Dementia and Neurocognitive Disorders 2014; 13: 94-100
http://dx.doi.org/10.12779/dnd.2014.13.4.94

■ **ORIGINAL ARTICLE** ■

(CDR-SB) MMSE, HDS-R MoCA

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A Comparison of the Performances on the MMSE, HDS-R, and MoCA According to the CDR Sum of Boxes in Amnestic Mild Cognitive Impairment and Vascular Mild Cognitive Impairment

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Background: O'Bryant et al. (2008) argued that the CDR Sum of Boxes (CDR-SB) can be used to distinguish MCI from very early dementia in patients with CDR-GS of 0.5. They reported that the optimal CDR-SB cut-off score was 2.5. The present study was conducted to examine whether the subgroups classified with CDR-SB scores showed the corresponding group differences on the cognitive tests. **Methods:** The subjects were 45 amnestic multi-domain MCI (amMCI) and 53 vascular MCI (VaMCI) with CDR-GS of 0.5. Each patient group was classified into "mild (0.5-2.0)" and "severe (2.5-4.0)" subgroups based on the CDR-SB. As the result, 4 groups were formed such as mild amMCI (n = 23), severe amMCI (n = 22), mild VaMCI (n = 29), and severe VaMCI (n = 24). The subjects were given the MMSE, HDS-R, and MoCA. The MANCOVA was conducted separately for each test with a Bonferroni correction for multiple comparisons. **Results:** Severe groups of both amMCI and VaMCI showed significantly lower performances than two mild groups in MMSE, HDS-R, and MoCA. It was found that "serial 100-7" was a good item to discriminate between the mild and severe groups in both amMCI and VaMCI. Items measuring "orientation" or "naming" showed significant subgroup differences in the amMCI, whereas items related to "memory," "visuospatial construction," or "frontal/executive function" showed significant subgroup differences in the VaMCI. **Conclusions:** These results showed that there were significant differences in cognitive functions between the two subgroups with CDR-GS of 0.5. The results about the items discriminating between subgroups in amMCI and VaMCI were consistent with the previous findings about the progression of cognitive impairments in AD and VaD. Therefore, these results support the use of CDR-SB as a guideline for distinguishing MCI from early dementia.

Key Words: *Mild cognitive impairment (MCI), Dementia, Clinical Dementia Rating Global Score (CDR-GS), Clinical Dementia Rating Sum of Boxes (CDR-SB), Mini-Mental State Examination (MMSE), Revised Hasegawa's Dementia Scale (HDS-R), Montreal Cognitive Assessment (MoCA)*

Received: November 20, 2014
Revision received: December 23, 2014
Accepted: December 23, 2014

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*본 연구는 한림대학교 교비학술연구과제 지원사업(HRF-201203-002)의 지원에 의하여 이루어진 것임.

치매의 조기 탐지와 예방의 중요성이 강조됨에 따라서 정상 노화와 치매의 중간 단계로 알려진 경도인지장애(Mild Cognitive Impairment, MCI)에 대한 관심이 증가하고 있으며 이에 관한 연구도 활발히 수행되고 있다[1, 2]. MCI의 상당수는 후에 알츠하이머형 치매나 혈관치매로 발전되는 것으로 알려져 있으며, 저하된 인지기능의 종류와 인지기능 저하의 원인에 따라서 다양한 하위유형으로 분류되고 있다[3, 4].

그 중에서 기억성 경도인지장애(amnestic MCI, amMCI)는 환자가 1) 주관적으로 기억력 장애를 호소하고, 2) 동일한 나이와 교육수준을 가진 정상 규준과 비교하여 객관적인 기억력 검사에서 정상범주 이하의 수행을 보이고, 3) 일상생활기능은 유지하고 있으며, 4) 치매가 아닌 경우를 말한다[3]. amMCI는 인지기능 중에서 기억력만 저

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