

주정의존에서 성기능장애와 말초신경염의 연관성

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Association of Sexual Disorders with Peripheral Neuropathy in Alcohol Dependence

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ABSTRACT

The alcoholic neuropathies developed in approximately 34% of chronic alcoholics and the sexual dysfunction had been experienced in 8 - 54% of male alcoholics(Schiavi 1990). The aims of this study were to identify the prevalence of subclinical polyneuropathies and sexual disorders in alcohol dependence, and to evaluate the association between them.

The nerve conduction velocity(NCV), electromyography(EMG), and pudendal somatosensory evoked potentials(SEPs) were tested for the male alcoholics(N=34) and controls(N=17 for NCV & EMG, N=25 for pudendal SEPs). The pudendal SEPs were measured by the following procedures, in which we stimulated the dorsal nerve of penis attached by the ring electrode(stimulus intensity, three times of threshold ; stimulus rate, 1 - 4.7Hz ; stimulus duration, 0.1 or 0.2msec), and recorded at the scalp(active electrode, 2cm behind Cz ; reference electrode, Fz).

The NCV and EMG detected signs of peripheral neuropathies in 79.4% of alcoholics. Among the alcoholics, 64.7% were abnormal on the pudendal SEPs. Among the alcoholics who revealed abnormality on EMG and NCV, 81.4% were abnormal on the pudendal SEPs, in which 51.9% were not responded. The P1 latencies of pudendal SEPs on neuropathic alcoholics were significantly delayed(p<0.05) than non-neuropathic alcoholics. There was a relative correlation between peripheral neuropathies and sexual disorders in the alcoholics.

The prevalence of subclinical neuropathies and sexual disorders seemed to be much higher in alcohol dependence than expectation, and these two problems were relatively correlated, and our results suggested that the peripheral polyneuropathies were one of the prerequisites of sexual disorders.

KEY WORDS : Alcohol dependence · Peripheral neuropathy · Sexual disorders · Nerve conduction velocity · Pudendal SEPs.

서 론

nicke - Korsakoff

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(051) 250 - 5070/240 - 6245,
(051) 241 - 5832/241 - 5069

(Nakada Knight 1984 ; Claus 1985 ; Schiavi 1990).
ethanol noradrenergic, serotonergic,
cholinergic, GABA (1984 ; Nestoros 1980 ; Le Marquand 1994).
(Victor Adams 1961 ;
Behse Buchthal 1977 ; Ballantyne 1980),
(Moon 1993 ; Speckens 1993).
가
(1986 ; 1996 ;
Blackstock 1972 ; Casey Le Quesne 1972 ; Behse

(Fahrner 1987 ; Schiavi 1990). Schiavi(1990)

(impotence)

8 54% , 25% (1997).

(pudendal somatosensory evoked potentials, puden -
dal SEPs) 가 (1985 ;
1987 ; 1990 ; Lemere Smith 1973 ; Ert -
ekin 1985 ; Padma - Nathan 1988).

가

대상 및 방법

1. 연구 대상

1994 11 1995 10
DSM - (American Psychiatric Ass -
ociation 1994)
34
43.7 ± 9.5 (27 70) 18.
2 ± 7.9 (6 30)
1
가 ,

benzodiazepine chlordiazepoxide
(nerve conduction velocity, NCV)
(electromyography, EMG)

17 , 40.9 ± 2.7 (27
56) 가 .
Pudendal SEPs
25
43.2 ± 8.6 (26 62)
가 .

2. 연구 방법

1) 신경전도검사 및 근전도검사

1 26 , Quantum 84(Ca -

dwel)

, , , ,
, , , ,
17
(needle)

가
(abductor pollicis brevis) ,
(extensor digiti brevis)
5 5 (abductor digiti quinti),
(extensor digiti brevis),
(muscle str -
etch reflex) H -
(submaximal stimulation)
(gastrocnemius medialis) 2 ,

5 ,

gain 20 μV/
div, hicut 2000Hz, locut 100Hz, sweep speed 1ms/div
, gain 5000 μV, hicut
10000Hz, locut 10Hz, sweep speed 5ms/div
gain 100 μV, hicut 10000Hz, locut 100
Hz, sweep speed 10ms/div

2) Pudendal SEPs

가
, 26 , Quantum84
(Cadwell) pudendal SEPs
1cm ,
3 , 1 4.7Hz , 0.1 0.2m
/sec . Cz 2cm
, reference electrode
(Fig. 1).

3. 통계분석

Excel 5.0(Microsoft) SPSS for
MS Windows Release 5.0 Student two - tailed t -
test, ² - test, Pearson's correlation, One - way ANOVA
Post - Hoc Scheffe's test

결 과

1. 신경전도검사의 비교

34 27 (79.

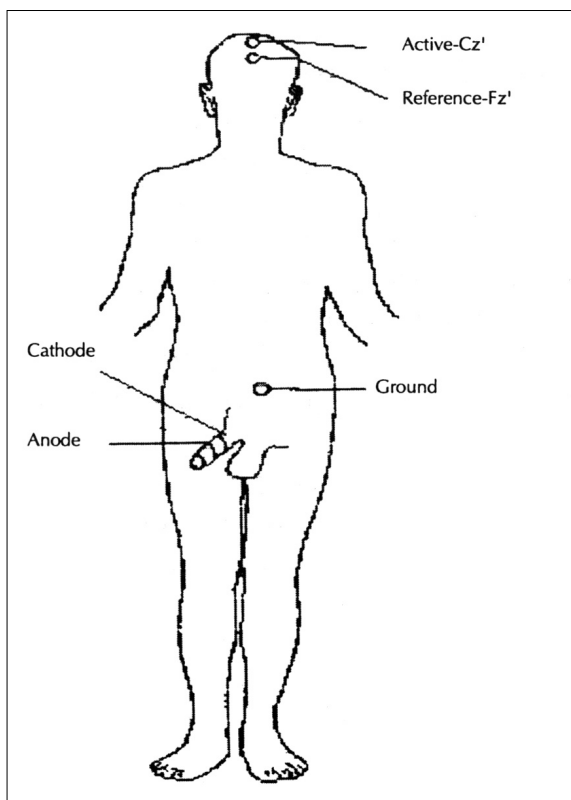


Fig. 1. Technique of stimulation and recording in pudendal SEPs (DeLisa et al 1987).

Table 1. Comparison of motor NCVs and sensory NCVs between controls and alcoholics

	Controls(n=17) Mean ± SD	Alcoholics(n=34) Mean ± SD	P-value*
Age	40.9 ± 12.7	43.7 ± 9.5	N.S.
Motor NCVs			
<i>Amplitudes (mV)</i>			
median nerve	14.81 ± 3.94	16.79 ± 4.75	N.S.
ulnar nerve	15.22 ± 3.55	13.77 ± 3.15	N.S.
peroneal nerve	7.49 ± 3.46	4.55 ± 2.30	<0.001
tibial nerve	13.46 ± 4.44	10.86 ± 9.13	N.S.
<i>Conduction velocity (m/sec)</i>			
median nerve	55.91 ± 3.02	52.49 ± 3.48	<0.001
ulnar nerve	57.08 ± 3.06	54.63 ± 4.72	N.S.
peroneal nerve	45.39 ± 3.12	42.05 ± 4.15	<0.01
tibial nerve	45.14 ± 2.95	43.08 ± 3.19	<0.05
<i>Distal latency (msec)</i>			
median nerve	3.31 ± 0.40	3.53 ± 0.78	N.S.
ulnar nerve	2.74 ± 0.06	2.73 ± 0.62	N.S.
peroneal nerve	4.27 ± 0.80	4.28 ± 0.93	N.S.
tibial nerve	5.67 ± 1.14	5.65 ± 1.14	N.S.
Sensory NCVs			
<i>Amplitudes (μV)</i>			
median nerve	43.75 ± 17.89	22.14 ± 11.03	<0.001
ulnar nerve	33.44 ± 11.13	20.85 ± 11.54	<0.001
sural nerve	17.27 ± 6.79	14.43 ± 6.71	N.S.
<i>Conduction velocity (m/sec)</i>			
median nerve	50.25 ± 8.47	45.38 ± 5.50	<0.05
ulnar nerve	46.42 ± 6.36	44.11 ± 6.71	N.S.
sural nerve	45.06 ± 5.98	43.80 ± 6.76	N.S.
<i>Distal latency (msec)</i>			
median nerve	2.72 ± 0.45	3.28 ± 0.56	<0.001
ulnar nerve	2.51 ± 0.38	3.00 ± 0.50	<0.001
sural nerve	2.55 ± 0.43	2.66 ± 0.60	N.S.

*Two-tailed t-test

4%)
 NCV (7.49 ± 3.46mV) (peroneal) (4.55 ± 2.30mV) (p<0.001), (median) (52.49 ± 3.48m/sec) (p<0.001) (42.05 ± 4.15m/sec) (p<0.01) (55.91 ± 3.02m/sec, 45.39 ± 3.12m/sec)
 가 (Table 1).

NCV (22.14 ± 11.03 μV) (p<0.001) (ulnar) (20.85 ± 11.54 μV) (p<0.001) (43.75 ± 17.89 μV, 33.44 ± 11.13 μV) (45.38 ± 5.50m/sec) (p<0.05) (50.25 ± 8.47m/sec) (3.28 ± 0.56 msec) (p<0.001), (3.0 ± 0.50msec) (p<0.001) (2.72 ± 0.45msec, 2.51 ± 0.38msec) (Table 1).

NCV EMG (7) (27) (44.53 ± 5.56m/sec) (p<0.05). (2.51 ± 0.38msec)

(peroneal) (4.42 ± 2.43mV, p<0.005 ; 8.96 ± 4.66mV, p<0.01) (51.87 ± 3.38m/sec, p<0.001 ; 41.54 ± 4.45m/sec, p<0.01 ; 42.51 ± 3.06m/sec, p<0.01) (43.75 ± 17.89mV) (27.49 ± 16.65mV ; 20.70 ± 8.88mV) (p<0.0001), (19.74 ± 8.96mV) (p<0.01). (50.25 ± 8.47m/sec) (44.53 ± 5.56m/sec) (p<0.05). (2.51 ± 0.38msec)

Table 2. Comparison of motor and sensory NCVs between controls and alcoholics with or without neuropathy

	Controls() (n=25) Mean ± SD	Alcoholics		P-value*	Scheffe's analysis
		without Neuropathy() (n=7) Mean ± SD	with Neuropathy() (n=27) Mean ± SD		
Age	40.9 ± 12.7	45.0 ± 7.0	43.3 ± 10.1	N.S.	
Motor NCVs					
<i>Amplitudes (mV)</i>					
median nerve	14.81 ± 3.94	17.46 ± 8.58	16.61 ± 3.38	N.S.	
ulnar nerve	15.22 ± 3.55	14.27 ± 1.94	13.64 ± 3.41	N.S.	
peroneal nerve	7.49 ± 3.46	5.02 ± 1.77	4.42 ± 2.43	<0.005	>
tibial nerve	13.46 ± 4.44	18.19 ± 16.90	8.96 ± 4.66	<0.01	>
<i>Conduction velocity (m/sec)</i>					
median nerve	55.91 ± 3.02	54.86 ± 2.96	51.87 ± 3.38	<0.001	>
ulnar nerve	57.08 ± 3.06	56.57 ± 1.99	54.12 ± 5.11	N.S.	
peroneal nerve	45.39 ± 3.12	44.03 ± 1.73	41.54 ± 4.45	<0.01	>
tibial nerve	45.14 ± 2.95	45.24 ± 2.87	42.51 ± 3.06	<0.01	>
<i>Distal latency (msec)</i>					
median nerve	3.31 ± 0.40	3.15 ± 0.40	3.63 ± 0.82	N.S.	
ulnar nerve	2.74 ± 0.60	2.37 ± 0.32	2.82 ± 0.65	N.S.	
peroneal nerve	4.27 ± 0.80	3.65 ± 0.42	4.44 ± 0.97	N.S.	
tibial nerve	5.67 ± 1.14	5.37 ± 0.87	5.72 ± 1.21	N.S.	
Sensory NCVs					
<i>Amplitudes (µV)</i>					
median nerve	43.75 ± 17.89	27.49 ± 16.65	20.70 ± 8.88	<0.0001	> ,
ulnar nerve	33.44 ± 11.13	24.98 ± 18.73	19.74 ± 8.96	<0.01	>
sural nerve	17.27 ± 6.79	17.77 ± 7.53	12.55 ± 6.66	N.S.	
<i>Conduction velocity (m/sec)</i>					
median nerve	50.25 ± 8.47	48.53 ± 4.21	44.53 ± 5.56	<0.05	>
ulnar nerve	46.42 ± 6.36	48.00 ± 6.22	43.07 ± 6.56	N.S.	
sural nerve	45.06 ± 5.98	46.34 ± 5.91	42.86 ± 6.95	N.S.	
<i>Distal latency (msec)</i>					
median nerve	2.72 ± 0.45	3.15 ± 0.43	3.31 ± 0.59	N.S.	
ulnar nerve	2.51 ± 0.38	2.66 ± 0.41	3.09 ± 0.49	<0.001	>
sural nerve	2.55 ± 0.43	2.47 ± 0.53	2.73 ± 0.62	N.S.	

*One-way ANOVA

(3.09 ± 0.49msec) (p<0.001). 가 1 49.77 ± 3.93m/ sec , 7 1 (14.3%) 27 7 (25.9%), 6 (22.2%), 14 (51.9%) (p<0.05). 2. Pudental SEPs의 비교 Table 3 . P1 la - pudental SEPs tency , 25 35.17 ± 2.77msec , 7 1 (14.3%) 27 7 (25.9%), 6 (22.2%), 14 (51.9%) (p<0.05). 3. 신경전도검사와 pudental SEPs의 상관성 Pudental SEPs 2 S.D. 가 34 21 (61.8%) 21 (95.5%) N1 latency , 25 23 , .

Table 3. Comparison of pudendal SEPs between controls and alcoholics

	Controls() (n=25)	Alcoholics		P-value	Scheffe's analysis
		without Neuropathy() (n=7)	with Neuropathy() (n=27)		
<i>P1 Latency (msec)</i>					
Mean ± S.D.	39.17 ± 2.77	41.16 ± 4.00	48.09 ± 10.72	<0.001*	>
Reduced	0(0.0%)	0(0.0%)	0(0.0%)] <0.05**	
Normal	25(100.0%)	6(85.7%)	7(25.9%)		
Delayed	0(0.0%)	1(14.3%)	6(22.2%)		
No response	0(0.0%)	0(0.0%)	14(51.9%)		
<i>N1 Latency (msec)</i>					
Mean ± S.D.	49.77 ± 3.93	52.59 ± 4.26	59.57 ± 10.77	N.S.*	
Reduced	1(4.0%)	0(0.0%)	0(0.0%)] <0.05**	
Normal	23(92.0%)	6(85.7%)	7(25.9%)		
Delayed	1(4.0%)	1(14.5%)	6(22.2%)		
No response	0(0.0%)	0(0.0%)	14(51.9%)		

*One-way ANOVA ** 2-test

Table 4. Comparison of motor and sensory NCVs between alcoholics with and without sexual disorders

	without Sexual Disorders (n=12)	with Sexual Disorders (n=22)	P-value*
	Mean ± SD	Mean ± SD	
Age	44.46 ± 6.60	42.95 ± 10.82	N.S.
Motor NCVs			
<i>Amplitudes (mV)</i>			
median nerve	16.96 ± 7.03	16.70 ± 3.08	N.S.
ulnar nerve	14.04 ± 2.67	13.62 ± 3.43	N.S.
peroneal nerve	5.28 ± 2.10	4.15 ± 2.35	N.S.
tibial nerve	14.93 ± 13.82	8.67 ± 4.03	N.S.
<i>Conduction velocity (m/sec)</i>			
median nerve	53.38 ± 2.77	52.00 ± 3.78	N.S.
ulnar nerve	55.54 ± 2.78	54.13 ± 5.50	N.S.
peroneal nerve	42.91 ± 2.89	41.59 ± 4.69	N.S.
tibial nerve	43.95 ± 2.79	42.60 ± 3.34	N.S.
<i>Distal latency (msec)</i>			
median nerve	3.35 ± 0.45	3.63 ± 0.90	N.S.
ulnar nerve	2.66 ± 0.61	2.76 ± 0.64	N.S.
peroneal nerve	3.91 ± 0.72	4.48 ± 0.99	N.S.
tibial nerve	5.51 ± 1.00	5.72 ± 1.23	N.S.
Sensory NCVs			
<i>Amplitudes (µV)</i>			
median nerve	26.23 ± 13.69	19.80 ± 8.70	N.S.
ulnar nerve	25.55 ± 15.29	18.16 ± 7.99	N.S.
sural nerve	18.03 ± 6.93	11.36 ± 4.88	<0.05
<i>Conduction velocity (m/sec)</i>			
median nerve	46.03 ± 5.68	45.01 ± 5.50	N.S.
ulnar nerve	45.81 ± 6.46	43.14 ± 6.82	N.S.
sural nerve	43.72 ± 3.99	43.86 ± 8.62	N.S.
<i>Distal latency (msec)</i>			
median nerve	3.28 ± 0.43	3.28 ± 0.63	N.S.
ulnar nerve	2.89 ± 0.48	3.06 ± 0.51	N.S.
sural nerve	2.69 ± 0.54	2.63 ± 0.67	N.S.

*Two-tailed t-test

Table 5. Correlation among variables of sexual disorders and peripheral neuropathy in alcohol dependence

	P1	N1
P1	1	.92**
N1	.92**	1
Age	-.11	-.08
<i>Amplitude</i>		
median motor nerve	-.12	-.06
ulnar motor nerve	-.37	-.31
peroneal nerve	.24	.12
tibial nerve	-.05	-.10
median sensory nerve	-.13	-.28
ulnar sensory nerve	-.21	-.30
sural nerve	-.36	-.35
<i>Conduction velocity</i>		
median motor nerve	.07	-.09
ulnar motor nerve	.49*	.32
peroneal nerve	.17	.07
tibial nerve	-.17	-.18
median sensory nerve	.18	.17
ulnar sensory nerve	.00	-.06
sural nerve	.21	.09
<i>Distal latency</i>		
median motor nerve	-.01	.01
ulnar motor nerve	.04	.02
peroneal nerve	.38	.37
tibial nerve	-.14	-.03
median sensory nerve	-.05	.02
ulnar sensory nerve	.00	.02
sural nerve	.03	.12

. These data represent Pearson's correlation coefficients (g)
*p<0.05 **p<0.001

12 6 (50.0%)
 (p<0.05). NCV
 가
 (11.36 ± 4.88mV)(p<0.05) (18.
 03 ± 6.93mV) (p<0.05) (Table 4).
 pudental SEPs P1 N1
 latency (Table 5).
 P1(= -0.37) N1(= -0.
 31) P1
 (= -0.36) N1(= -0.35), N1 (= -0.30)
 P1(=0.49)
 (p<0.05), N1(=0.32)
 P1(=0.38), N1(=0.37)

고 찰

가
 (Blackstock 1972 ;
 Behse Buchthal 1977 ; Ballantyne 1980). Casey Le
 Quesne(1972) 16 NCV
 가
 , Ballantyne (1980)
 가
 (1986)
 Wallerian
 (1985)
 235
 illain - Barre , Gu -
 7%, 10.2% 23.5%, 15.
 가 79.2% . Behse Bucht -
 hal(1977) 37
 가 60%
 50%
 B

가
 (redox state) (Van Thiel
 Lester 1976). Van Thiel Lester(1976)
 - , FSF, LH, E2, testosterone
 . Cornely (1984)
 testosterone 가 , gonadotropin
 70% ,
 (1987)
 testosterone 가 3.0ng/ml 가 9.7%
 , testosterone
 가 . Kosch (1988)
 1180 34% 가
 12 41.7%가
 16% 가 (Blackstock 1972 ; Slag 1983).
 Fagan (1988a) DSM -
 68 (30.5%) axis / 가
 (dual diagnosis) 가 . Fa -
 gan (1988b)
 Michigan Alcoholism Screening Test
 29% 42
 6 ,
 (1990) . Schiavi
 8 54%
 pudental SEPs
 가 (1985 ; 1987 ; Lemere
 Smith 1973 ; Haldeman 1982 ; Ertekin 1985 ; Pa -
 dman - Nathan 1988), (1987)
 111 pudental SEPs
 30.6% pudental SEPs

Pudendal SEPs 14 , 7

, 61.8%

(7) 14.3% P1 N1

(27) 22.2%가

51.9%

Pudendal SEPs P1 N1 latency

P1(= -0.37) N1(= -0.31)

(= -0.36) N1(= -0.35), N1(= -0.30)

P1(=0.49) (p<0.05)

, N1(=0.32)

P1(=0.38), N1(=0.37)

가

결론

가

79.4%

가

61.8%

34

Pudendal SEPs 14

, 7 , 61.8%

(7) 14.

3% P1 N1

22.2%가 , 51.9%

Pudendal SEPs P1 N1 latency

가

가

중심 단어 :

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