Therapeutic Outcomes and Prognostic Factors in Guillain-Barre Syndrome Treated with Intravenous Immunoglobulin

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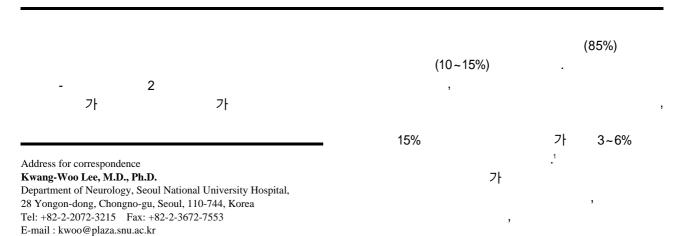
Background: There were several studies comparing prognostic factors in Guillain-Barre syndrome treated with intravenous immunoglobulin and plasmapheresis. However, there were controversies in what were significant factors and there were few studies so far comparing the therapeutic outcomes in patients treated with immunoglobulin. This study was aimed to determine the prognostic factors which affected the therapeutic outcome of Guillain-Barre syndrome treated with intravenous immunoglobulin.

Method: We retrospectively reviewed the medical records of patients with Guillain-Barre syndrome admitted to our hospital between January 1999 and March 2004. All patients were treated with intravenous immunoglobulin. Outcome and prognosis were followed up after four weeks using the overall disability sum score.

Results: Thirty-six patients were enrolled in this study. According to the clinical and electrophysiological findings, 17 patients were AIDP, 10 were axonal forms, two were mixed and seven had electrophysiologically no evidence of abnormalities. At a follow-up of four weeks, disabilities at the nadir (p<0.001) and admission (P<0.012), initial manifestations of bulbar symptom (P<0.024) and electrodiagnostic features (P<0.013) were significantly correlated with outcome in patients treated with intravenous immunoglobulin. But only disabilities at the nadir (P<0.033) and electrodiagnostic features (P<0.018) were significant in the multivariate logistic regression analysis.

Conclusion: Among the patient treated with intravenous immunoglobulin, the outcomes were significantly different according to the neurological status at the nadir. Therefore early diagnosis, administration of intravenous immunoglobulin and preventing complications during acute stages are essential to minimize neurological deficit and shorten the periods of recovery.

Key Words: Guillain-Barre syndrome, Intravenous immunoglobulin, Prognostic factors



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                                                     3.
                                                                                        (p<0.05)
                       가
                                                                                  Chi-square
가
                                                   Fisher's exact test,
                                                                                           Student
                                                   t - test
                                                      (multivariate logistic regression analysis)
                                                                                        0.05
 1.
                                                         36
                                                                   가
                         1999 1
                                      2004 5
                                                                  45.5 (16~84)
                                                                                          가 24 ,
                                                         12
                                                                           2:1
                       2
                                                                                             17,
                                                                           2,
                                                                10 ,
                                                             ) 가 7
                                                                                              12
                                                                                         (Table 1).
                  가
                                                                                   ODSS
                                                                                              가
                                                                                   score ODS score
                                                   1~3 (1 ) score 4~7 (12 ), score 8~12 (4 )
                                                                              score 1~3 (1 ), score
                0.4 gm/kg
                                                   4~7 (8 ), score 8~12 (8 )
                                       5
                                                           ODS score 1~3~(0~), score 4~7~(5~),
                                                   score 8~12 (5 )
                                                                                      score 1~3 (0
                                                     ), score 4~7 (4 ), score 8~12 (6 )
                                                              score 1~3 (4 ), score 4~7 (3 ), score
                                                                                      score 1~3 (2
                                                   8~12 (0 )
 2.
                                                     ), score 4~7 (3 ), score 8~12 (2 )
                                                                         score 4, 8
                                                     가
         가
                                       (clinical
                                                                                  (at nadir)
                     가
                                                   ODSS (p<0.001),
                                                                           ODSS (p=0.012),
outcome)
                   overall disability sum score
                                                                                (bulbar)
     4
                                                            (p=0.008),
                 , 0
(ODSS)
                                  ODSS
                                                        (P=0.024)
                                                                                         (p=0.027)
(favorable), 4
                     12
                                 ODSS
                                                                                         (p=0.007)
(unfavorable)
                                                                                (Table 4).
                                                                                ODSS (P<0.033)
                                                   NCS (P<0.018)
                                                                                  가
                     , bulbar
                                          GM1
                                       ODSS
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- 20 .5 가

. 50% 1994

Table 1. Demographic features in patients with Guillain-Barre syndrome

	Electrophysiological features				Total number
	AIDP	Axonal type	Normal	Mixed	
Age (years)*	41.3	50.6	32.5	43.1	
Sex					
Male	7	10	1	6	24
Female	3	7	1	1	12
Month*	7.6	5.8	5	7.1	
Preceding events					
URI	2	5	1	5	13
Diarrhea	7	5	1	0	13
Pain	0	3	0	2	5
Absent	1	4	0	0	5
Days to peak disability*	6.2	6.9	1.5	5.7	
Interval between onset					
and treatement(days)*	6.5	1.04	1.5	3.9	
Total number	10	17	2	7	

*mean

AIDP = acute inflammatory demyelinating polyneuropathy

Table 2. Initial symptoms of patients with Guillain-Barre syndrome

	Electrophysiological features				Total number
	AIDP	Axonal type	Normal	Mixed	
Initial symptoms					
Numbness/paresthesia	2	14	2	4	22
Limb weakness	10	17	1	6	34
Muscle pain	0	5	0	1	6
Back pain	0	4	0	0	4
Dizziness	0	1	0	0	1
Headache	0	1	0	0	1
Bulbar dysfunction	6	5	0	1	12
Blured vision	3	2	1	1	7
Ptosis	3	1	0	2	6
Ataxia	0	0	1	1	2
Facial palsy	2	2	0	3	7

AIDP = acute inflammatory demyelinating polyradiculoneuropathy

Table 3. IgG anti-GM1 antibodies in patients with Guillain-Barre syndrome

Electrophysiological features					
	AIDP	Axonal type	Normal	Mixed	
Anti-GM1 Ab					
positive	3	2	0	3	8
negative	4	7	2	0	13
Total number	7	9	2	3	21

GQ1b IgG 가 가 . 1997 GQ1b 가 가 GM1 가 4 (the node of Ranvier) 가 10,11 가 GM1 가 , 48 가 (methylprednisolone) 가 가 가 가 가 Campylobacter jejuni (glycolipid) (ganglioside) (molecular mimicry) (tolerance) , Campylobactor GM1 가 (CMV) jejuni GM1, GD1b, GD1a

Table 4. Final outcomes after 4 weeks (ODSS)

		Clinical outcome		
		Final ODSS (0-3)	Final ODSS (4-12)	p-value
Variables				
Age(years)*		45.63	45.83	0.976^{\dagger}
Sex				0.134^{\ddagger}
N	Male	18	6	
I	Female	6	6	
Month				0.471 †
Days to peak disab	ility*	1.79	9	0.007
Days to treatment*		5.29	12	0.027
Anti-GM1 Ab				0.17^{\ddagger}
I	Positive	6	5	
1	Negative	7	1	
Electrodiagnostic f	eatures			0.008^{\ddagger}
A	AIDP	11	6	
A	Axonal type	4	6	
1	Normal	2		
N	Mixed	7		
Bulbar symptom				0.024^{\ddagger}
I	Positive	5	7	
1	Negative	19	5	
ODSS at admission	1			0.012^{\ddagger}
ODSS at nadir				<0.001 ‡

^{*} mean; ODSS = overall disability sum score;

NCS = nerve conduction study; AIDP = acute inflammatory demyelinating polyneuropathy

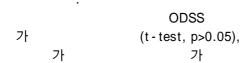
[†] student T- test; † Chi-square test

가 4 Campylobactor jejuni 12 - 16 GM₁ 4 가 6 4 가 가 가 (clinical outcome) 가 (clinical status at nadir) 가 가 가

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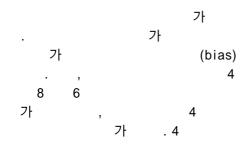
ODSS . ODSS Hughes functional grading scale 7 , , , ODSS, , ,



12 - 16



Campylobactor jejuni (CMAP sum score)



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