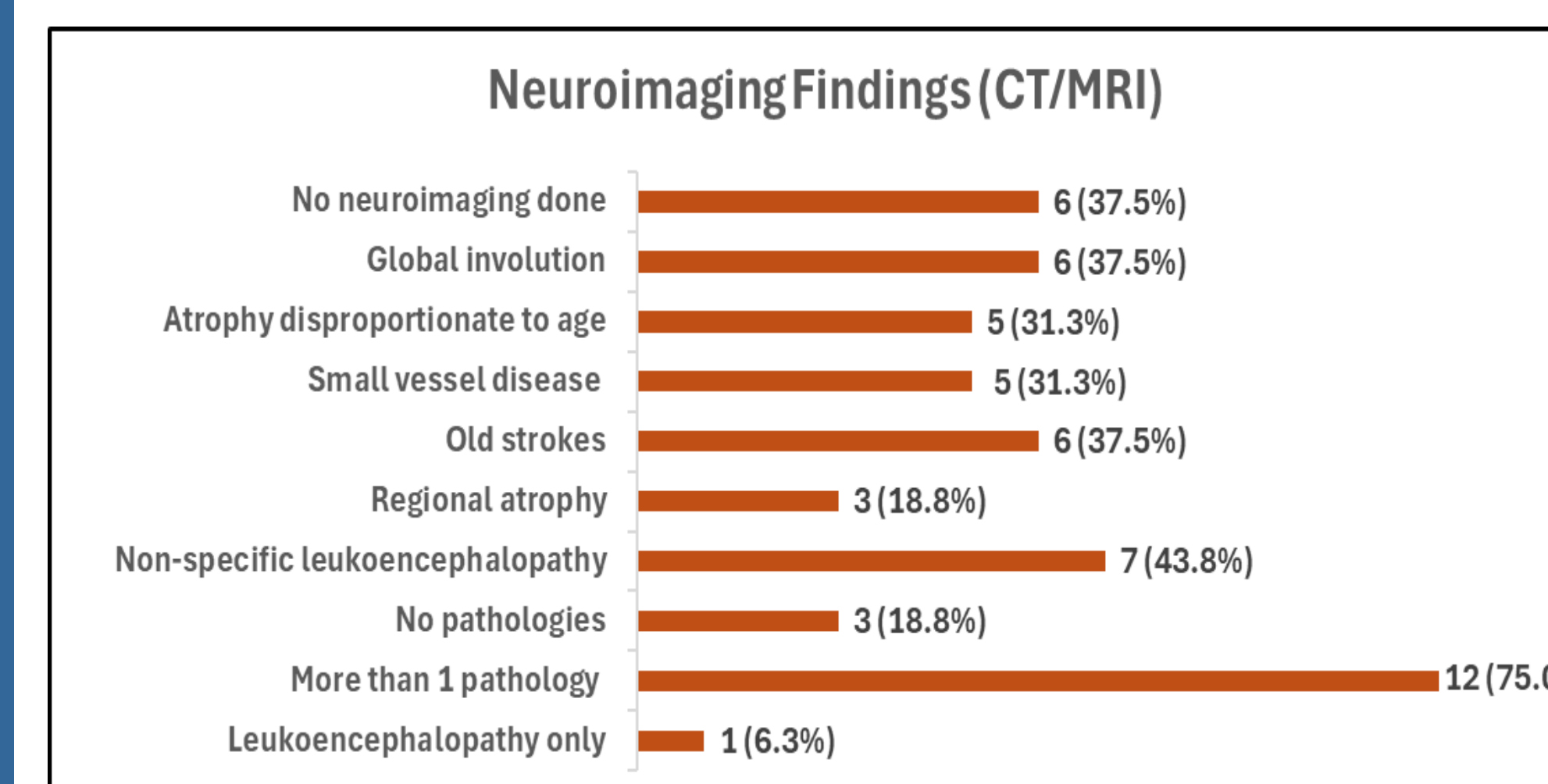
Psychosocial factors	
Alcohol use	4 (18.2%)
History of illicit drug use	2 (9.1%)
History of stimulant use	0 (0%)
Documented adverse childhood experiences*	2 (9.1%)
Remaining 20 patients either did not report any adverse childhood experiences or information was not documented	

Comorbidities	
History of non-CNS opportunistic infection	14 (63.6%)
History of CNS opportunistic infections	7 (31.8%)
Patients with cardiovascular risk factors	12 (54.5%)
Patients with vascular disease	3 (13.6%)
Concurrent psychiatric diagnosis	6 (27.3%)

HIV Indicators	
Immunocompromised at HIV diagnosis	12 (54.5%)
Immunocompromised at first visit to HIV-PSY clinic	9 (40.9%)
On Efavirenz-containing regimen	6 (27.3%)
On Dolutegravir-containing regimen	8 (36.4%)

Cognitive scores	
Mini Mental State Exam (MMSE), n = 7	Mean 19.9 (SD 4.63)
Montreal Cognitive Assessment (MOCA), n = 11	Mean 15.9 (SD 5.56)

Outcomes	
Poor psychiatric outcome up to 3 years post-first visit	11 (50.0%)
Poor HIV outcome up to 3 years post-first visit	6 (27.3%)



Discussion

•PLHIV with cognitive disorders are older adults at least 50 years of age.

•More than half of the group were immunocompromised at the time of HIV diagnosis, had a history of non-CNS opportunistic infections, and had cardiovascular risk factors.

•About one-third of the group had a past psychiatric history and a history of CNS opportunistic infections.

•Assessments were not standardized in the use of cognitive tests and neuroimaging. Mean cognitive test scores were clearly below threshold at diagnosis.

•Common neuroimaging findings included multiple pathologies, old strokes, non-specific leukoencephalopathy, and global involution.

•Half of the sample experienced a declining disease trajectory over 3 years after diagnosis

Conclusion

•The prevalence rate of cognitive disorders among PLHIV accessing care at the HIV-PSY clinic is low and may be due to under-detection due to lack of patient and clinician awareness

•The diagnostic assessment for cognitive disorders in HIV remains varied in practice and requires more standardization informed by current evidence

•Cognitive disorders in PLHIV appears multifactorial in aetiology in majority of cases and pure HIV-associated cognitive disorder is rare

•Possible aetiologies include other psychiatric disorders, vascular disease, and possible neurodegeneration

•The neuroprotective benefit of Integrase Inhibitors is not apparent in this sample

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