

수면이득이 있는 파킨슨병 환자의 임상특징 및 수면다원검사에 대한 연구

A Clinical and Polysomnographic Study of Parkinson's Disease Patients with Sleep Benefit

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ABSTRACT

Objectives: Parkinson's disease (PD) patients may experience fluent mobility upon awakening from a night's sleep, which is called sleep benefit (SB). Although SB is a phenomenon closely associated with sleep, sleep features of PD are not well characterized. The objectives of this study were, first, to investigate if there are any clinical characteristic features between patients with SB and without SB (NSB), and second, to examine if SB patients are associated with any specific sleep variables compared with NSB patients.

Methods: Thirty - three PD patients (14 men and 19 women) participated in this study. All subjects were interviewed to examine whether or not they had SB and overnight polysomnography was performed at the sleep center. Various clinical variables were collected through medical record review.

Results: The 331 PD patients were divided into 16 SB group (48.5%) and 17 NSB group (51.5%). SB patients were younger ($p<0.02$), had higher sleep efficiency ($p<0.05$), and showed shortened sleep latency ($p<0.02$) as compared with NSB patients. However, no difference was found between SB and NSB with respect to gender, duration or stage of PD, antiparkinsonian medications prescribed, and predominant motor symptoms. SB did not clearly relate to a specific sleep stage and other sleep variables except sleep efficiency and sleep latency. Although primary snoring was more prevalent in SB patients ($p<0.05$), other sleep disorders were seen with equal frequency in SB and NSB groups.

Conclusion: Our results suggest that good sleep efficiency, shortened sleep latency, and age may have an effect on morning motor function (i.e., SB) in Parkinson's disease. *Sleep Medicine and Psychophysiology 2000 ; 7(2) : 102-108*

Key words: Parkinson's disease · Sleep benefits · Polysomnography.

<p>서 론</p> <p>Marsden(1) (sleep benefit, SB) 가 (mobility)</p>	<p>10 20% 55%</p> <p>(1 - 4).</p> <p>SB (5), 가 . (1,6), (6), 가</p>	<p>SB</p> <p>가 가 가 가 가 (7) (2), (8), (9) (10)</p>
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Table 1. Characteristics of subjects with/without sleep benefit

		Subjects with sleep benefit (N = 16)	Subjects without sleep benefit (N = 17)
Gender [†] male/female		6/10	8/9
Age (year) ^{††}		58.4 ± 5.5*	63.5 ± 5.9
Symptom duration (month) ^{††}		.7 ± 35.7	79.4 ± 60.7
Treatment duration (month) ^{††}		36.8 ± 31.1	42.6 ± 30.7
Daily levodopa dosage (mg/day) ^{††}		376.6 ± 326.4	632.4 ± 491.9
UPDRS ^{d)} score			
Tremor [‡]	Grade 1 (TS ^{b)} = 0)	7	7
	Grade 2 (1 TS 3)	4	9
	Grade 3 (TS 4)	5	1
Rigidity [‡]	Grade 1 (RS ^{c)} 1)	7	10
	Grade 2 (2 RS 3)	2	5
	Grade 3 (RS 4)	4	2
Bradykinesia [‡]	Grade 1 (BS ^{d)} 3)	4	8
	Grade 2 (4 BS 7)	4	6
	Grade 3 (BS 8)	6	2
Hoehn & Yahr stage ^{††}		2.4 ± 0.9	2.8 ± 0.9

† : by chi-square test, †† : by Student t-test
 Values indicate subjects' numbers or Mean ± SD
 a) : Unified Parkinson's Disease Rating Scale
 c) : subject's total rigidity score

‡ : by Fisher's exact test, * : p<0.02
 b) : subject's total tremor score
 d) : subject's total bradykinesia score

SAS window version 6.12

가 (1).

결 과

1. SB 여부에 따른 분류

33 16 (48.5% ; 6, 10) SB
 , 6 가 , 11
 17 (51.5% ; 8, 9) NSB

61.0±6.0 (50
 74). SB 58.4±5.5 , NSB
 63.5±5.9 NSB 가
 (p<0.02). SB 129.4±80.3 ()
 30 240).
 가 .

2. 파킨슨병과 관련되는 변인들의 비교

SB 54.7 ± 35.7 ,
 NSB 79.4 ± 60.7
 가 . SB 36.8 ± 31.1 , NSB
 42.6 ± 30.7 가
 . UPDRS Hoehn & Yahr SB
 가 . (levodopa)

3. 수면다원검사 소견

1) 수면다원검사 변인들의 비교

(16,17)
 ,
 , 1 가, (3, 4)
 , (arousal index awakening
 index)가 가
 SB NSB
 , 가 2
 가 ,
 2 - way ANOVA stra -
 tified analysis
 (SB 79.0 ±
 8.5% vs NSB 70.0 ± 14.9%, p<0.05) (SB
 14.0 ± 16.4 vs NSB 30.6 ± 22.0 , p<0.02)

2) 수면장애 비교

가 3
 가
 (p<0.05).

Table 2. Polysomnographic data of subjects with/without sleep benefit

	Subjects with sleep benefit (N = 16)	Subjects without sleep benefit (N = 17)
Total sleep time (min)	406.4 ± 66.6	366.4 ± 87.9
Total wake time (min)	94.0 ± 45.4	123.7 ± 74.1
Sleep efficiency (%)	79.0 ± 8.5*	70.0 ± 14.9
Sleep stage		
Stage 1 (%)	12.6 ± 3.9	15.4 ± 9.8
Stage 2 (%)	51.5 ± 11.5	49.6 ± 11.6
Stage 3 (%)	9.1 ± 4.1	10.0 ± 4.9
Stage 4 (%)	9.2 ± 6.8	7.4 ± 6.9
Slow wave sleep (%)	18.3 ± 9.0	17.4 ± 10.3
REM sleep (%)	16.1 ± 8.2	17.1 ± 9.4
Sleep latency (min)	14.0 ± 16.4**	30.6 ± 22.0
REM latency (min)	172.3 ± 124.5	156.0 ± 61.7
Slow wave sleep latency (min)	31.7 ± 34.2	62.4 ± 80.9
Arousal index	5.2 ± 1.9	6.1 ± 3.0
Awakening index	4.4 ± 1.2	4.5 ± 2.9
Awakening index 2min	2.4 ± 0.9	2.7 ± 2.3
RDI	4.5 ± 7.8	10.5 ± 23.9
Lowest SaO ₂ (%)	88.4 ± 4.7	88.8 ± 4.1
PLMI	13.7 ± 25.9	12.5 ± 23.2

by Student t-test * : p<0.05 *** : p<0.02

All values indicate Mean ± SD

REM : rapid eye movement

RDI : respiratory disturbance index

SaO₂ : arterial oxygen saturation

PLMI : periodic limb movement index

고찰

SB NSB

33 16 (48.5%) SB가

SB Factor

(2) 46.3%, Merello (3) 55%, Tanberg (4) 가

42.2% SB가

가 48.5%

SB

Merello (3) 가

가

SB가

129.4 ± 80.3 (30 240) , Comella (6) 30

3 , Bateman (18) 87

SB NSB 가

Table 3. Comparison of sleep disorders in subjects with/without sleep benefit

Sleep disorder	Subjects with sleep benefit (N = 16)	Subjects without sleep benefit (N = 17)	Total (N = 33)
Obstructive sleep apnea [‡]	3 (18.8%)	6 (35.3%)	9 (27.3%)
Primary snoring [†]	11 (68.8%)*	5 (29.4%)	16 (48.5%)
PLMD [†]	10 (62.5%)	7 (41.2%)	17 (51.5%)
RBD [†]	10 (62.5%)	12 (70.6%)	22 (66.7%)
Bruxism [‡]	0 (0%)	1 (5.9%)	1 (3.0%)
Alpha-intrusion [‡]	3 (18.8%)	4 (23.5%)	7 (21.2%)
Insomnia [†]	8 (50.0%)	11 (64.7%)	19 (57.6%)
RLS [‡]	5 (31.3%)	3 (17.7%)	8 (24.2%)
Nightmare [‡]	7 (43.8%)	3 (17.7%)	10 (30.3%)
Night terror [‡]	1 (6.3%)	0 (0%)	1 (3.0%)
Esophageal reflux [‡]	1 (6.3%)	0 (0%)	1 (3.0%)
Sleep hygiene (good) [†]	11 (68.8%)	7 (41.2%)	18 (54.6%)

† : by chi-square test, ‡ : by Fisher's exact test, * : p<0.05

All values indicate affected subjects' numbers (percentage)

PLMD : periodic limb movement disorder

RBD : REM sleep behavior disorder

RLS : restless legs syndrome

, Hoehn & Yahr 가

Co-

mella (6) SB 가

, Hoehn & Yahr 가

, Merello (3) SB

Factor (2)

가

가

Currie (11) SB

가

가 가

Ba-

teman (18) SB가 Hoehn & Yahr

가

, Tanberg (4) SB

(dyskinesia)

가

가

SB

, SB

(2,5,19,20). 10 20%가
 가, 40 60
 SB NSB (2).
 SB Comella (6)
 NSB SB NSB
 가 SB 가 Factor SB SB NSB
 (2) Merello (3) SB NSB
 SB 가
 가 Hogl (5) 가
 SB
 가
 Hogl (5)
 (14) (visual scoring) 가
 epoch 50%
 epoch (23). 가
 (raphe nucleus)
 (spectral (24), (lo-
 analysis) cus ceruleus)
 가 (25).
 가 , , ,
 , , ,
 가 (26).
 가 가
 가 가
 가 (21), 가
 (22).
 SB
 가 NSB
 SB
 가 SB
 , , ,
 SB 가가
 가 가 SB
 , , ,
 가 가
 SB 가?
 . Marsden(1)

48.5% SB가

SB가

SB NSB

SB NSB

가 SB

SB 가

SB 가

SB

요 약

목 적 :

방 법 : 33 (14, 19)

결 과 : 가 16 (48.5%),
가 17 (51.5%)
($p < 0.02$),
($p < 0.05$), 가 ($p < 0.02$).

가

결 론 :

중심 단어 :

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