Original Article

Psychometric Properties of Alzheimer's Disease Assessment Scale-Cognitive Subscale for Mild Cognitive Impairment and Mild Alzheimer's Disease Patients in an Asian Context

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Abstract

Introduction: The purpose of the current study is to assess the psychometric properties of Alzheimer's Disease Assessment Scale-Cognitive subscale (ADAS-Cog) on patients with mild cognitive impairment (MCI) and mild Alzheimer's disease (AD) in a multicultural Asian context. Materials and Methods: Sixty-four mild AD patients (mean age ± SD; 72.24 ± 7.88 years), 80 MCI patients (66.44 ± 7.45 years) and 125 healthy controls (HCs) (61.81 ± 6.96 years) participated in the study. Participants underwent a clinical interview and serial neuropsychological testing. ADAS-Cog total and subtest scores were compared across the 3 groups. Receiver operating characteristics (ROC) analysis were performed and sensitivity, specificity, positive predictive values (PPVs) and negative predictive values (NPVs) were calculated. Results: Patients with MCI attained significantly worse neuropsychological test scores than healthy controls but significantly better results than patients with mild AD on ADAS-Cog total score, subtest items, and the delayed recall item (P <0.001). The best cutoff score to differentiate between MCI and HC was ≥4 (sensitivity = 0.73, specificity = 0.69, PPV = 0.90, NPV = 0.40), while the best cutoff score to distinguish between MCI and mild AD was ≥12 (sensitivity = 0.86, specificity = 0.89, PPV = 0.99, NPV = 0.32). Evidence of internal consistency of the ADAS-Cog (Cronbach α = 0.85) as well as convergent validity with the Mini-Mental State Examination (MMSE) (ρ = -0.75) and Montreal Cognitive Assessment (MoCA) (ρ = -0.81) (both P <0.001) was also found. Conclusion: The ADAS-Cog which is widely used in clinical trials is applicable to the Asian cohort. It is useful in the detection of MCI and mild AD as well as in distinguishing these 2 conditions.

Ann Acad Med Singapore 2016;45:273-83

Key words: Dementia, Neuropsychology, Psychometric validation

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