A Comparison of the Greek ACE-III, M-ACE, ACE-R, MMSE, and ECAS in the Assessment and Identification of Alzheimer's Disease

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Abstract

Objective:

This study aimed to adapt the Addenbrooke's Cognitive Examination-III (ACE-III) and Mini-Addenbrooke's Cognitive Examination (M-ACE) into Greek and then to examine the convergent validity against their predecessors Addenbrooke's Cognitive Examination-Revised (ACE-R) and Mini-Mental State Examination (MMSE) in a Greek population. Moreover, a primary aim was to appraise the utility of each screen by conducting a comparison of the psychometric properties of ACE-III, M-ACE, ACE-R, MMSE, and the Edinburgh Cognitive and Behavioural Amyotrophic Lateral Sclerosis (ALS) Screen (ECAS) in detecting Alzheimer's disease (AD).

Methods:

Forty patients with AD were recruited and matched with 38 controls. Bayesian Pearson's correlation analysis was conducted to examine the convergent validity. Receiver operating characteristic curve analysis was implemented to appraise the sensitivity and specificity of the tests in detecting AD.

Results:

The ACE-III, M-ACE, and the ECAS scores robustly correlated with ACE-R and MMSE. The ACE-III and the ECAS-ALS Non-Specific score were the most sensitive and specific tools in detecting AD, closely followed by ECAS Total score and M-ACE. Only ECAS Total score correlated with the duration of disease. The ECAS scores were more resilient to ceiling effects than the other screens. M-ACE produced fewer ceiling effects than MMSE.

Conclusion:

The Greek ACE-III and M-ACE were successfully adapted and showed good convergent validity against their predecessors. They showed very good psychometric properties in detecting AD and may be considered in hectic clinical settings. ECAS Total score and ECAS-ALS Non-Specific showed comparable psychometric properties in the detection of AD and may be considered in polypathological clinics where motor impairments are common.

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