

Neuropsychological Differentiation between Alzheimer's Disease and Vascular Dementia

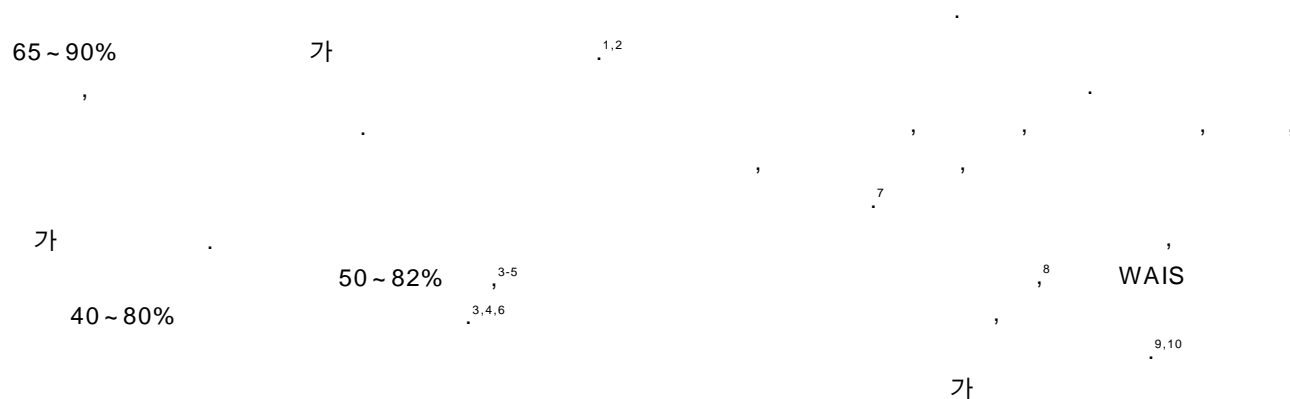
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Background : Neuropsychological Differentiation between Alzheimer's disease and vascular dementia has been controversial. The aim of this study was to detect neuropsychological differences between Alzheimer's disease (AD) and vascular dementia (VD). **Methods** : Twenty one patients who met the criteria for probable AD according to the National Institute of Neurological Disorders and Stroke and the Alzheimer's Disease and Related Disorders Association (NINCDS-ADRDA) and 22 patients who met criteria for probable VD according to the National Institute of Neurological Disorders and Stroke and the Association Internationale pour la Recherche et l'Enseignement en Neurosciences (NINDS-AIREN), were included in this study. These two dementia groups were matched for age, sex, education, Mini-Mental State Examination score, and severities of dementia. All patients underwent the Seoul Neuropsychological Screening Battery (SNSB). **Results** : Patients with VD showed greater deficits in verbal fluency ($P<.05$) than AD patients. However, AD patients, compared with VD patients, showed greater deficits in verbal memory functions including the 3 words recall task. Otherwise, no significant between-group differences were found in task results. **Conclusions** : Neuropsychologically, patients with VD differ from patients with AD only in a few cognitive domains.

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Key Words : Alzheimer disease, Vascular dementia, Neuropsychological test



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Table 1. Demographic characteristics of AD and VD patients(percentages in parentheses)

Variables	Alzheimer's disease(n=21)	Vascular dementia(n=22)	p-value
Age(years)			
Mean±SD	77.9±5.3	74.3±7.7	NS*
Range	68~84	62~89	
Sex			
Male	9(43)	13(59)	NS ⁺
Female	12(57)	9(41)	
Education(years)	5.9±4.6	7.4±3.9	NS*
Duration(month) of illness	24.7±23	32.1±37.1	NS*
K-MMSE	16.2±3.3	17.1±4.2	NS*
Degree of dementia			
Mild (CDR 1)	10	9	NS ⁺
Moderate(CDR 2)	11	13	

NS: statistically non-significant, K-MMSE: korean version mini-mental state examination

p value>0.05 by Student T test* and Fisher's exact tests⁺

AD : Alzheimer's disease

VD : Vascular dementia

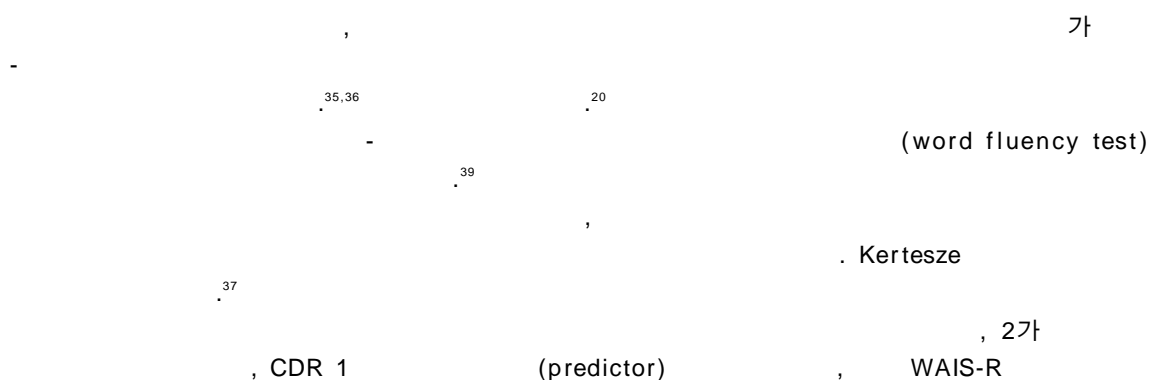


Table 2. Neuropsychologic performance of Alzheimer's disease and vascular dementia

Variables	AD(N=21)	VD(N=22)	p value
Attention			
Serial 7's	2.0±1.8	1.6±1.7	0.492
Digit span forward	4.2±0.8	4.4±1.0	0.570
Digit span backward	1.9±1.1	1.8±1.3	0.897
Letter cancellation	6/21(29)	4/22(18)	0.112
Language & Related function			
K-Boston naming test	20.2±10.8	16.2±10.0	0.06
Spontaneous speech			
fluency	0/21(0)	0/22(0)	
comprehension	3/21(14)	4/22(18)	1.000
repetition	2/21(10)	1/22(5)	0.607
reading	1/21(5)	2/22(10)	0.200
writing	1/21(5)	5/22(23)	0.062
Praxis	20/21(95)	18/22(82)	0.345
Finger naming	0/21(0)	1/22(5)	1.000
Calculation	15/21(71)	13/22(59)	0.333
Body part identification	2/21(10)	2/22(10)	1.000
Rt.-Lt. orientation	3/21(14)	5/22(23)	0.698
Visuospatial Function			
Interlocking pentagon	13/21(62)	15/22(68)	0.495
Rey CFT copy	13.4±8.8	10.1±7.3	0.199
Memory function			
Orientation to time	2.6±1.0	3.1±1.4	0.103
Orientation to place	1.3±1.3	1.9±1.5	0.161
3 words registration	2.8±0.4	2.7±0.6	0.487
3 words recall	0.4±0.7	1.0±0.9	0.036*
Remote memory	1.9±1.6	2.3±1.8	0.503
K-HVLT free recall	8.6±3.4	9.3±3.7	0.317
K-HVLT 20min delayed recall	0.5±1.7	0.4±0.9	0.335
K-HVLT recognition part	2.3±2.2	3.4±2.5	0.141
Rey copy immediate recall	1.8±2.5	2.8±3.3	0.478
Rey copy 20min delayed recall	1.2±2.1	1.6±3.0	0.694
Frontal/Executive functions			
Contrasting program	9/21(43)	7/22(32)	0.530
Go-No-Go test	16/21(76)	14/22(64)	0.631
Alternating square & triangle	14/21(67)	11/22(50)	0.223
Luria loop	13/21(62)	13/22(59)	0.360
Word fluency animal	6.3±2.6	5.2±2.7	0.249
object	5.1±3.0	3.1±2.9	0.026*
Abstract reasoning	21/21(100)	19/22(86)	0.233

Rey CFT: Rey complex figure test, K-HVLT: Korean version Hopkins Verbal Learning Test

p<0.05: *: by student T-test and Mann-Whitney Test



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p < 0.05

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