

Cognitive Performance Assessed by Moca In Epilepsy vs Probable Neudodegenerative impairment: A Comparative Clinical Study

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Introduction

Cognitive impairment is a common manifestation in patients with epilepsy as well as in those with neurodegenerative diseases. Systematic assessment of cognitive functions using validated instruments such as the Montreal Cognitive Assessment (MoCA) enables early detection of alterations and guides clinical management.

Objective

To compare MoCA scores between patients with epilepsy and those with probable neurodegenerative cognitive impairment, and to analyze the relationship between clinical variables and the most affected cognitive domains.

Method

This was an observational cross-sectional study in which the MoCA-Basic or conventional MoCA versions were applied according to participants' educational level. Global scores and domain-specific impairments were analyzed, as well as correlations with epilepsy duration, seizure frequency, and treatment type.

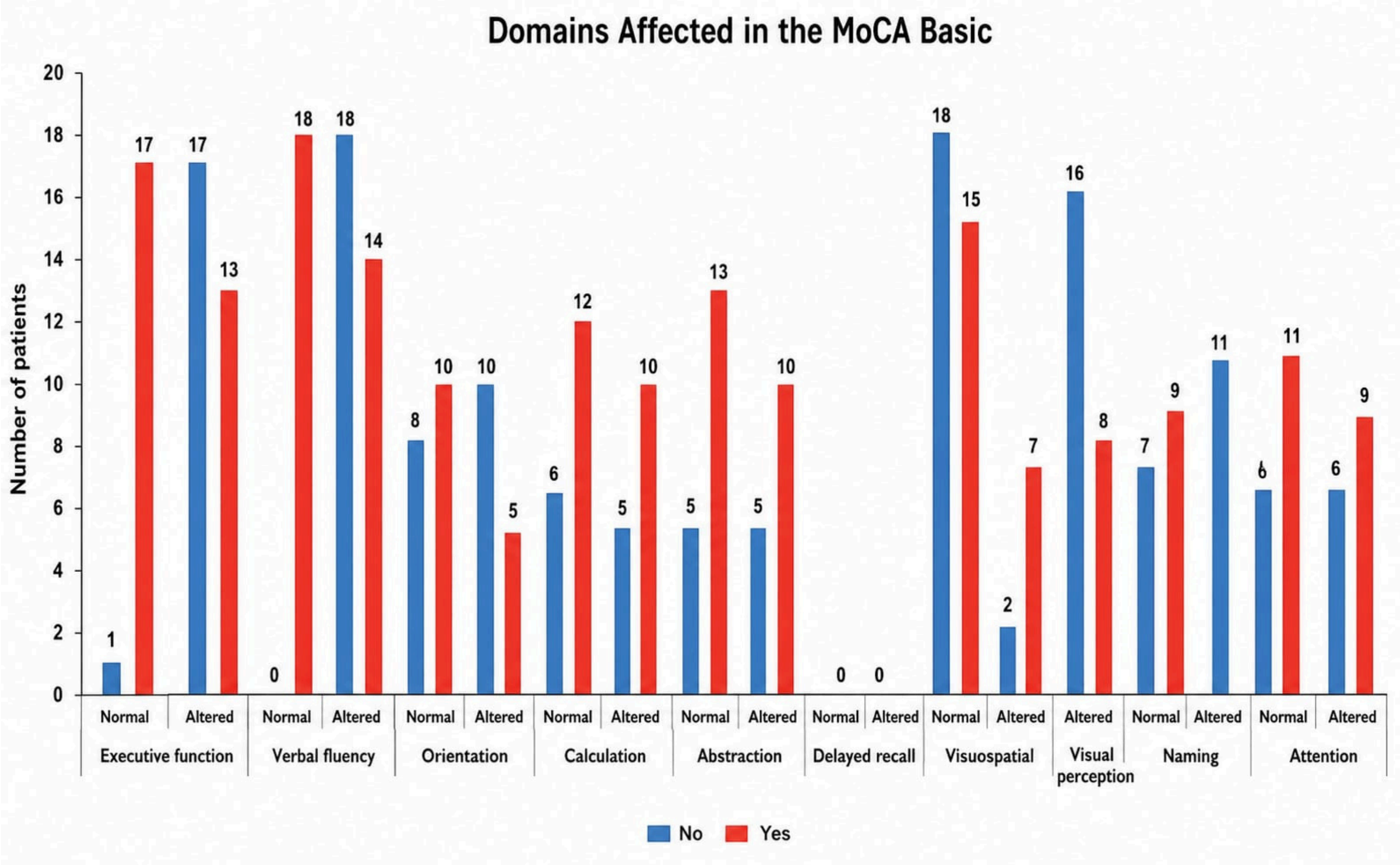
Results

Table 1.

	History of Epilepsy		
	No (n = 28)	Yes (n = 32)	Total (n = 60)
<i>N</i>	28 (46.7%)	32 (53.3%)	60 (100.0%)
MoCA score, mean (SD)	16.179 (6.891)	18.625 (6.656)	17.483 (6.821)
Age, mean (SD)	65.929 (13.286)	47.281 (16.971)	55.983 (17.892)
Sex, n (%)			
Male	6 (21.4%)	12 (37.5%)	18 (30.0%)
Female	22 (78.6%)	20 (62.5%)	42 (70.0%)

SD: Standard Deviation; MoCA: Montreal Cognitive Assessment.

The mean MoCA score was lower in patients with neurodegenerative cognitive impairment (16.1) than in those with epilepsy (18.6). Both groups showed relevant impairments in attention, executive functions, and delayed recall.



Although no statistically significant correlation was found between MoCA scores and epilepsy duration or seizure frequency, a trend toward lower cognitive performance in patients with more frequent seizures was observed. Executive function was the most affected domain in the epilepsy group.

Conclusion

Cognitive assessment using the MoCA test reveals significant impairments in patients with epilepsy, in some cases comparable to those observed in neurodegenerative conditions. These findings support the integration of cognitive screening into routine neurological care, enabling early and targeted therapeutic interventions based on the affected domains.

1.Kamondi A, Grigg-Damberger M, Löscher W, Tanila H, Horvath AA. Epilepsy and epileptiform activity in late-onset Alzheimer disease: clinical and pathophysiological advances, gaps and conundrums. Nat Rev Neurol. 2024 Mar;20(3):162-182. doi: 10.1038/s41582-024-00932-4. Epub 2024 Feb 14. PMID: 38356056.

2. Zawar I, Kapur J, Mattos MK, Aldridge CM, Manning C, Quigg M. Association of seizure control with cognition in people with normal cognition and mild cognitive impairment. Neurology [Internet]. 2024;103(6). Disponible en: <http://dx.doi.org/10.1212/wnl.00000000000209820>.

3.1.Chun CT, Seward K, Patterson A, Melton A, MacDonald-Wicks L. Evaluation of Available Cognitive Tools Used to Measure Mild Cognitive Decline: A Scoping Review. Nutrients. 2021 Nov 8;13(11):3974. doi: 10.3390/nu13113974. PMID: 34836228; PMCID: PMC8623828.