

정신분열병에서 지연성 운동장애와 인지결함의 연관성*

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Association of Tardive Dyskinesia with Cognitive Deficit in Schizophrenia*

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ABSTRACT

To understand a mechanism of underlying cognitive deficit in schizophrenia, the risk factors, cognitive function, blood dopamine concentrations and glutamate dehydrogenase activities of male schizophrenics with tardive dyskinesia(N=30) were compared with those of schizophrenics without tardive dyskinesia(N=30).

The results were as following ;

- 1) The age, duration of illness and duration of medication were significantly more in schizophrenics with tardive dyskinesia than schizophrenics without tardive dyskinesia(respectively $p < 0.005$, $p < 0.0001$, $p < 0.0001$).
- 2) The scores of MMSE, TIQ, VIQ and PIQ were significantly lower in schizophrenics with tardive dyskinesia than schizophrenics without tardive dyskinesia (rspectively $p < 0.0001$).
- 3) Plasma dopamine concentrations were tended to be higher, and serum glutamate dehydrogenase activities were tended to be lower in schiz-ophrenics with tardive dyskinesia than schizophrenics without tardive dyskinesia.
- 4) The cognitive deficit seemed to be negatively correlated with duration of illness and duration of medication(respectively $r = -0.496$, $r = -0.615$).

KEY WORDS : Schizophrenia · Tardive dyskinesia · Cognitive deficit.

서 론

(tardive dyskinesia, TD)

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가, TD 가, (Macpherson Collis 1992). (Crow

1980 ; Waddington 1985 ; Waddington 1987).

가 (Thomas Mc - Guire 1986 ; Waddington Youssef 1986 ; Wade 1993 ; Myslobodsky 1993). TD levodopa (dopamine) TD (basal ganglia) TD 가 (Klawans 1973). 가 (Cummings Benson 1984). TD (substantia nigra) (brain stem) (gliosis) (Christensen 1970).

(supersensitivity) TD (Waddington 1990). TD -aminobutyric acid(GABA) , GABA A (agonist)가 TD (Kaplan Saddock 1995).

TD 가 TD glutamate dehydrogenase(GLDH)

대상 및 방법

1. 연구대상

1997 9 DSM - (American Psychiatric Association 1994) TD가 30 TD가 30 TD가 39.6 ± 5.6 , TD

가 35.0 ± 4.9 , 1 (1).

2. 연구방법

1) 지연성 운동장애 및 인지기능 평가

. TD (Abnormal In-voluntary Movement Examination Scale, AIMS)(Guy 1976 ; National Institute of Mental Health 1975) 가 (Tardive Dyskinesia Rating Scale, TDRS) (Simpson 1979) . (Mini Mental State Examination Korean Version, MMSE - K) (Korean Wechsler Intelligence Scale, KWIS) (Total Intelligence Quotient, TIQ), (Verbal Intelligence Quotient, VIQ) (Performance Intelligence Quotient, PIQ)

2) 혈중 도파민 농도와 Glutamate Dehydrogenase 활성도 측정

TD가 30 , TD가 8 . (high performance liquid chromatography, HPLC, Bio - Rad Comp) . , 1ml 4M HClO₄ 0.125ml 500 ul internal standard 25ul alumina 가 vortex mixer 37 °C 5 10 2 0.2ul microfilter HPLC (225ug/L) 25ul (pH 7.0) 가 (1).

GLDH COBAS BIO 20ul 200ul(Monotest GLDH kit) 가 37 °C 2 10ul 가 1.5 10 20 340nm COBAS BIO

TD가 TD가 GL - DH GLDH

3)통계분석

7.0(Microsoft , 1995) (Mintab , 1987)

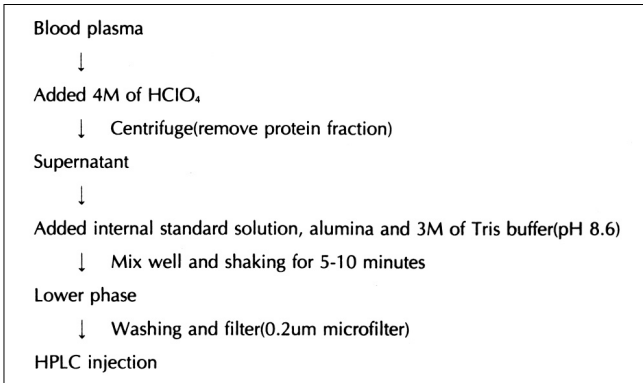


Fig. 1. Measurement of plasma dopamine concentrations.

Table 1. Comparison of demographic data between schizophrenia with tardive dyskinesia(TD) and without tardive dyskinesia

	Schizophrenia with TD (N=30)	Schizophrenia without TD (N=30)	p-value ^a
Age(Yrs.)	39.6 ± 1.0	35.0 ± 0.9	p<0.005
Education(Yrs.)	7.5 ± 0.5	9.7 ± 0.5	p<0.005
Age at onset(Yrs.)	23.6 ± 0.8	25.6 ± 0.9	N.S. ^b
Duration of illness(Yrs.)	16.0 ± 0.8	9.4 ± 0.6	p<0.0001
Duration of medication(Yrs.)	11.5 ± 0.7	5.5 ± 0.4	p<0.0001
Subtype of schizophrenia			
Paranoid	1(3.3%)	1(3.3%)	N.S.
Hebephrenic	2(6.7%)	0(0.0%)	N.S.
Catatonic	0(0.0%)	1(3.3%)	N.S.
Undifferentiated	6(20.0%)	7(23.4%)	N.S.
Residual	21(70.0%)	21(70.0%)	N.S.

a : two-tailed t-test or ²-test
b : N.S. ; non-significant
· These data represent mean ± SE or number(%)

GLDH ² , GLDH

결 과

1. 인구통계학적 특징

TD가 (39.6 ± 5.6 , 7.5 ± 2.5 , 16.0 ± 4.6 , 11.5 ± 3.6) TD가 (35.0 ± 4.9 , 9.7 ± 2.7 , 9.4 ± 3.2 , 5.5 ± 2.4) 가 (p<0.005, p<0.005, p<0.0001, p<0.0001, 1). TD가 (23.6 ± 4.1) TD가 (25.6 ± 4.9)

Table 2. Comparison of cognitive function between schizophrenia with tardive dyskinesia and without tardive dyskinesia

	Schizophrenia with TD (N=30) Mean ± SE	Schizophrenia without TD (N=30) Mean ± SE	p-value ^a
MMSE-K	23.6 ± 0.6	27.0 ± 0.3	p<0.0001
TIQ	74.3 ± 3.7	94.7 ± 2.6	p<0.0001
VIQ	79.5 ± 3.5	96.3 ± 3.0	p<0.0001
PIQ	75.4 ± 2.8	93.1 ± 2.2	p<0.0001

a : two-tailed t-test
· MMSE-K=mini mental state examination korean version, TIQ=total intelligence quotient, VIQ=verbal intelligence quotient, PIQ=performance intelligence quotient

Table 3. Comparison of plasma dopamine concentrations and serum glutamate dehydrogenase(GLDH) activities between schizophrenia with tardive dyskinesia(TD) and without tardive dyskinesia

	Schizophrenia with TD (N=30) Mean ± SE(pg/ml)	Schizophrenia without TD (N=30) Mean ± SE (U/L)	p-value ^a
Dopamine below 30pg/ml ^c	26(86.7%)	25(83.3%)	N.S.
above 30pg/ml	4(13.3%)	5(16.7%)	N.S.
GLDH below 4U/L ^d	24(80.0%)	18(60.0%)	N.S.
above 4U/L	6(20.0%)	12(40.0%)	N.S.

a : two-tailed t-test or ²-test
b : N.S. ; non-significant
c : normal level of plasma dopamine concentrations^E 30pg/ml
d : normal level of serum GLDH activities^E 4U/L

(1).

TD가

TD가

2. 인지기능

TD가 (23.6 ± 3.2, 74.3 ± 20.1, 79.5 ± 19.0, 75.4 ± 15.2) TD가 (27.0 ± 1.7, 94.7 ± 13.8, 96.3 ± 16.4, 93.1 ± 12.0) (p<0.0001, 2).

3. Dopamine 농도와 Glutamate Dehydrogenase 활성도

TD가 (23.57 ± 5.17pg/ml) TD가 (22.60 ± 5.70 pg/ml) (3). TD가 (3.33 ± 5.11U/L) TD가 (4.82 ± 5.11U/L)

Table 4. Correlation coefficients(g) among variables in schizophrenia with tardive dyskinesia

	MMSE - K	TIQ	VIQ	PIQ	DA	GLDH	Age	Edu	Onset	Duration	Drug
TIQ	0.552										
VIQ	0.530	0.889									
PIQ	0.605	0.872	0.832								
DA	0.083	0.098	0.142	0.162							
GLDH	0.123	0.077	0.037	0.021	-0.296						
Age	-0.217	-0.333	-0.204	-0.218	-0.041	-0.125					
Edu	0.658	0.658	0.656	0.605	0.641	0.257	0.202				
Onset	0.256	-0.089	-0.079	-0.048	0.110	0.115	0.593	0.054			
Duration	-0.496	-0.496	-0.327	-0.178	-0.223	-0.149	-0.256	0.689	-0.424		
Drug	-0.615	-0.589	-0.358	-0.431	-0.084	-0.202	0.487	-0.597	-0.153	0.733	
Type	-0.087	-0.250	-0.168	-0.277	-0.089	0.131	0.122	-0.136	0.061	0.094	0.270

· MMSE - K=mini mental state examination korean version, TIQ=total intelligence quotient, VIQ=verbal intelligence quotient, PIQ=performance intelligence quotient, DA=dopamine, GLDH=glutamate dehydrogenase, Edu=education, Onset=onset of illness, Duration=duration of illness, Drug=duration of antipsychotics medication

Table 5. Correlation coefficients() among variables in schizophrenia without tardive dyskinesia

	MMSE - K	TIQ	VIQ	PIQ	DA	GLDH	Age	Edu	Onset	Duration	Drug
TIQ	0.614										
VIQ	0.569	0.951									
PIQ	0.487	0.791	0.568								
DA	-0.098	0.128	0.274	-0.203							
GLDH	0.190	0.081	0.053	0.152	0.106						
Age	-0.045	-0.002	0.087	-0.161	0.093	-0.024					
Edu	0.324	0.592	0.575	0.470	0.226	0.260	-0.073				
Onset	0.062	-0.129	-0.011	-0.326	0.142	-0.253	0.778	-0.278			
Duration	-0.161	0.190	0.146	0.248	-0.073	0.343	0.331	0.308	-0.335		
Drug	-0.073	-0.045	0.010	-0.112	-0.024	0.167	0.294	0.120	-0.031	0.487	
Type	-0.070	0.350	0.342	0.277	0.344	0.006	-0.005	0.223	-0.180	0.263	0.328

· MMSE - K=mini mental state examination korean version, TIQ=total intelligence quotient, VIQ=verbal intelligence quotient, PIQ=performance intelligence quotient, DA=dopamine, GLDH=glutamate dehydrogenase, Edu=education, Onset=onset of illness, Duration=duration of illness, Drug=duration of antipsychotics medication

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 TD 가 catecholamine
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 (buc - cal - lingual - masticatory dyskinesia) 가 , (p<0.005, p<0.0001, p<0.

0001, $p < 0.005$).

2) TD가 TD가
MMSE, TIQ, VIQ PIQ 가 (
 $p < 0.0001$).

3) TD가
GLDH

4) TD가
GLDH
(= -0.

496, = -0.615).

중심 단어 :

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