

2000 2001

= Abstract =

Study about Vaccination of Patients Diagnosed by Antimeasles Antibody in Measles Outbreak between 2000 and 2001

Kye Wool Kang, M.D., Hwa Jun Yoon, M.D., Seok Won Park, M.D.
Hwang Min Kim, M.D. and Jong Soo Kim, M.D.

Department of Pediatrics, Wonju College of Medicine, Yonsei university, Wonju, Korea

Purpose : Despite of the appropriate measles vaccination programs, epidemics occur every 2 3 years and especially occurred in large group in late of 2000 and early of 2001. To evaluate the effect of the vaccination, needs for revaccination and to determine the optimal age for revaccination, we examined measles specific IgG and IgM in measles patients and investigated different antibody appearance according to vaccination history.

Methods : Anti-measles antibodies were checked in sera of 201 patients(male : 117, female : 84) that are responsible for "Criteria for Disease Control" among 298 patients that are suspicious of measles including inpatients and outpatients in Wonju Christian Hospital from June in 2000 to June in 2001. They were checked by immunofluorescent assay. Then we classified them according to sex, month, distribution of age due to vaccination and appearance of measles antibody.

Results : The ratio of male and female was 1.4 : 1. The maximum incidence was 38 cases(18.9%) in May in 2001. Incidence was increased from November in 2000 to January in 2001 and decreased in February and March in 2001. Thereafter it was increased from April in 2001 again and decreased from June. There were 93 cases(46.3%) in vaccinated group and 108 cases(53.7%) in unvaccinated group. In the distribution according to age in vaccinated group, there were 54 cases(58.1%) in more than 10 years old, 15 cases(16.0%) between 7 and 10 years old, 12 cases(12.9%) between 15 months and 3 years old, 6 cases(6.5%) between 4 and 6 years old and 6 cases(6.5%) between 6 months and 14 months old. In the distribution according to age in unvaccinated group, there were 88 cases(81.5%) between 6 months and 14 months old, 9 cases(8.3%) between 15 months and 3 years old, 7 cases(6.5%) less than 6 months old, 3 cases(2.8%) more than 10 years old and 1 case(0.9%) between 7 and 10 years old. In the distribution of measles specific IgG and IgM, 78 cases

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Tel : 033)741-1287 Fax : 033-732-6229 E-mail : pdy1013@wonju.yonsei.ac.kr

(87.6%) were IgG(+), IgM(+) and 11 cases(12.4%) are IgG(+), IgM(-) in vaccinated group. In unvaccinated group, there were 69 cases(63.9%) of IgG(+), IgM(+) and 39 cases (36.1%) of IgG(-), IgM(+).

Conclusions : We thought that measles incidence was peaked between 6 months and 14 months old in unvaccinated group because of maximum decrement of transplacental maternal antibody and was peaked in more than 10 years old in vaccinated group because of maximum decrement of measles specific IgG. We think that measles revaccination as well as vaccination and especially optimal age for revaccination is very important to prevent measles successfully.

Key Words : Measles, Antimeasles antibody, Vaccination

1,000 1988 1,579 ,
1989 1990 2,000 3,000 ³⁾ 1994
7,833 가 ⁴⁾ 2000 가
, , , , .
, (Koplik 6
)
¹⁾ .
, ⁵⁾ 15
1963 가 37.4% , 9
가 80% 16 6
가 27.6%, 6 35%
가 . ⁶⁾ , ⁷⁾
1967 15 가 42%, 53.7%
, 1971 , , 가
(MMR) 15
1965 37 59% .
35 ,
1985 15 가 가 62.4%
, 77%가 measles specific IgM
(primary vaccine
failure) ⁸⁾ .
1997 MMR
12 15 4 6 2 (, (IgG, IgM) ,
6) ²⁾ , , 가
1970 1980 4,000 6,000 .
가 1985

38 가 6
(Fig. 1).

2000 6 2001 6 13

2 .

201 6 3.5%, 6

14 46.7%, 15 3

10.4% 10 28.4% 6 14

가 가

44.3%,

53.7%,

2.0%

(Table 1).

48

immunofluorescent assay(IFA)

, IgG 가가 1: 10

, IgM 가

3 .

IgG, IgM

48

IgG, IgM

IgG(+), IgM(+) 69 63.9%.

, 10 12 30 (43.5%), 6

9 14 (20.1%), 13 15 13 (18.8%)

. IgG(-), IgM(+) 39 36.1%

, 6 9 15

(38.5%), 10 12 14 (35.9%), 13 15

5 (12.8%) (Table 2).

1 .

2000 7

1 , 8 6 , 9 2 , 10 1 , 11

20 , 12 30 , 2001 1 32 , 2 12

, 3 10 , 4 32 , 5 38 , 6

17 11 1 가 2 3

가 4 가 5

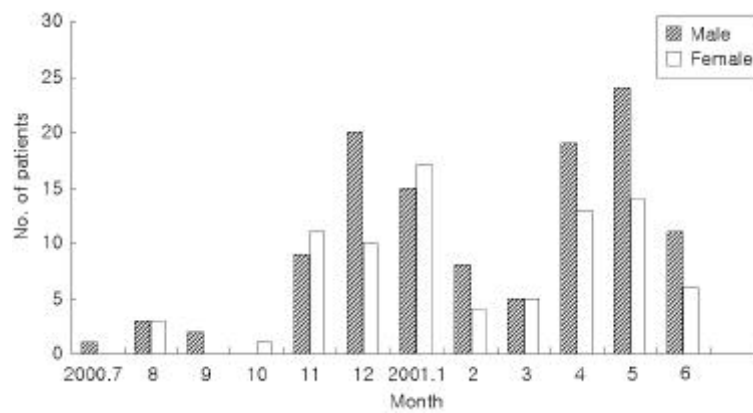


Fig. 1. Incidence distribution by month.

Table 1. Distribution of Subjects by Age and Vaccination History

	Unvaccinated	Vaccinated	Revaccinated	Total(%)
<6	7			7(3.5)
6 14	88	6		94(46.7)
15 3	9	12		21(10.4)
4 6		6		6(3.0)
7 10	1	14	1	16(8.0)
> 10	3	51	3	57(28.4)
Total(%)	108(53.7)	89(44.3)	4(2.0)	201(100.0)

Table 2. Measles Specific IgG and IgM Distribution by Age in Unvaccinated Group

	IgG/M (+ / +)	IgG/M (- / +)	Total (%)
<6	4	3	7(6.5)
6 9	14	15	29(26.8)
10 12	30	14	44(40.7)
13 15	13	5	18(16.7)
> 15	8	2	10(9.3)
Total(%)	69(63.9)	39(36.1)	108(100.0)

Table 3. Measles Specific IgG and IgM Distribution by Age in Vaccinated Group

	Vaccinated group		Revaccinated group	
	IgG/M (+ / +)	IgG/M (+ / -)	IgG/M (+ / +)	IgG/M (+ / -)
< 15	6			
15 3	10	2		
4 6	6			
7 10	11	3	1	
> 10	45	6	2	1
Total(%)	78(87.6)	11(12.4)	3(75.0)	1(25.0)

4 .
IgG, IgM
IgG(+), IgM(+) 87.6
%, IgG(+), IgM(-) 12.4% .
10 51 (57.4%), 7 10 가 14
(15.7%), 15 3 가 12 (13.5%), 15
4 6 가 6 (6.7%) (Table 3).

paramyxoviridae morbilli-
RNA
virus
34
Panum¹⁰⁾
11) .
가
가
가
가
12) .
(Edmonston strain) 1954 En-
ders Peebles¹³⁾
1963
14, 15) .

9 1
12
15
1976
1
15
1

4 : 71

1982 18 12 가 ^{28, 30)} ,
2 ¹⁶⁾ , 2 5%
1989 15 ,
4 6 (Advisory Committee on Immunization Practices : ACIP) 11 12 (American Academy of Pediatrics : AAP) 2 가
^{17, 18)} 1995 4 6 ³¹⁾ ,
11 12 AAP IgG가 5 6 79.2
ACIP가 ¹⁹⁾ . %, 11 66%, 86.1%
1963

가 , 5%
가 86.1%
가 가 9%가
가 .
²⁰⁾ 13.9% ²¹⁾ 17.2 . Reyes ²²⁾
% 가
2가

(seroconversion) 가 가
.
^{22, 23)} .
가
IgG
^{24, 25)} . Krugman IgM 가 IgM
²⁴⁾ 9 4
20%, 10 12%, 11 8%가 6
 , 6 7 IgG
28% 가 , 12 IgG, IgM
79%
²⁶⁾ .
6 , 가 3 6 14
81.5% 가 ,
²⁷⁾ . 가 가 가 6 14
 ,
10 54 (58.1%) 가
가가 , IgG 가가 10

가

4) 10
54 (58.1%), 7 10 가 15 (16.0%), 15 3
가 12 (12.9%), 4 6 6 14 6
(6.5%) .

1997 5) 6 14
88 (81.5%), 15 3 가 9 (8.3%), 6
7 (6.5%), 10 3 (2.8%), 7 10 가 1
(0.9%) .

6) IgG, IgM
IgG, IgM
가 78 (87.6%), IgG(+) IgM(-) 가 11
(12.4%) , IgG, IgM
가 69 (63.9%), IgG(-), IgM(+) 39 (36.1%) .

: 2 3
, 2000 2001 가 .

6 14 가 6 14
가 가
10
가 , IgG, IgM
가
IgG 가가 10 가

298 , criteria for disease
control 201
, , 가

Im-
munofluorescent Assay IgG
가가 1 : 10 ,
IgM .

1) 117 , 84
1.4 : 1 .

2) 5 38 (18.9%) 가
, 2000 11 2001 1
가 가 2 3 4
가 .

3) 93
(46.3%), 108 (53.7%)

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