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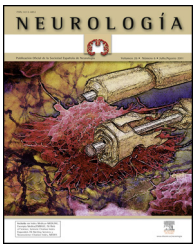

ORIGINAL ARTICLE

Test Your Memory is sensitive to cognitive change but lacks prospective validity☆

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KEYWORDS
Test Your Memory;
Mild cognitive impairment;
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Abstract
Objective: To determine the prospective validity of Test Your Memory (TYM) and its sensitivity to change in cognitive state.
Type of study: Longitudinal prospective.
Methods: This longitudinal prospective study followed 71 patients with subjective cognitive symptoms and 48 with mild cognitive impairment for a mean time period of 35.2 ± 15 months. Subjects did not have dementia or depression at the beginning of follow-up and each participant was given the TYM at least two times. A psychometric threshold was established to determine presence of a cognitive deficit (z-score ≤ 1.5 on at least one cognitive domain) and the Disability Assessment for Dementia scale was used to ensure full functional ability. The criterion for deterioration was a change in the stage on the Global Deterioration Scale.
Results: Sixty-one patients remained cognitively stable and 58 worsened. There were no differences between them with respect to sex, educational attainment, the initial stage on the GDS, or the score on the first TYM. Subjects who worsened were older than those who did not. The TYM increased an average of 0.04 points per month in patients who remained stable or improved (95% CI, −0.01 to 0.08) and decreased an average of 0.14 points per month in those whose condition worsened (95% CI, −0.19 to −0.09). Subjects with mild cognitive impairment who worsened displayed a sharper loss of TYM points than did subjects with subjective cognitive symptoms.
Conclusions: While the TYM lacks prospective validity, it is sensitive to changes in cognitive state.

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PALABRAS CLAVE
Test Your Memory;
Defecto cognitivo ligero;
Validez;
Demencia;
Enfermedad de Alzheimer;
Prueba cognitiva de cribado

El Test Your Memory es sensible al cambio cognitivo pero carece de validez prospectiva

Resumen
Objetivo: Determinar la validez prospectiva del Test Your Memory (TYM) y su sensibilidad al cambio de estado cognitivo.
Tipo de estudio: Longitudinal prospectivo.
Métodos: Se siguió a 71 enfermos con síntomas cognitivos subjetivos y 48 con defecto cognitivo leve durante un periodo de tiempo medio de $35{,}2 \pm 15$ meses. Los sujetos no tenían demencia ni depresión al comienzo del seguimiento y a todos se le administró al menos dos veces el TYM. Se aplicó un criterio psicométrico para determinar la existencia de defecto cognitivo ($\leq$ 1,5 puntos z en al menos un dominio cognitivo) y la escala Disability Assessment for Dementia para asegurar la indemnidad funcional. El criterio de empeoramiento fue el cambio de estadio en la Escala de Deterioro Global.
Resultados: Sesenta y un enfermos se mantuvieron cognitivamente estables y 58 empeoraron. No hubo diferencia entre ambos grupos con respecto al sexo, el nivel de instrucción, el estadio inicial de la GDS o la puntuación en el primer TYM. Los sujetos que empeoraron tenían más edad. El TYM aumentó un promedio de 0,04 puntos por mes en los pacientes estables o que mejoraron (IC95% −0,01 a 0,08) y disminuyó una media de 0,14 puntos por mes en los que empeoraron (IC95% −0,19 a −0,09). De los sujetos que empeoraron, en los que tenían defecto cognitivo leve la disminución de la puntuación del TYM fue más abrupta que en aquellos con síntomas cognitivos subjetivos.
Conclusiones: EL TYM carece de validez prospectiva pero es sensible al cambio de estado cognitivo.

Introduction

Subjective cognitive symptoms (SCS) are common among subjects older than 60. These symptoms also imply a higher probability of progressing to cognitive impairment or dementia.[1–3] Furthermore, some studies have reported an association between certain cognitive symptoms and performance on cognitive tests,[4,5] whereas other studies do not.[6] In fact, 'subjective memory complaints' may be a confusing term that indicates either overestimation (patients with depression) or underestimation of actual difficulties (anosognosic patients).[7–9] To avoid confusion about the nature of the complaint, some researchers suggest removing subjective memory loss from among the diagnostic criteria for mild cognitive impairment (MCI), or else redefining it as a complaint reported by the patient and corroborated by a reliable informant.[7,10] Furthermore, the annual incidence rate of MCI in subjects older than 65 ranges between 5% and 8%[11]; developing MCI has been linked to age and presence of vascular risk factors.[12] Regarding progression of MCI to dementia, the yearly conversion rate may be as high as 10%.[13] Subjects with objective cognitive impairment and SCS are more likely to develop cognitive decline.[14] However, using neuropsychological indicators is not an effective way of predicting MCI progression to dementia.[15] Results might be improved by including a combination of cognitive, imaging, and biochemical markers in the algorithm.[13,16] In addition, up to one fourth of the patients who meet MCI criteria in the initial evaluation improve during follow-up. Therefore, their risk of exacerbation is no greater than in subjects with no cognitive impairment.[17] Based on data extracted from the multi-centre longitudinal study The Alzheimer's Disease Neuroimaging Initiative, researchers developed an easy-to-calculate combined index to predict progression from MCI to Alzheimer disease.[18] This index, however, incorporates indicators of functional deficit. As such, the algorithm may be intrinsically flawed since it applies a predictive rule which includes criteria for the dementia which it intends to predict, and which are incompatible with MCI.

In clinical practice, in addition to checking for objective symptoms in patients attending a neurology clinic due to suspected cognitive dysfunction, doctors must also predict whether each patient's condition will deteriorate, improve, or remain stable. Prognosis clearly depends on the disease that led to the consultation, but many of these patients do not receive a final diagnosis and will be categorised as having SCS or MCI with no apparent functional deficit. After completing the initial evaluations, prognosis remains uncertain in most cases. Clinical indicators or other biomarkers are therefore necessary to help predict outcomes with some certainty.[19] Since some studies have observed that certain short cognitive tests or neuropsychological tests help predict cognitive decline in subjects with or without MCI,[16,18,20] our study aims to assess whether Test Your Memory (TYM)[21] may be useful to this end. In other words, we wish to assess