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Una nueva mirada a la cognición en esclerosis múltiple: el seguimiento ocular como herramienta para diferenciar perfiles cognitivos.

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UNA NUEVA MIRADA A LA COGNICIÓN EN ESCLEROSIS MÚLTIPLE: EL SEGUIMIENTO OCULAR COMO HERRAMIENTA PARA DIFERENCIAR PERFILES COGNITIVOS

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RESUMEN

El seguimiento ocular (ET) permite explorar de forma objetiva la relación entre cognición y función cerebral en la esclerosis múltiple (EM), donde el deterioro cognitivo es frecuente y variable. Objetivo: Investigar la asociación entre métricas oculomotoras derivadas de ET y los fenotipos cognitivos en personas con EM (PcEM). Método: Se realizó un estudio transversal en un centro especializado con PcEM que completaron evaluaciones clínicas y cognitivas. Se aplicaron BICAMS, PASAT y Go/No-Go con registro de métricas ET (ViewMind®): amplitud de sacadas, duración de la tarea, número de fijaciones, fijaciones simples y refijaciones. Se definieron los fenotipos: (1) preservado (CP), (2) alteración de memoria (OM), (3) disfunción atencional/ejecutiva (OAE), y (4) deterioro multidominio (MA). Resultados: Se incluyeron 112 PcEM (edad media: 31, 04±12, 07 años; escolaridad media: 13, 61±3, 35 años; EDSS mediana: 3, 0 [RIC: 1, 5-4]; duración de la enfermedad: 10, 15±7, 63 años; 62, 5% mujeres; 92% EM remitente-recurrente). La distribución fenotípica fue: CP (n=57), OM (n=15), OAE (n=10) y MA (n=30). El grupo CP difirió significativamente del grupo MA en todas las métricas de ET (p<0, 05). El número de fijaciones fue significativamente distinto entre CP y OM (p=0, 019), mientras que las fijaciones simples distinguieron CP de OAE (p=0, 015). Conclusión: El ET distingue perfiles cognitivos en EM y se proyecta como herramienta clínica digital con potencial.

Palabras clave
Esclerosis múltiple - Cognición - Seguimiento ocular - Fenotipos cognitivos

ABSTRACT

A NEW PERSPECTIVE ON COGNITION IN MS: EYE TRACKING AS A TOOL TO DIFFERENTIATE COGNITIVE PHENOTYPES

Background: Eye tracking (ET) enables an objective exploration of the relationship between cognition and brain function in multiple sclerosis (MS), where cognitive impairment is common and variable. Objective: To investigate the association between ET-derived oculomotor metrics and cognitive phenotypes in people with MS (PwMS). Method: A cross-sectional study was conducted at a specialized MS center with PwMS who completed clinical and cognitive evaluations. The BICAMS battery, PASAT, and Go/No-Go were administered along with ET recordings (ViewMind®), capturing metrics such as saccade amplitude, task duration, number of fixations, single fixations, and refixations. The cognitive phenotypes defined were: (1) cognitively preserved (CP), (2) isolated memory impairment (OM), (3) isolated attention/executive dysfunction (OAE), and (4) multidomain impairment (MA). Results: A total of 112 PwMS were included (mean age: 31.04±12.07 years; mean education: 13.61±3.35 years; median EDSS: 3.0 [IQR: 1.5-4]; disease duration: 10.15±7.63 years; 62.5% female; 92% relapsing-remitting MS). Cognitive phenotype distribution was: CP (n=57), OM (n=15), OAE (n=10), and MA (n=30). The CP group differed significantly from MA in all ET metrics (p<0.05). The number of fixations differed significantly between CP and OM (p=0.019), while single fixations distinguished CP from OAE (p=0.015). Conclusion: ET differentiates cognitive phenotypes in MS and shows promise as a scalable digital clinical tool.

Keywords
Multiple sclerosis - Cognition - Eye tracking - Cognitive phenotypes

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