

= Abstract =

The Study of Intravenous-gammaglobulin Therapy in
Acute phase of Measles

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Purpose : The outbreaks of measles in infants and school children have been reported recently, but there are no specific treatment of these patients except symptomatic therapy. This study was performed to evaluate the effectiveness of intravenous gammaglobulin(IVGG) therapy in acute febrile phase of measles.

Methods : The 68 cases in measles were treated with single dose of IVGG(400 500 mg/kg), and 44 cases were treated with only symptomatic treatment during the periods of 14 months from Jan. 2000 to Feb. 2001. They were compared to duration of fever, rash, the levels of CRP and days of admission on both groups after treatment.

Results : The results obtained follows. The average of age was 7.9 ± 3.6 year old, and male to female was 1.0 : 1.6. The duration of fever after admission was 2.4 ± 1.2 days in treated group and 5.7 ± 2.4 days in control group. The period of disappearance of systemic erythematous maculopapular rash was 4.5 ± 1.3 days in treated group, and 6.9 ± 2.4 days in control group. The durations of admission day were also shown significantly shorter duration of period in treated group($P < 0.05$). The levels of CRP were no significant difference between two groups before treatment. However, treated group was significantly shown by improved within 5 days after IVGG therapy($P < 0.05$).

Conclusions : The single dose of IVGG(400 500 mg/kg) therapy is one of rapid and effective therapy for clinical symptoms and signs in acute high febrile phase of measles.

Key Words : Measles, Intravenous-gammaglobulin

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IgG IgM

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, C-reactive protein(CRP)

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(immunomodulation) 가

(400 500 mg/kg)

7.9 ± 3.6

1.0 : 1.6

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Table 1. The Distributions of Age and Sex in Both Groups

Age (year old)	Treated group		Control group	
	Male	Female	Male	Female
>1	1	0	0	0
1 <2	2	4	0	0
2 <3	1	3	0	0
3 <4	1	1	0	1
4 <5	6	10	2	2
5 <6	9	18	3	3
6 <7	2	3	0	3
7 <8	1	2	4	4
8 <9	0	0	1	1
9 <10	0	0	0	2
10 <11	1	1	2	4
>11	2	0	4	8
Total	26	42	16	28

1.

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44

(Table 1).

2.

(400 500 mg/kg)

48

2.4 ± 1.2 , 5.7 ± 48
 2.4 , 4.5 ± 1.3 , 6.9 ± 2.4 6 ()
 3.5 ± 1.3 , 4 , 2)
 7.8 ± 3.2 6 , 3 12 15
 (P<0.05, Table 2). 4 6 가
 CRP(<5 mg/L) , 103 12 15
 23.6 ± 12.8 mg/L
 5 가 6.2 ± 1.4 mg/L IgG가 ,
 (P<0.05), 25.3 ± 70% 78 IgM
 14.6 mg/L 5
 12.4 ± 4.2 mg/L
 (P<0.05, Table 3). RNA Paramyxoviridae
 9, 124.6 ± (Measles Virus)
 3,451.9/mm³, ESR 34.5 ± 12.3 mm/hr, (Kop-
 10, 124.5 ± 3,676.9/mm³, ESR lik's spot) 가 ,
 32.1 ± 13.7 mm/hr ()
 , GOT/GPT(0 45 U/L)가 102.5 ± 90%
 31.4/97.4 ± 23.7 U/L 가 ,
 12 (7 , 5) ,
 , BUN(10 20 (4 6)
 mg/dL) 10.2 ± 4.1 mg/dL, 10.4 ± 2 3
 3.9 mg/dL, Creatinine(0.7 1.4 mg/dL) 1993 1994
 0.72 ± 0.35 mg/dL, 0.77 ± 0.27 mg/dL 2).
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Table 2. The Mean Durations of Fever, Rash and Admission Days in Both Groups after Treatment

	Treated group	Control group	Others
Fever	2.4 ± 1.2 days	5.7 ± 2.4 days	P<0.05
Rash	4.5 ± 1.3 days	6.9 ± 2.4 days	P<0.05
Admission	3.5 ± 1.3 days	7.8 ± 3.2 days	P<0.05

Table 3. The Changes of C-reactive Protein(CRP) in Both Groups before and after Treatment

	Treated group		Control group		Others
	Before	After	Before	After	
CRP(mg/L)	23.6 ± 12.8	6.2 ± 1.4	25.3 ± 14.6	12.4 ± 4.2	P<0.05

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 (subacute sclerosing panencephalitis) , 가
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 50%
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 (400 500 mg/

kg) : 7.9 ± 3.6 ,
 , 48 1.0 : 1.6 가 ,
 2.4 ± 1.2 ,
 5.7 ± 2.4 ,
 4.5 ± 1.3 , 6.9 ± 2.4 ,
 , 48 3.5 ± 1.3 , 7.8 ±
 3.2
 , (P<
 4 0.05). CRP(<5 mg/L)
 7 가 5
 가 6.2 ± 1.4 mg/L
 12.4 ± 4.2 mg/L
 (P<0.05).
 3 48
 가

(400 500 mg/kg)

가 ,
 , 가
 (intravenous-gammaglobulin)
 : 2000 1 2001 2
 112
 68 (400 500
 mg/kg) , 44
 ,
 CRP

- 1) . (8). , 1999: 491-3.
- 2) . 1, 2 1994;5:69.
- 3) Feigin RD, Cherry JD. Textbook of Pediatric infectious disease. Philadelphia, WB saunders Co., 1987:1607-28.
- 4) Schneider-shaulies S, ter Merlen V. Pathogenic aspects of measles virus infections. Arch Viro 1999;15(Suppl):139-58.
- 5) Karp CL. Measles : immunosuppression, interleukin-12, and complement receptors. Immunol Rev 1999;168:91-101.
- 6) Fujinami RS, Sun X, Jenkin JC, Burns JB. Modulation of immune system function by measles virus infection : role of soluble factor and direct infection. J Virol 1998;72:9421-7.
- 7) Abramson O, Dagan R, Tal A, Sofer S. Severe complications of measles requiring intensive care in infants and young children. Arch Pediatr Adolesc Med 1995;149:1237-40.

- 8) Vitek CR, Aduddel M, Brinton MJ, Hoffman RE, Redd SC. Increased protections during a measles outbreak of children previously vaccinated with a second dose of measles-mumps-rubella vaccine. *Pediatr Infect Dis J* 1999;18:620-3.
 - 9) Andres JF, Jacobson RM, Poland GA, Jacobson SJ, Wollan PC. Secondary failure rates of measles vaccines: a metaanalysis of published studies. *Pediatr Infect Dis J* 1996;15:62-6.
 - 10) . Q & A. , . 2000:38-49.
 - 11) Anderson MS. Intravenous gammaglobulin for pediatric infectious diseases. *Pediatr Ann* 1999;28:499-506.
 - 12) Gonzales CA, Hill HR. The current status of intravenous-gammaglobulin use in neonates. *Pediatr Infect Dis* 1989;8:315-22.
 - 13) Nukolaeva IN, Kuznetsov VP, Barer GM, Parkhomenko lu G, Beliaev DL, Sinitsyna OV, Babauabts AA, Iushchuk ND. The use of leukiniferon in treating measles in adult patients. *Stomatologia(Mosk)* 1995;74:32-5.
 - 14) Sawyer LA. Antibodies for the prevention and treatment of viral diseases. *Antiviral Res* 2000;47:57-77.
 - 15) Keller MA, Stiehm ER. Passive immunity in prevention and treatment of infectious diseases. *Clin Microbiol Rev* 2000;13:602-14.
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