

주정 의존 환자에서 7분선별검사를 이용한 인지장애의 평가*

전진숙^{1)†} · 윤한철¹⁾ · 이광영²⁾ · 오병훈³⁾

Assessment of Cognitive Disorders in Alcoholics Using the 7 Minute Screening Battery*

Jin-Sook Cheon, M.D.,^{1)†} Han-Cheol Yoon, M.D.,¹⁾ Kwang-Young Lee, M.D.,²⁾ Byoung-Hoon Oh, M.D.³⁾

ABSTRACT

Objectives : Chronic alcohol consumption has been known to result in various neurocognitive deficits. Many neuropsychological studies revealed that the major disturbances occurred in the executive function, learning and short-term memory, visuospatial performance function, perceptuo-motor skills, and abstraction and problem solving abilities. This study was done to identify which cognitive areas might be mainly affected.

Methods : The cognitive disturbance was evaluated using the Korean Version of the Mini Mental State Examination(MMSE - K) and the 7 Minute Screen(7MS) in male inpatients with alcohol dependence(N=31) as well as in age and education level matched healthy male controls(N=30). Four individual tests of the 7MS were consisted of the Benton Temporal Orientation Test, the Enhanced Cued Recall, the Clock Drawing and the Category Fluency.

Results :

1) The average scores of four individual test of the 7MS for the alcoholics were 2.77 ± 4.38 for the Benton Temporal Orientation Test, 13.90 ± 2.02 for the Memory Test(the Cued Recall 6.77 ± 1.94 , the Uncued Recall 7.10 ± 2.45), 5.84 ± 1.86 for the Clock Drawing, and 12.58 ± 3.29 for the Category Fluency. Except the Benton Temporal Orientation Test, there were statistically significant differences between test scores of alcoholics and those of controls($p < 0.01$).

2) The alcoholics who had MMSE - K score < 24 were 9.68%. The average(\pm S.D.) score of the MMSE - K for the patient group(27.23 ± 2.62) was significantly($p < 0.001$) lower than that of the healthy controls(29.20 ± 1.24). There were no statistically significant differences between four individual test scores of the 7MS of alcoholics with the MMSE - K score < 24 (N=3) and those of alcoholics with the MMSE - K score ≥ 24 (N=28).

3) Four individual test scores of the 7MS seemed to have statistically significant association with such variables as MMSE - K, duration of alcohol drinking, blood magnesium concentration, liver function and thyroid function.

Conclusion : Mild deficits of cognitive areas such as orientation, memory, visuospatial abilities and verbal fluency could be found in alcohol dependence.

KEY WORDS : Alcohol dependence · Neurocognitive deficit · The 7 Minute Screen · Executive function · Short-term memory · Visuospatial.

2001 10 25~26

The essential point of this paper was orally presented at the Annual Meeting of Korean Neuropsychiatric Association on October 25-26 in 2001.

¹⁾ Department of Neuropsychiatry, Kosin University, School of Medicine, Busan, Korea

²⁾

Department of Occupational and Environmental Medicine, Kosin University, School of Medicine, Busan, Korea

³⁾ Department of Psychiatry, Yonsei University, College of Medicine, Seoul, Korea

†교신저자 : , 602 - 702 34
) (051) 990 - 5070,) (051) 241 - 5069 E - mail) cheonjs@kosin.md

서 론

DSM - (American Psychiatric Association 1994) 31

75% (Charn-ess 1993). 10% 50~ (Wernicke - Korsakoff (Dufour 1993)). 12.5%가

30 44.87(9.03) , 46.30 (10.21) , 10.61(3.40) , 10.80(3.39) , 가 (1).

50~70% (Pfefferbaum Rosenbl-oom 1993). (event - related potentials, ERP) (Porjesz Begleiter 1993). (Harper Kril 1993). (Oscar - Berman Hutner 1993).

2. 연구방법

1 MMSE - K(1989 ; 1989) 7MS(Solomon 1998 ; Solomon Pendlebury 1998) 가 . Michigan Alcoholism Screening Test(MAST - K)(1985) 가 , Hamilton Depression Scale 가 .

7 (The 7 Minute Screen, 7MS) 가 Mini Mental State Examination(MMSE - K) 가 ()

(2). 가 MMSE - K 7MS 3. 통계분석 SPSS 10. for Windows Student t - Test MMSE - K 23 , Mann - Whitney Test Two - Sample Kolmogorov - Smirnov Test 7

대상 및 방법

1. 연구대상

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Table 1. Group characteristics

	Controls(N=30)	Alcoholics(N=31)	p-Value*
Age(Yrs.)	46.30 ± 10.21	44.87 ± 9.03	0.564
Education(Yrs.)	10.80 ± 3.39	10.61 ± 3.40	0.830
MMSE-K**	29.20 ± 1.24	27.23 ± 2.62	0.000

* These data represent Mean ± S.D. *Student t-test

**MMSE-K : Korean Version of the Mini Mental State Examination

Pearson 7 2.77(4.38), 13.90(2.02), Cued Recall 6.77(1.94), Uncued Recall 7.10(2.45), 5.84(1.86), 12.58(3.29) (p<0.01), (p<0.005), (p<0.001)

결 과

1. 주정외준군과 대조군에서 7분선별검사의 비교

(3). 7 가 1.20(1.27), 15.20(1.42), Cued Recall 4.37(2.20), Uncued Recall 10.83(2.94), 7.00(0.00), 21.03(2.36) 7 가

Table 2. Laboratory test results of the alcoholics(N=31)

Laboratory test	Mean ± S.D.
Na(meq/L)	141.03 ± 4.29
K(meq/L)	4.05 ± 0.41
Cl(meq/L)	106.35 ± 3.98
Ca(meq/L)	9.14 ± 0.47
Mg(meq/L)	1.97 ± 0.27
Hb(g/dL)	13.02 ± 2.26
Hct(%)	38.91 ± 5.59
SGOT(IU/L)	67.13 ± 60.85
SGPT(IU/L)	52.13 ± 61.50
r-GTP(U/L)	220.71 ± 242.61
Ammonia(ug/dL)	446.12 ± 16.15
T ₃ (ng/dL)	91.43 ± 27.37
TSH(μ IU/ml)	2.18 ± 1.21
Free T4(ng/dL)	1.14 ± 0.19
Amylase(U/L)	64.76 ± 28.24
Lipase(U/L)	214.45 ± 239.00
Triglyceride(mg/dl)	161.83 ± 118.31
Cholesterol(mg/dl)	153.48 ± 49.13

Table 3. Comparison of individual test scores of the 7 Minute Screen between controls and alcoholics

7 MS **	Controls (N=30)	Alcoholics (N=31)	p-Value*
Benton Temporal Orientation Test	1.20 ± 1.27	2.77 ± 4.38	0.063
Memory Test			
Uncued Recall	10.83 ± 2.94	7.10 ± 2.45	0.000
Cued Recall	4.37 ± 2.20	6.77 ± 1.94	0.000
Total Recall	15.20 ± 1.42	13.90 ± 2.02	0.005
Clock Drawing Test	7.00 ± 0.00	5.84 ± 1.86	0.001
Verbal Fluency Test	21.03 ± 2.36	12.58 ± 3.29	0.000

. These data represent Mean ± S.D.

*Student t-test

**7MS : the 7 Minute Screen

2. MMSE-K에 따른 7분선별검사의 비교

MMSE - K 24 9.68% , 27.23(2.62) , (p<0.001) 29.20(1.24) (1). MMSE - K 24 (N=3) MMSE - K 24 (N=28) 7 (4). , MMSE - K 24 (N=3) 3.33(2.08), 13.67(2.08), 4.00(3.61), 11.33(3.06) . MMSE - K 24 (N=28) 2.71(4.58), 13.93(2.05), 6.04(1.57), 12.71(3.34) . MMSE - K 24 (N=3) MMSE - K 24 (N=28) 7 가

3. 7분선별검사에 영향 미치는 요인

Table 4. Comparison of individual test scores of the 7 Minute Screen between alcoholics with MMSE-K <24 and those with MMSE-K ≥24

7MS**	Alcoholics with MMSE-K*** <24(N=3)	Alcoholics with MMSE-K ≥24(N=28)	p-Value*
Benton Temporal Orientation Test	3.33 ± 2.08	2.71 ± 4.58	0.192
Memory Test			
Uncued Recall	5.00 ± 2.00	7.32 ± 2.42	0.120
Cued Recall	8.67 ± 3.79	6.57 ± 1.64	0.357
Total Recall	13.67 ± 2.08	13.93 ± 2.05	0.837
Clock Drawing Test	4.00 ± 3.61	6.04 ± 1.57	0.232
Verbal Fluency Test	11.33 ± 3.06	12.71 ± 3.34	0.565

. These data represent Mean ± S.D.

*Mann-Whitney Test

**7MS : the 7 Minute Screen

***MMSE-K : Korean Version of the Mini Mental State Examination

Table 5. Correlation of individual test scores of the 7 Minute Screen with variables in the alcoholics

	Benton Temporal Orientation Test	Memory Test			Clock Drawing Test	Verbal Fluency Test
		Uncued Recall	Cued Recall	Total Recall		
Age (Yrs.)	0.014	-0.275	0.312	-0.050	-0.292	0.017
Education (Yrs.)	-0.073	0.196	-0.034	0.232	-0.047	-0.045
¹ MMSE-K	-0.379*	0.671**	-0.363*	0.483**	0.561**	0.193
² Duration (Yrs.)	0.100	-0.380*	0.451*	-0.049	-0.108	-0.048
³ MAST-K	0.149	-0.027	0.053	0.028	0.065	0.085
⁴ HDS	0.321	-0.304	0.198	-0.206	-0.231	-0.235
Na (meq/L)	-0.145	-0.121	0.145	0.004	-0.120	0.017
K (meq/L)	-0.059	-0.187	-0.018	-0.234	-0.189	0.260
Cl (meq/L)	0.224	-0.256	0.277	-0.053	-0.041	-0.052
Ca (meq/L)	0.102	0.096	-0.068	0.043	-0.213	-0.062
Mg (meq/L)	0.301	-0.432*	0.274	-0.320	-0.271	-0.458**
Hb (g/dL)	-0.296	0.132	-0.101	0.068	0.305	0.274
Hct (%)	-0.294	0.140	-0.111	0.074	0.297	0.231
SGOT (IU/L)	-0.006	0.083	-0.081	0.014	-0.209	-0.361*
SGPT (IU/L)	-0.041	0.143	-0.086	0.081	-0.002	-0.200
r-GTP (U/L)	-0.059	-0.031	-0.127	-0.172	-0.177	-0.164
Ammonia (ug/dL)	0.136	-0.144	0.064	-0.085	-0.242	-0.064
T ₃ (ng/dL)	0.528*	-0.299	0.057	-0.420	-0.071	0.169
TSH (μ IU/ml)	0.174	-0.317	0.280	-0.217	-0.664**	-0.490
Free T ₄ (ng/dL)	0.109	-0.251	0.096	-0.302	-0.550*	-0.404
Amylase (U/L)	0.162	-0.183	0.050	-0.170	-0.019	-0.092
Lipase (U/L)	0.093	-0.239	0.101	-0.193	0.120	0.049
Triglyceride (mg/dl)	-0.096	-0.274	0.060	-0.282	0.200	0.355
Cholesterol (mg/dl)	-0.054	0.173	-0.335	-0.102	-0.008	0.086

*p < 0.05

**p < 0.01

. These data represent correlation coefficients ()

¹MMSE-K : Korean Version of the Mini Mental State Examination

²Duration : Duration of alcohol drinking

³MAST-K : Korean Version of the Michigan Alcoholism Screening Test

⁴HDS : Hamilton Depression Scale

(5). , MMSE - K , , (Reichman 1994). Parsons (r=0.483, p<0.01) (r=0.561, p<0.01) , (1993) (r= -0.379, p<0.05) (semantic memory) (perceptual - motor), Uncued Recall (r= -0.380, p<0.05) (explicit memory) 05), Cued Recall (r=0.451, p<0.05) (object memory) Uncued Recall(r= -0.432, p<0.05) (spatial memory) (r= -0.458, p<0.01) . SGOT (Duka 2001), T₃ (r=0.528, p<0.05) 1998), 가 (Wecker Nadel (encoding) 05), TSH(r= -0.664, p<0.01) T₄(r= -0.550, p<0.05) (retrieval) 가 (Weissenborn Duka 2000), , 7 가 (Brown 2000). (executive MMSE - K, , skills) , (Munro 2000). , 가

고 찰

7

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 facilitation) (Bruce 1999) (animal fluency), 가 ,
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