Asymptomatic Neurocognitive Impairment is Associated with Progression to Symptomatic HIV-associated Neurocognitive Disorders in People with HIV: Findings from the Ontario HIV Treatment Network Cohort Study

Introduction

The importance of Asymptomatic Neurocognitive Impairment (ANI) as an intermediate stage between HIV-Associated Neurocognitive Disorder (HAND) and HIV-Associated Dementia (HAD) has been described previously. In the study by O’Hare et al. (2010) of the ANI cohort, we analyzed factors associated with progression to HAND.

Data from the Ontario HIV Treatment Network Cohort Study (OHTN), an observational cohort of people with HIV in Ontario, Canada, were analyzed to determine the risk of progression to symptomatic HAND (MND or HAD) and the role of potential factors associated with progression (e.g., virus, medications, demographic characteristics).

Methods

Study sample

Data were obtained from OHTN’s Canadian HIVRal Epidemiology database, an observational cohort of people with HIV in Ontario, Canada. Data were available for 478 participants from the end of follow-up (1993-2010), and were analyzed using survival analysis. Participants included in the analysis were those who were diagnosed with HIV and had at least one neurocognitive assessment.

Neurocognitive functioning

Neurocognitive functioning was assessed annually using a battery of tests that included the WAIS-III (spatial memory, verbal memory, and language); Hopkins Verbal Learning Test-Revised (HVLTR); and Visual Memory Scale-Revised (VMSR). Cognitive symptoms were assessed using the Brief Neuropsychological Battery and a short cognitive symptoms tool.

Data were collected from all visits at which participants were seen. Participants who were lost to follow-up were included in the analysis until the last visit.

Neurocognitive assessment

The neurocognitive assessments were administered annually and included tests of memory, attention, language, and executive function. The neurocognitive assessments were performed by trained interviewers and were scored using published norms.

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Results

Among the 679 participants (220 ANI and 379 NP-N) (2% 21%) who were enrolled during the study follow-up period, a total of 34 (12%) participants progressed to symptomatic HAND (MND or HAD) during the study follow-up period (median follow-up time: 34 months, interquartile range: 20 to 47).

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The Kaplan-Meier survival analysis showed that participants with ANI were more likely to experience earlier progression to symptomatic HAND than those who were not (ANI vs. NP-N). Kaplan-Meier estimates were used to compare ANI and NP-N participants on the time to progression to symptomatic HAND.

Conclusions

1) Asymptomatic Neurocognitive impairment diagnosis was associated with increased risk of progression to symptomatic HAND (i.e., Mild Neurocognitive Disorder or HIV-Associated Affective Dementia).

2) Regular monitoring (and retesting) of persons with ANI may help to identify those who may progress with neuropsychological impairments.

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References


