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Background
A high but varying prevalence (15-69%) of cognitive impairment has been reported among HIV-1-infected individuals.1,2 To classify HIV-1 associated neurocognitive disorders (HAND), a set of diagnostic criteria (Frascati criteria) has been developed.3 Frascati criteria have high sensitivity for HAND, possibly resulting in a high false-positive rate and overestimation of HAND prevalence.4 Gisslén proposed modified criteria to increase specificity.4 Multivariate normative comparison (MNC) is a new statistical method specifically designed to control false-positive rate while retaining sensitivity.5

Objectives
- To determine the prevalence of HAND among HIV-1-infected men with suppressed viraemia on cART, aged ≥45.
- To assess whether MNC improves the detection of HAND as compared to Frascati and Gisslén’s criteria.

Methods
The AGEMIV Cohort Study investigates aging-associated comorbidities among HIV-1-infected individuals and highly comparable HIV-uninfected controls, all aged ≥45. HIV-1-infected participants are recruited at the HIV outpatient clinic of the Academic Medical Center in Amsterdam, The Netherlands, and HIV-uninfected controls from the ongoing Amsterdam Cohort Studies on HIV/AIDS and among Amsterdam Public Health Service sexual health clinic attendants. AGEMIV Cohort Study participants were consecutively invited to participate in a nested cognitive substudy. Additional eligibility criteria for the substudy were: male gender, no history of severe neurological disorders, no alcohol abuse or daily illicit drug use, and for the HIV-1-infected group: sustained suppression of HIV viremia on antiretroviral treatment (plasma HIV-RNA <40 copies/ml) for ≥12 months.

103 HIV-1-infected and 75 highly comparable HIV-uninfected participants were enrolled in the cognitive substudy. They underwent neuropsychological assessment covering six cognitive domains: fluency, attention, information processing speed, executive function, memory, and fine motor function.

Prevalence of cognitive impairment was assessed by Frascati and Gisslén’s criteria, as well as by MNC.

Results: cognitive impairment

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<tr>
<th>Frascati criteria</th>
<th>Gisslén’s criteria</th>
<th>MNC</th>
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<tbody>
<tr>
<td>p=0.61</td>
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Conclusions
- HAND by Frascati criteria was highly prevalent in HIV-positives but also in controls, confirming low specificity of this method.
- Gisslén’s criteria showed improved specificity, but sensitivity was reduced, resulting in a low HAND prevalence.
- MNC identified cognitive impairment in 18% of HIV-infected men and in 7% of uninfected controls.

Acknowledgements
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