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Association between antiretroviral therapy initiation or reinitiation timing and neuroimaging-confirmed stroke in people with HIV

Authors:
Roland van Rensburg[1]
Alexander Smuts[1]
Camilla Pennefather[1]
Lauren Jennings[2]
Chantel Schreuder[2]
Gert van Zyl[3]
Naeem Brey[4]
Deanna Saylor[5]
Suzanne O'Hagan[6]
Tracy Kellermann[1]
Catherine Orrell[2]
Eric Decloedt[1]

Affiliations:
[1]Division of Clinical Pharmacology, Department of Medicine, Faculty of Medicine and Health Sciences, Stellenbosch University, Cape Town, South Africa

[2]Desmond Tutu Health Foundation, Cape Town, South Africa

[3]Division of Medical Virology, Department of Pathology, Faculty of Medicine and Health Sciences, Stellenbosch University, Cape Town, South Africa

[4]Division of Neurology, Department of Medicine, Faculty of Medicine and Health Sciences, Stellenbosch University, Cape Town, South Africa

[5]Department of Neurology, School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, United States

[6]Division of Radiodiagnosis, Department of Radiology, Faculty of Medicine and Health Sciences, Stellenbosch University, Cape Town, South Africa

Stroke among people with HIV (PWH) has been linked to initiating or reinitiating antiretroviral therapy (ART) within six months.[1,2,3] We examined this association in a large prospective cohort. We conducted a descriptive interim analysis of data from the ongoing AVALON study investigating stroke in PWH (NIH-1R21TW012384-01A1). Over 12 months (September 2024–August 2025), we included all PWH presenting with neuroimaging-confirmed acute/subacute stroke (imaging within three weeks of symptom onset) to Western Cape public sector hospitals with brain imaging facilities (n = 10). We identified 605 PWH with stroke. Median age was 44 years (interquartile range [IQR] 36–54), with 51% female at birth (Table 1). Ischaemic stroke comprised 85% of cases, mostly involving the middle cerebral artery territory (63%). Previous stroke (> 4 weeks before current) was evident in 17%. At presentation, 76% were on ART for a median 8.2 years (IQR 3.8–11.9), most commonly tenofovir/lamivudine/dolutegravir (73%). ART was initiated/reinitiated within six months prior to stroke in 24.4%, with a median of 68 days (IQR 26–119) from initiation/reinitiation to stroke. ART adherence derived from pharmacy refills was 57% in the preceding six months. The most recent median viral load was < 50 copies/mL (IQR < 20–6777), measured a median of 85 days (IQR 4–420) before stroke. We report the largest South African cohort of PWH with stroke to date. Participants were young, on currently recommended ART, and 28% had no comorbidities. A quarter initiated/reinitiated ART within six months of stroke, supporting previous reports suggesting a potential immune reconstitution-like syndrome.

Keywords: stroke; HIV; antiretroviral therapy; adherence; neuroimaging.

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Competing interests

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Authors' contributions

R.v.R. and E.D. conceptualised the study and methodology. R.v.R., E.D., and C.O. secured funding. R.v.R., A.S., C.P., C.O., L.J., and C.S. provided study coordination and data management. R.v.R., A.S., C.P., L.J., and C.S. performed the data collection. G.v.Z., N.B., D.S., S.O., and T.K. provided expert and material input on the data and data interpretation. R.v.R., A.S., C.P., L.J., and C.S. directly accessed and verified the underlying data reported in the abstract. R.v.R. and A.S. wrote

Corresponding author: Roland van Rensburg, rvr@sun.ac.za

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TABLE 1: Comorbidities and co-infections (N = 605).

Variable	Category	*n*	%
Comorbidities†		**435‡**	**72**
Hypertension		211	35
Dyslipidaemia		60	9.9
Diabetes		50	8.3
Chronic kidney disease		47	7.8
Heart failure		23	3.8
Arrhythmia		9	1.5
Heart valve disorder		7	1.2
Previous myocardial infarction		7	1.2
On treatment for comorbidities			
Yes		227	38
Co-infections§		**210**	**35**
Tuberculosis¶		127	21
	Pulmonary	58	46
	Meningitis	48	38
	Disseminated	21	16
Syphilis		59	9.8
Cryptococcus spp.		24	4.0
	Cryptococcal meningitis	19	79
On treatment for co-infections			
Yes		79	13

†, The top 8 comorbidities are shown; ‡, 92 had more than one comorbidity; §, The top 3 co-infections are shown; ¶, 9 had multi-site tuberculosis.

the original draft of the abstract. All authors reviewed the abstract, provided scientific input to the abstract, and agreed with the final version of the abstract

Ethical considerations

An application for full ethical approval was made to the Health Research Ethics Committee of Stellenbosch University and ethics consent was received on 03 May 2024. The ethics approval number is N23/11/140.

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Data availability

Study data will not be publicly available. Data can be made available to interested researchers after submission of a clear proposal to the corresponding author, R.v.R.

Disclaimer

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