

5 (1995- 1999)

\*, <sup>1)</sup>, <sup>2)</sup>  
가 <sup>1)</sup>,  
<sup>2)</sup>

Risk Factors of Cervical Cancer and Results of Cervix Cytology  
Screening in Chungnam Province, Korea, 1995- 1999

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= ABSTRACT =

The purpose of this study was to evaluate results of cervix cytology screening in the community and to determine the risk factors of cervical abnormality.

Branch of Daejeon city and Chungnam Province, The Planed Parenthood Federation of Korea had conducted cervical cancer screening of 146,848 married women in Chungnam province from 1995 to 1999. Cervical cancer screening was Pap smear using cytologic brush swab by trained nurse. Women who had abnormal finding of 1st Pap smear screening were followed re-examination and 2nd close examination.

Crude prevalence rate of cytologic abnormalities for 1st screening results was 0.63% in 1995- 1999(1995 0.68%, 1996 0.59%, 1997 0.70%, 1998 0.56%, 1999 0.62%). Crude prevalence rate of above class III for 1st screening results was 0.61%, but crude prevalence rate of above class III for the results of re-examination and 2nd close examination was 2.2/ 1000.

The false-positive rate of class III, IV and V for positive findings were defined above class II(cervicitis) results were 52.6%, 26.9% and 19.0%, respectively. And the false-positive rate of class III, IV and V for positive findings were defined above class III(dysplasia) results were 75.3%, 46.2% and 47.6%, respectively.

Major predictors of risk factors for abnormal results of cervix screening on the multiple logistic



SPSS WIN 7.5

(chi-square test), (multivariate logistic regression)

3.

가

1.

1995 1999  
7 9 23

가

95%

30-60

Papanicolaou(Pap)

가

1 1 . 2  
1 3 (Class III)

1 146,848 1  
, 1 3  
(Class III) 922 2

가

Papanicolaou

( 1).

146,848

922

2.

1. 1  
1  
1995- 1998 3 , 1999 26,848  
5 146,848

1 145,926  
(99.4%) , 26 (0.02%)

1 , 534 (0.36%) 3 , 339 (0.23%) 4 ,  
, 3 (Class III), 4 (Class IV), 5 (Class 22 (0.01%) 5 1

V) , 2 , 가 (p<0.01).

1.

Pap system	WHO system	CIN system	Bethesda system
1 (Class I)	Normal	Normal	Normal
2 (Class II)	Atypical		Infection
3 (Class III)	Dysplasia		SIL
	Mild	CIN 1	Low- grade SIL
	Moderate	CIN 2	High- grade SIL
3 (Class III)	Severe	CIN 3	High- grade SIL
	CIS	CIS	High- grade SIL
4 (Class IV)	CIS	CIS	High- grade SIL
5 (Class V)	ICC	ICC	Squamous cell carcinoma
5 (Class V)	Adenocarcinoma	Adenocarcinoma	Glandular cell abnormality
			Adenocarcinoma
			Nonepithelial malignant neoplasm

CIN, cervical intraepithelial neoplasia, HPV, human papilloma virus; CIS, carcinoma in situ, SIL, Squamous intraepithelial lesion, ICC, Invasive squamous carcinoma.

40 (30.0%) 50  
 60 (11.3%)  
 1995 0.68%, 1996 0.59%, (35.8%)  
 1997 0.70%, 1998 0.56%, 1999 0.62%  
 0.63% . 가 ( 3).  
 1 921  
 2 397 3. 1  
 (44.3%), 175 (19.6%), 86  
 (9.6%), 227 (25.2%), 1  
 12 (1.3%) . 2 3  
 (p<0.01). 가 30 74.8%, 40 57.5%, 50 54.7%  
 2 1995 47.8%, 30-50 , 4  
 1996 36.8%, 1997 33.5%, 1998 25.8%, 1999 60 50.5%  
 35.0% 5 36.2% ( 2). . 5 60  
 가  
 2. (p<0.01). 3  
 2 906 60.2%, 71.3%  
 가 4



4. 1

( )

: (%)

	26( 2.8)	3 534(58.0)	4 339(36.8)	5 22(2.4)	921(100.0)
( )**					
-39	4( 1.9)	157(74.8)	49(23.3)	-	210(22.9)
40-40	6( 2.2)	158(57.5)	106(38.5)	5( 1.8)	275(30.0)
50-59	9( 3.7)	180(54.7)	130(39.5)	10( 3.0)	329(35.9)
60- **	7( 6.8)	37(35.9)	52(50.5)	7( 6.8)	103(11.2)
	4( 3.3)	55(45.1)	57(46.7)	6( 4.9)	122(13.4)
	12( 2.9)	229(54.4)	167(39.7)	13( 3.1)	421(46.1)
	7( 4.3)	97(60.2)	55(34.2)	2( 1.2)	161(17.7)
-	3( 1.4)	149(71.3)	56(26.8)	1( 0.5)	209(22.9)
( )**					
- 19	8( 7.3)	39(35.5)	58(52.7)	5( 4.5)	110(12.0)
20-24	11( 2.0)	331(60.7)	188(34.5)	15( 2.8)	545(59.6)
25-	7( 2.7)	159(61.4)	91(35.1)	2( 0.8)	259(28.3)
( )**					
-2	8( 2.6)	205(65.9)	97(31.2)	1( 0.3)	311(33.9)
3-4	6( 1.6)	210(54.5)	158(41.0)	11( 2.9)	385(42.0)
5-	12( 5.4)	117(52.5)	82(37.1)	10( 4.5)	221(24.1)
( )					
0	10( 3.0)	189(57.1)	122(36.9)	10( 3.0)	331(36.0)
1	4( 1.5)	165(62.5)	89(33.7)	6( 2.3)	264(28.7)
2-	12( 3.7)	178(54.9)	128(39.5)	6( 1.9)	324(35.3)
**					
	24( 4.6)	24(54.4)	286(38.7)	12( 2.3)	525(57.0)
	2( 0.5)	2(62.6)	248(34.3)	10( 2.5)	396(43.0)

\*\*p < 0.01.

4.

2

18.1- 33.1%

, 60

2.9%

2

35.6- 51.9% 가

(p<0.05).

가 가  
 가 가  
 (p<0.01).  
 19 22.7% 가 23.5%  
 15.6%  
 10.9% 8.2%  
 가 (p<0.01)( 5).

5. 2 : (%)

	397(43.1)	175(19.0)	86( 9.3)	227(24.6)	12( 1.3)	25(2.7)	922(100.0)
( )*							
-39	109(51.9)	34(16.2)	22(10.5)	38(18.1)	3( 1.4)	4( 1.9)	210(22.4)
40-49	98(35.6)	53(19.3)	23( 8.4)	91(33.1)	1( 0.4)	9( 3.3)	275(30.0)
50-59	142(43.2)	70(21.0)	31( 9.4)	76(23.1)	5( 1.5)	6( 1.8)	329(25.8)
60-	45(43.3)	18(17.3)	10( 9.6)	22(21.2)	3( 2.9)	6( 5.8)	104(11.3)
	48(39.0)	21(17.1)	15(12.2)	33(26.8)	1( 0.8)	5( 4.1)	123(13.5)
	172(40.9)	88(20.9)	44(10.5)	103(24.5)	6( 1.4)	8( 1.9)	421(46.1)
	95(50.5)	34(21.1)	14( 8.7)	42(26.1)	1( 0.6)	4( 2.5)	161(17.6)
-	110(52.6)	31(14.8)	12( 5.7)	47(22.5)	3( 1.4)	6( 2.9)	209(22.9)
( )							
- 19	38(34.5)	25(22.7)	14(12.7)	25(22.7)	2( 1.8)	6( 5.5)	110(12.0)
20-24	233(42.7)	110(20.1)	49( 9.0)	133(24.4)	7( 1.5)	13( 2.4)	546(59.7)
25-	123(47.5)	40(15.4)	22( 8.5)	68(26.3)	2( 0.8)	4( 1.5)	259(28.3)
( )							
-2	145(46.6)	57(18.3)	29( 9.3)	71(22.8)	3( 1.0)	9( 2.7)	331(36.0)
3-4	154(39.9)	76(19.7)	40(10.4)	101(26.2)	7( 1.8)	5( 1.9)	386(42.0)
5-	98(44.3)	42(19.0)	16( 7.2)	53(24.0)	2( 0.9)	10( 3.1)	221(24.1)
( )**							
0	144(43.5)	63(19.0)	36(10.9)	76(23.0)	3( 0.9)	9( 2.7)	331(36.0)
1	117(44.3)	52(19.7)	25( 9.5)	62(23.5)	3( 1.1)	5( 1.9)	264(28.7)
2-	136(41.8)	60(18.5)	24( 7.4)	89(27.4)	6( 1.8)	10( 3.1)	325(35.3)
**							
	244(41.4)	82(15.6)	436( 8.2)	136(25.9)	5( 1.0)	16( 3.0)	526(57.0)
	153(38.6)	93(23.5)	436(10.9)	91(23.0)	7( 1.8)	9( 2.3)	396(43.0)

\* p < 0.05, \*\* p < 0.01.

8 5 (1995- 1999)

5.

50.6% 가 , 가 ( 6).  
 5.7%, 2.4%, 6. 1 2  
 가 40.6% 0.7% 1 2

6.

: (%)

	+					
	277(50.6)	31( 5.7)	13( 2.4)	22(40.6)	4( 0.7)	547(100.0)
( )*						
-39	63(53.4)	4( 3.4)	3( 3.1)	47(39.3)	1( 0.8)	118(21.6)
40-49	99(57.9)	3( 1.8)	4(40.7)	63(28.5)	2( 1.2)	171(31.3)
50-59	87(42.6)	22(10.8)	6(46.2)	88(42.1)	1( 0.5)	204(37.4)
60-	28(52.8)	2( 3.8)	-	23(43.3)	-	53( 9.7)
	34(41.0)	7( 8.4)	-	40(48.2)	2( 2.4)	83(15.3)
	127(50.2)	15( 5.9)	8( 3.2)	102(40.3)	1( 0.4)	253(46.6)
	48(46.2)	5( 4.8)	3( 2.9)	47(45.2)	1( 1.0)	104(19.2)
-	67(65.0)	3( 2.9)	2( 1.9)	31(30.1)	-	103(19.0)
( )**						
- 19	34(45.9)	5( 6.8)	1( 1.4)	33(44.6)	1( 1.4)	74(13.6)
20- 24	168(50.5)	23( 6.9)	7( 2.1)	133(39.9)	2( 0.6)	333(61.0)
25-	75(54.0)	3( 2.2)	5( 3.6)	55(39.6)	1( 0.7)	139(25.5)
( )						
- 2	93(52.5)	11( 6.2)	5( 2.8)	67(37.9)	1( 0.6)	177(32.4)
3-4	125(52.3)	8( 3.3)	3( 1.3)	102(42.7)	1( 0.2)	239(43.8)
5-	58(44.6)	12( 9.2)	5( 3.8)	53(40.8)	2( 1.5)	130(23.8)
( )						
0	98(51.6)	12( 6.3)	2( 1.1)	77(40.5)	1( 0.5)	190(34.7)
1	79(50.0)	8( 5.1)	5( 3.2)	65(41.1)	1( 0.6)	158(28.9)
2-	100(50.3)	11( 5.5)	6( 3.0)	80(40.2)	2( 1.0)	199(36.4)
**						
	158(52.5)	6( 2.0)	8( 2.7)	128(42.5)	1( 0.3)	301(55.0)
	119(48.4)	25(10.2)	5( 2.0)	94(38.2)	3( 1.2)	246(45.0)



146,323 (99.6%), 500 (0.34%) 8.  
 175 (0.12%),  
 86 (0.06%), 227 (0.15%),  
 12 (0.01%) 가

0.22% ( 7).

7. 1

40

가 158

30

가 0.54

1

가 142

가

가

가

,

가

1

가

가

가

2

( )

( 9).

44.0%,

68.0%

, 3

56.2%, 75.3%

4 26.9%, 46.2%

, 5

19.0%, 63.8%

( 8).

가 0.48

7. 1

2

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146,848(100.0)	146,323(99.6)	175(0.12)	86(0.06)	227(0.15)	12(0.01)	500(0.34)	325(0.22)
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1

8. 1

1

2

25

11 (44.0)

17 (68.0)

3

523

294 (56.2)

394 (75.3)

4

327

88 (26.9)

151 (46.2)

5

21

4 (19.0)

10 (47.6)

896

397 (44.3)

572 (63.8)

1

2

9.

					95%	(OR)
( )						
- 39	-	-	-	-		-
40 - 49	0.4550	0.2158	0.4433	0.0350	1.0324 - 2.4061	(1.58)
50 - 59	0.0635	0.2583	0.0604	0.8059	0.6422 - 1.7678	(1.07)
60 -	-0.1270	0.3370	0.1421	0.7062	0.4550 - 1.7049	(0.88)
	-	-	-	-		-
	-0.1029	0.2258	0.2077	0.6486	0.5796 - 1.4044	(0.90)
	-0.1868	0.2900	0.4150	0.5195	0.4699 - 1.4646	(0.83)
	-0.6242	0.3917	4.1158	0.0425	0.2931 - 0.9791	(0.54)
( )						
- 19	-	-	-	-		-
20 - 24	-0.4569	0.2551	3.2090	0.0732	0.3841 - 1.0439	(0.63)
25 -	-0.5654	0.2982	3.5942	0.0580	0.3167 - 1.0193	(0.57)
( )						
- 2	-	-	-	-		-
3 - 4	-0.0722	0.1895	0.1453	0.7031	0.6417 - 1.3488	(0.93)
5 -	-0.2986	0.2471	1.4608	0.2268	0.4571 - 1.2040	(0.74)
( )						
0	-	-	-	-		-
1	0.0205	0.1741	0.0139	0.9063	0.7266 - 1.4359	(1.02)
2-	0.1297	0.1668	0.6047	0.4368	0.8210 - 1.5789	(1.14)
	-	-	-	-		-
	0.3499	0.1416	6.1045	0.0135	1.0750 - 1.8728	(1.42)

OR: odds ratio.

30 가 가 ( 11).

가 , 가 2

3-4 1.09 , 2

1.10 ( 10).

1995- 1999 5

146,848 2

. 30 40 .

2.13 가 1 1995

가 가 0.68%, 1996 0.59%, 1997 0.70%, 1998

, 가 0.56%, 1999 0.62% 0.63%

10.

					95%	(OR)
( )						
- 39	-	-	-	-		-
40 - 49	0.3767	0.2234	2.8442	0.0917	0.9407 - 2.2582	(1.46)
50 - 59	-0.1474	0.2686	0.3011	0.5832	0.5097 - 1.4610	(0.58)
60 -	-0.2218	0.3501	0.4016	0.5263	0.4033 - 1.5909	(0.80)
	-	-	-	-		-
	-0.2958	0.2259	1.7149	0.1904	0.4778 - 1.1583	(0.74)
	-0.4902	0.2925	2.8087	0.0938	0.3453 - 1.0866	(0.62)
	-0.7373	0.3151	5.4758	0.0193	0.2580 - 0.8871	(0.48)
( )						
- 19	-	-	-	-		-
20 - 24	-0.2102	0.2496	0.7092	0.3997	0.4969 - 1.3218	(0.81)
25 -	-0.0908	0.2948	0.0949	0.7580	0.5124 - 1.6273	(0.91)
( )						
- 2	-	-	-	-		-
3 - 4	0.0820	0.1921	0.1823	0.6694	0.7449 - 1.5818	(1.09)
5 -	-0.0523	0.2532	0.0427	0.8364	0.5778 - 1.5589	(0.94)
( )						
0	-	-	-	-		-
1	-0.0451	0.1796	0.0630	0.8018	0.6723 - 1.3591	(0.96)
2-	0.0941	0.1704	0.3047	0.5809	0.7867 - 1.5343	(1.10)
	-	-	-	-		-
	-0.0008	0.1449	0.0000	0.9956	0.7522 - 1.3273	(1.00)

OR: odds ratio.

(1975) 30.1 ,  
 (1979) 16.2 , (1991) 13.8  
 2 1 2  
 가  
 1,000 2.2  
 0.63% 1,000  
 6.3 . 3  
 0.61%  
 1,000 6.1 . (1996) 35-49 가 2  
 1,000 6.5

11.

					95%	(OR)
( )						
- 39	-	-	-	-		-
40 - 49	0.7576	0.2476	9.3596	0.0022	1.3129 - 3.4661	(2.13)
50 - 59	0.1985	0.2988	0.4414	0.5065	0.6790 - 2.1907	(1.22)
60 -	0.1175	0.3884	0.0915	0.7623	0.5253 - 2.4079	(1.12)
	-	-	-	-		-
	-0.2202	0.2456	0.8042	0.3699	0.4958 - 1.2984	(0.80)
	-0.2124	0.3154	0.4538	0.5005	0.4358 - 1.5003	(0.81)
	-0.2341	0.3990	0.4770	0.4898	0.4072 - 1.5377	(0.79)
( )						
- 19	-	-	-	-		-
20 - 24	-0.0327	0.2750	0.0141	0.9054	0.5646 - 1.6590	(0.97)
25 -	0.0698	0.3232	0.0467	0.8289	0.5692 - 2.0204	(1.07)
( )						
- 2	-	-	-	-		-
3 - 4	0.0974	0.2089	0.2176	0.6409	0.7320 - 1.6599	(1.10)
5 -	0.1788	0.2752	0.4220	0.5159	0.6972 - 2.0508	(1.20)
( )						
0	-	-	-	-		-
1	0.0200	0.1984	0.0102	0.9197	0.6915 - 1.5052	(1.20)
2-	0.2735	0.1852	2.1824	0.1396	0.9145 - 1.8898	(1.31)
	-	-	-	-		-
	-0.1331	0.1585	0.7056	0.4009	0.6416 - 1.1942	(0.88)

OR: odds ratio.

가 (1993) 14.0% (1998)  
 12.1%, (1991) 18.8%

가  
 44.0%, 3 56.2%, 4 26.9%,  
 5 19.0%  
 68.0%, 3 75.3%, 4 46.2%, 5 47.6%  
 (1996) 3 (Gay, 1985; Eddy,  
 66.9%, 4 28.6%, 5 0% 1990).

가

(Brown

, 1984; Brinton, 1986; Miller, 1996)

가

가

(Jussawalla , 1971)

, 1

2

Brinton (1989)

, 1

2 가

Parzzini (1988)

가

가 가

가

, 1 2

(Weston

가

, 1999)

(HPV,

human papilloma virus)

가

가

(Zunzunegui , 1986)

2



9. 가 .  
1988; 31: 1228
10. 1988; 31(5): 627-632
11. 1992;  
15(2): 115- 122
12. 1975; 7(4): 219- 223
13. 1976; 19(4): 251-  
270.
14. 95- 35, , 1995
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