



**2000 12**



가

가

가

	.....	i
•		
1.	.....	1
2.	.....	4
•		
1. CMF	.....	5
2.	.....	8
3.	.....	10
4.	.....	13
•		
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1.	.....	23
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-	.....	57
	.....	65

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2000 10 19 1999 10 1  
 CMF regimen  
 stage 137  
 , BMI , 51  
 3000/mm<sup>3</sup>  
 47  
 (leukocyte nadir count)

Cox Proportional Hazards Model

BMI ,  
 가 .  
 가 가  
 3.5g/dL 3.5g/dL  
 0.145(95% CI: 0.042-0.499) . 가 27cm  
 27cm 0.698(95% CI: 0.266-1.828)

. BMI BMI 21 23.5  
 21 1.385(95% CI: 0.694-2.765), BMI 23.5 26  
 0.701(95% CI: 0.256- 1.915), BMI 26 0.727(95% CI: 0.244- 2.163)  
 BMI가 . 186- 242  
 139 2.224(95% CI:  
 0.553- 8.956) 140- 185 243- 346  
 가 .

가 .

, , 가

---

: , , , ,



•

# 1.

가  
 가  
 1983- 1987 LA , 가  
 , 1988- 1992 LA ( , 1999).  
 가 가  
 가  
 stage II stage I  
 . 1 3 가  
 CMF(cyclophosphamide, methotrexate, 5-fluorouracil)  
 CMFVP(CMF vincristine  
 prednisolone), CAF(cyclophosphamide, doxorubicin, 5-fluorouracil)  
 6 cycle ,  
 (Charles , 1990).

가 (Faulds , 1992),  
 ( , )  
 ( , 1993).

(colony - stimulating factors)가

(Lieschke Burgess, 1992).

가 , 가

가

가 ,

(Salk, 1962)

(Solomon, 1969).

(Pollock Duffy,

1990)

- 가

(Lambert Lambert, 1987).

(1991)

(Holahan Moos, 1985)

(Pollock, 1989).

가

가 , ,

가

가

2.

, ,  
.  
.  
, , , .  
, , , (leukocyte  
nadir count) .  
, Cox

## II.

### 1. CMF

가  
(Haskell, 1990). 가

(Hoagland, 1984).

가  
가 (Frei Canellos, 1980).  
(hematopoietic growth factor)

,  
가 , 가 1 1,000/mm<sup>3</sup>  
50%  
가 500/mm<sup>3</sup> 가  
가 , 가

(Bodey, 1986).

(Hoagland, 1984).

7- 14

21

가

가

가

( , 1993).

. 1969 Cooper

60

Cyclophosphamide, Methotrexate, 5-Fiuorouracil, Vincristine,

Prednisolone(CMFVP) 88%

가

Cooper regimen

가

Cyclophosphamide,

Methotrexate, 5-Fiuorouracil 3

CMF

Canellos

(Charles ,

1990).

estrogen

(ER)

6

CMF

ER

2

tamoxifen

가

ER

가

6

CMF

, 가

3가

estrogen

tamoxifen 가

tamoxifen

10mg 1 2

. tamoxifen

(Hoagland, 1984).

1977 Bonadonna

Milan study

CMF

1985

Bonadonna

CMF

10

가

가

. CMF

85%

5

77%

45%

(Bonadonna , 1977).

1976 Bonadonna

CMF

78%

(<4000/mm<sup>3</sup>)

2500/mm<sup>3</sup>

7%

CMF

가

. Lee

CMF

42%가

, 30%

(Lee, 1982).

(leucocyte nadir)

(Poikonen , 1999).

2.

, (cancer cachexia)  
(cancer cachexia)  
가  
. Eastern Cooperative Oncology Group 가  
(DeWys , 1980).  
, ,  
,  
,  
(Shane,  
1993)  
,  
가 가  
, , ,  
(Barbara, 1991). 가  
,  
가  
(Shils, 1979).



(weight loss)

(Moshe Murray, 1997).

. DeWys (1980)

가

가

가

가

(SFT)

(MAMC),

creatinine

transferrin, Retinol-binding protein 가

(Barbara, 1991).

(protein-energy malnutrition)

. BMI( ) recent weight/height<sup>2</sup>

(m)

(kg)

가

(Knapp, 1983).

가

(Faulk , 1974; Moshe Murray, 1997).

(Hoagland, 1984).

. B-cell T-cell lymphocyte

(Barbara, 1991).

(immunocompetence)

. Moshe Murray (1997)

. 가 (Kohlschutter Jehn, 1978).

### 3.

(Rowland Holland, 1989). 가 ,

, (Jeannie , 1991). ,

, , , (Jeannie , 1991).

Kobasa(1979, 1981)

(mediating factor) (hardiness) .

1979). (Kobasa, 1979).

(Kobasa, 1981).

(Pollock, 1984).

(Kobasa, 1981; Pollock, 1989).

(Kobasa, 1979) 3 가

(Dennis, 1987).

(Johnson Morse, 1990).

(Holahan, 1985). Laborde (1985) 가 가

가 .

가

(Kobasa , 1981).

( )

가

가 ( )

가 ( )

(Kobasa ,

1981).

AIDS-PCP(Pneumocystis carinii pneumonia) 5

Solomon (1987) , (n=11) (n=10)

. Kobasa

5

(passive compliant)

가

가

AIDS

가

Cohen Wills(1985) Inteleukin-6

Inteleukin-6가

가

. Kobasa (1981)

가

(mononucleosis)

(ego strength)

가

(Greenfield ,

1966). Levy (1990)

가

. Richardson (1990)

( $P < 0.001$ )

. Kerr(1986)

가

(1997)

가

#### 4.

, , (Thoits, 1986). Lewis  
Bloom(1978) 가 가 , ,

가 . Syme Berkman(1976)

. Sarason(1996)

가

가

(Cobb, 1971)

(Rabkin Struening, 1976; Thoits, 1982; Cohen Wills,

1985).

가

가

. Sarason(1996)

. Cassel

가 가

가

(Cassel, 1976).

가

(Dean Lin, 1977; Eaton, 1978; Lambert , 1989;

Northouse, 1980).

가

(Albrecht , 1994). Alameda,

Tecumseh, Durham

(

)

(Berkman Syme, 1979; House , 1982).

가

(Sherbourne Hays, 1990) 가

(Berkman Syme, 1979)

(Pearlin Johnson, 1977), 가

(Morgan, 1980).

(Blanchard , 1995).

(Pennam , 1986)

(Bloom, 1982).

가 (Jamison Wellisch, 1978) 가

, 가 ,

(Sinsheimer Holland, 1987).

Lindsey (1981) 가 가

Northouse(1980) (social network)

가 . Zemore Shepel(1989)

가 가 가

가 ,

가 . Spiegel (1989) (

, )

. Levy (1990)

natural killer-cell Baron

(1990) 가

가 가 . CMF

( 가 , , )

16%가

(Lee, 1983).



•

# 1.

1999 10 1 2000 10 19

stage stage 137

(adjuvant therapy) CMF

regimen 2 , (

4,000/mm<sup>3</sup> , 2,000/mm<sup>3</sup> , 100,000/mm<sup>3</sup> , 10g/dL

) . CMF 3 1

2 cyclophosphamide, methotrexate, 5-fluorouracil

2 4 1 cycle 6 cycle .

가

가

. 137

51 .

①

②

가 3,000/mm<sup>3</sup>

(nadir count)

## 2.

,  
 , ( 1).  
 , , ,  
 , , 가 , ,  
 , .

가.

	BMI(kg/m <sup>2</sup> )	(cm),	(g/dL)
. BMI			
WHO(1995)	18.5 , 18.5	21 , 21	23.5 ,
23.5 26 , 26		BMI 21	23.5
.		18.5	가
18.5			
3.2-5.2 g/dL가			
.	3.5 g/dL		(Burnett , 1993).

Pollock(1984)  
 (HRHS) (1989)가 . 14  
 , 13 , 13 40 ,  
 6 Likert 1 , 6 .

40 240 가

Pollock Kobasa , ,

32.1% . .41 .68

(Pollock , 1990). 5 (r= .30)

item-total correlation .25 . Pollock(1984)

= .86 .82, .84, .74

(HRHS) Cronbach = .86

.78, .82, .76 . 2

- .9 3 .8 .

(Quantile)

Sarason(1983) (SSQ) 가

(availability)

(satisfaction) . 27

6 likert

27

numbers score( )

satisfaction score( ) . (internal

reliability) Cronbach = .97, Cronbach =  
.94 .  
82% 72% . (criterion  
validity) SSQ  
가 (r=- 0.22 -0.43),  
Optimism Scale 0.34  
0.57 .  
가  
- . 19 2  
2 0.87 .  
(Quantile) .  
.  
WHO ( ) 가  
1000/mm<sup>3</sup> (Barbara, 1991)  
가 3,000/mm<sup>3</sup> .

1.

	3000/mm <sup>3</sup>	, 3000/mm <sup>3</sup>	
(/mm <sup>3</sup> )	1000	, 1000	2000 , 2000 3000
	3.5g/dL	, 3.5g/dL	
	27.0cm	, 27.0cm	
BMI(kg/m <sup>2</sup> )	21	, 21	23.5 , 23.5 26 , 26
( )	93	, 94- 109	, 110- 123 , 124- 175
	29	, 30- 35	, 36- 42 , 43- 70
	31	, 32- 37	, 38- 44 , 45- 59
	31	, 32- 36	, 37- 41 , 42- 68
( )	139	, 140- 185	, 186- 242 , 243- 346
	4.13	, 4.14- 4.76	, 4.77- 5.05 ,
	5.06- 5.85		
( )		, 1 , 2 , 3	
( )		, 1 , 2	

3.

,  
,  
, (potential confounder)  
95%  
, , ,  
<sup>2</sup> -test, (nadir count)  
ANOVA . Cox Proportional Hazards Model  
가 SAS ver. 6.12 .

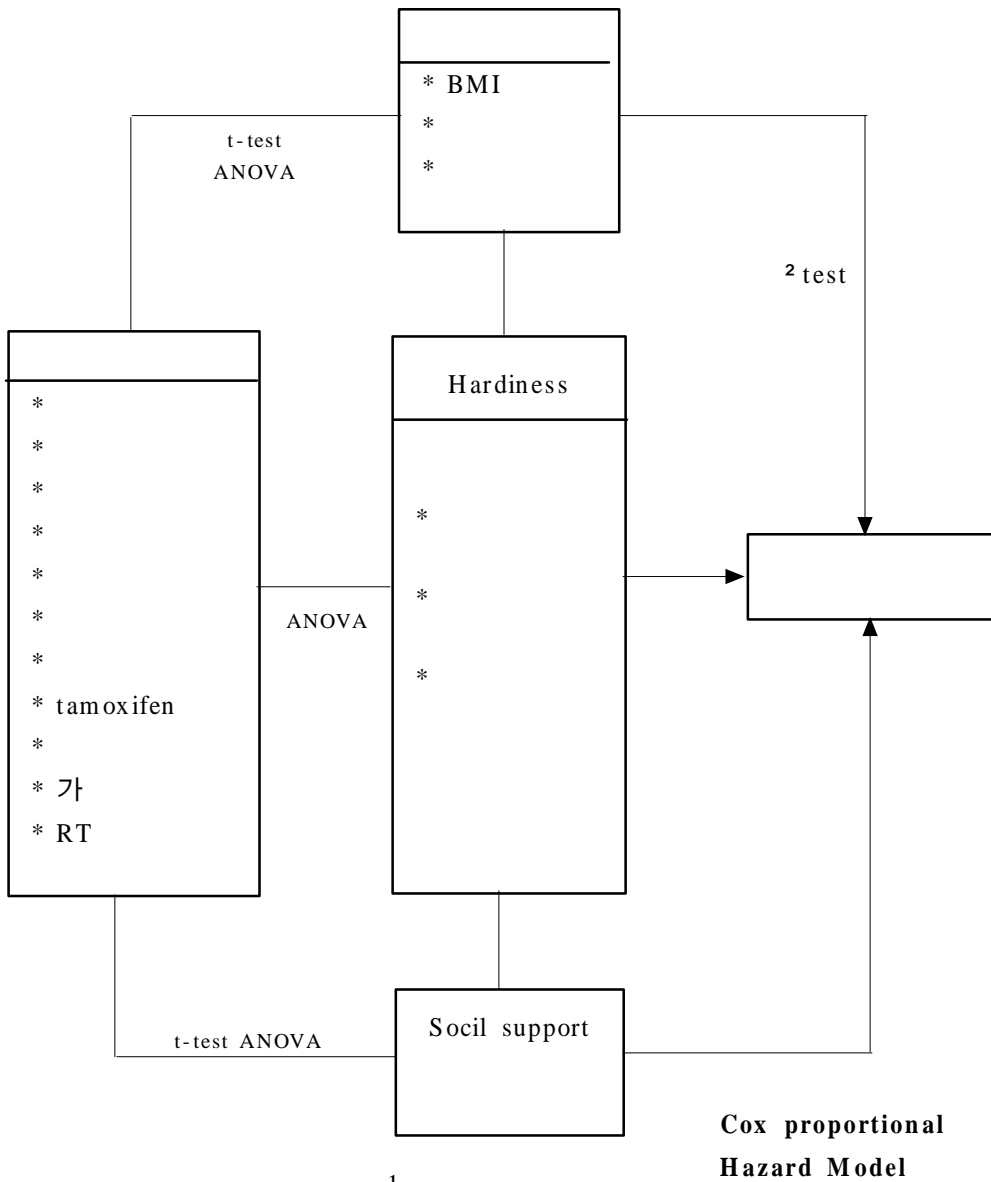
**INPUT**

Focal stimulus

**ADAPTIVE PROCESS**

**ADAPTIVE RESPONSE**

Physiologic Mode



1.

가.

137 44.6 65%가 35 49  
 32.1% . 3.8%  
 , 가 2 23.4%가 가  
 가 . 33.6%가 51.8%가  
 . 74.5%가 CMF 750mg/75mg/750mg  
 800mg/80mg/800mg ( 2). 51 81.3%가  
 가 70%가 가  
 가 22.4% ( 3).  
 BMI가 22.85 17  
 33 21 23.5 51.1% .  
 4.0g/dL 3.5g/dL 17.5% .  
 27.24cm 22.5cm, 33.0cm, 27cm  
 .  
 가 3000/mm<sup>3</sup>  
 137 47 34.3% . 3000/  
 mm<sup>3</sup> 47 (leukocyte nadir count)  
 2000 3000 (/mm<sup>3</sup>)가 68.1% ( 4).

2.

N=137

	N	%
<35	10	7.3
35-49	89	65.0
50	38	27.7
	125	96.2
	5	3.8
	7	
	93	67.9
	44	32.1
가		
	32	23.4
	105	76.6
	46	33.6
	91	66.4
	71	51.8
	66	48.2
700mg/70mg/700mg	13	9.5
750mg/75mg/750mg	43	31.4
800mg/80mg/800mg	59	43.1
850mg/85mg/850mg	13	9.5
900mg/90mg/900mg	9	6.6
BMI		
21	24	17.5
21 23.5	70	51.1
23.5 26	23	16.8
26	20	14.6
3.5g/dL	24	17.5
3.5g/dL	113	82.5
27cm	70	51.1
27cm	67	48.9



3.	(2)	N=51	
		N	%
		39	81.3
		9	18.8
		3	
		15	30.0
		35	70.0
		1	
		6	12.2
		32	65.3
		11	22.4
		2	

4.	N=137		
		N	%
3000/ mm <sup>3</sup>		90	65.7
3000/ mm <sup>3</sup>		47	34.3
1000/ mm <sup>3</sup>		1	2.1
1000	2000/ mm <sup>3</sup>	14	29.8
2000	3000/ mm <sup>3</sup>	32	68.1

. ,  
 75 , 175 , 110.76  
 140 .  
 23 346 190.48 . number  
 score 1.24 .  
 satisfaction score 4.47

0.78

2 ( 5). 27%가  
 (48.9%), 가 (10%), (8%), (2%)  
 (2%)  
 5. , N=51

± SD				
	110.76 ± 22.4549	75	175	92
	35.86 ± 10.0936	16	70	35
	37.86 ± 9.4213	20	59	35
	37.04 ± 8.5439	22	68	33
	190.48 ± 69.4239	23	346	184
	1.24 ± 0.5145	0.19	3.51	0.96
	4.47 ± 1.0845	0.85	5.85	4.74
( )	0.78 ± 0.5502	0	2	1

## 2.

가.

44 가 , 3000/mm<sup>3</sup> 3000/mm<sup>3</sup>  
 (Fisher's Exact test, P=1.000), (Fisher's  
 Exact test, P=0.151), 3000/mm<sup>3</sup> 가  
 (  $\chi^2 = 2.226$ , P=0.136).

2 ,

(Fisher's Exact test, P=0.473).

가 (  $\chi^2 = 1.254$ , P=0.263), 가 (  $\chi^2 = 0.740$ , P=0.390),

(  $\chi^2 = 0.573$ ,  $P = 0.449$ )

(  $\chi^2 = 0.251$ ,

$P = 0.617$ ),

(Fisher's Exact test,  $P = 0.160$ )

가 .

6.

: (%)

	WBC 3000	WBC 3000	$\chi^2$ (P-value)
	47(34.3)	90(65.7)	
	43(34.4)	82(65.6)	Fisher's (p=1.00)
	2(40.0)	3(60.0)	
	20(51.3)	19(48.7)	Fisher's (p=0.15)
	2(22.2)	7(77.8)	
	9(60.0)	6(40.0)	$\chi^2 = 2.226$ (p=0.14)
	13(37.1)	22(62.9)	
	3(50.0)	3(50.0)	Fisher's (p=0.47)
	16(50.0)	16(50.0)	
	3(27.3)	8(72.7)	
	29(31.2)	64(68.8)	$\chi^2 = 1.254$ (p=0.26)
	18(40.9)	26(59.1)	
가	13(40.6)	19(59.4)	$\chi^2 = 0.740$ (p=0.39)
	34(32.4)	71(67.6)	
	18(39.1)	28(60.9)	$\chi^2 = 0.573$ (p=0.45)
	30(32.9)	61(67.1)	
	23(32.4)	48(67.6)	$\chi^2 = 0.251$ (p=0.62)
	24(36.4)	42(63.6)	
700mg/70mg/700mg	3(23.1)	10(76.9)	Fisher's (p=0.16)
750mg/75mg/750mg	18(41.9)	25(58.1)	
800mg/80mg/800mg	15(25.4)	44(74.6)	
850mg/85mg/850mg	7(53.9)	6(46.1)	
900mg/90mg/900mg	4(44.4)	5(55.6)	

· , ,  
 BMI  
 (  $\chi^2 = 7.690$ ,  $P = 0.053$ ) 3.5g/dL  
 3.5g/dL (  $\chi^2$   
 $= 3.180$ ,  $P = 0.075$ ) (  $\chi^2 = 10.465$ ,  $P = 0.001$ ) .

7.

: (%)

	WBC 3000	WBC 3000	$\chi^2$ (P - value)
BMI			
21	13(54.2)	11(45.8)	$\chi^2 = 7.690(p=0.053)$
21 23.5	25(35.7)	45(64.3)	
23.5 26	5(21.7)	18(78.3)	
26	4(20.0)	16(80.0)	
(g/dL)			
3.5	12(50.0)	12(50.0)	$\chi^2 = 3.180(p=0.075)$
3.5	35(30.9)	78(69.1)	
(cm)			
27	33(47.1)	37(52.9)	$\chi^2 = 10.465(p=0.001)$
27	14(20.9)	53(79.1)	

(  $\chi^2 = 0.850$ ,  $P = 0.837$ )

$\chi^2 = 14.124$ ,  $P = 0.003$

(  $\chi^2 = 5.016$ ,

$P = 0.171$ ),

( Fisher's Exact=0.073),

(  $\chi^2 = 4.995$ ,

$P = 0.172$ ),

(Fisher's Exact=0.271)

가 ( 8).

8. ,

: (%)

	WBC 3000	WBC 3000	<sup>2</sup> (P - value)
93	8(61.5)	5(38.5)	<sup>2</sup> =0.850(p=0.837)
94- 109	7(63.6)	4(36.4)	
110- 123	6(46.1)	7(53.9)	
124- 175	7(58.3)	5(41.7)	
31	9(69.2)	4(30.8)	<sup>2</sup> =5.016(p=0.171)
32- 36	5(33.3)	10(66.7)	
37- 41	8(61.5)	5(38.5)	
42- 68	7(70.0)	3(30.0)	
139	7(53.8)	6(46.2)	<sup>2</sup> =14.124(p=0.003)
140- 185	10(83.3)	2(16.7)	
186- 242	2(16.7)	10(83.3)	
243- 346	9(75.0)	3(25.0)	
	6(50.0)	6(50.0)	Fisher's Exact=0.073
1	9(64.3)	5(35.7)	
2	3(27.3)	8(72.7)	
3	9(81.8)	2(18.2)	
4.13	8(66.7)	4(33.3)	<sup>2</sup> =4.995(p=0.172)
4.14- 4.76	4(33.3)	8(66.7)	
4.77- 5.05	9(75.0)	3(25.0)	
5.06- 5.85	6(50.0)	6(50.0)	
	9(64.3)	5(35.7)	Fisher's Exact=0.271
1	17(53.1)	15(46.9)	
2	3(100.0)	0(0.0)	

3. , ,

가  $3000/\text{mm}^3$  47  
 (leukocyte nadir count)가 가  
 (P=0.0231). 가

가 (P=0.0002). ( 9),  
 ( 11) 가 .

9. N=51

		BMI					
		F		F		F	
1000		3.00	2.30	23.00	1.95	23.00	0.23
1000	2000	3.80		27.00		22.35	
2000	3000	3.92		25.96		21.87	

10. N=51

		F		F		F		F	
1000		49.00	0.79	58.00	13.28 *	52.00	2.67	159.00	4.63 *
1000	2000	38.57		35.86		37.29		111.71	
2000	3000	36.93		35.00		34.00		105.93	

\* P < 0.05

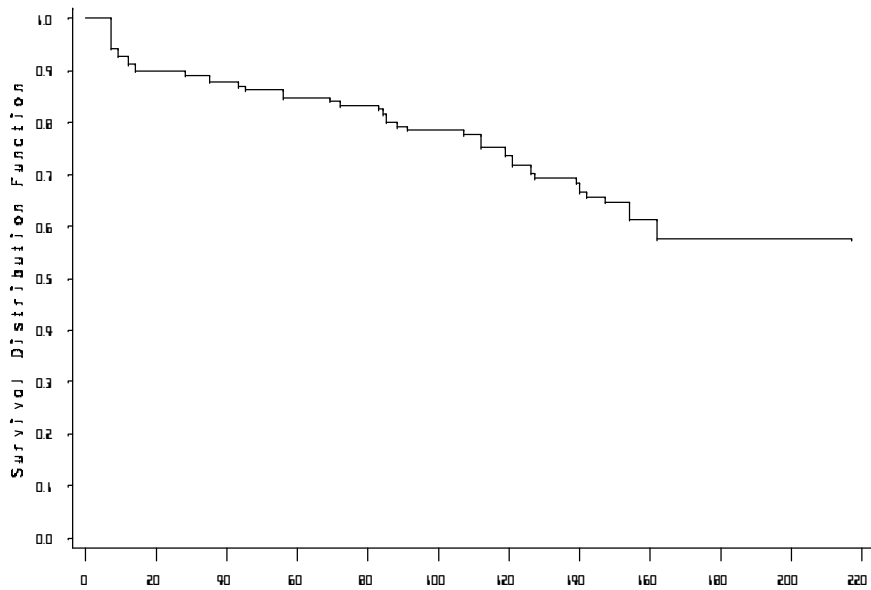
11. N=51

		N	$\pm$ SD	F	p- value
1000		1	136.0	0.94	0.4089
1000	2000	7	209.6 $\pm$ 55.2776		
2000	3000	14	184.4 $\pm$ 57.3527		

## 4. Cox

Kaplan-Meier 3 0.78 6  
 0.57 217 ( 2).  
 가  $3000/\text{mm}^3$   
 130 4.519 .  
 Cox's regression ( , 1998) 가

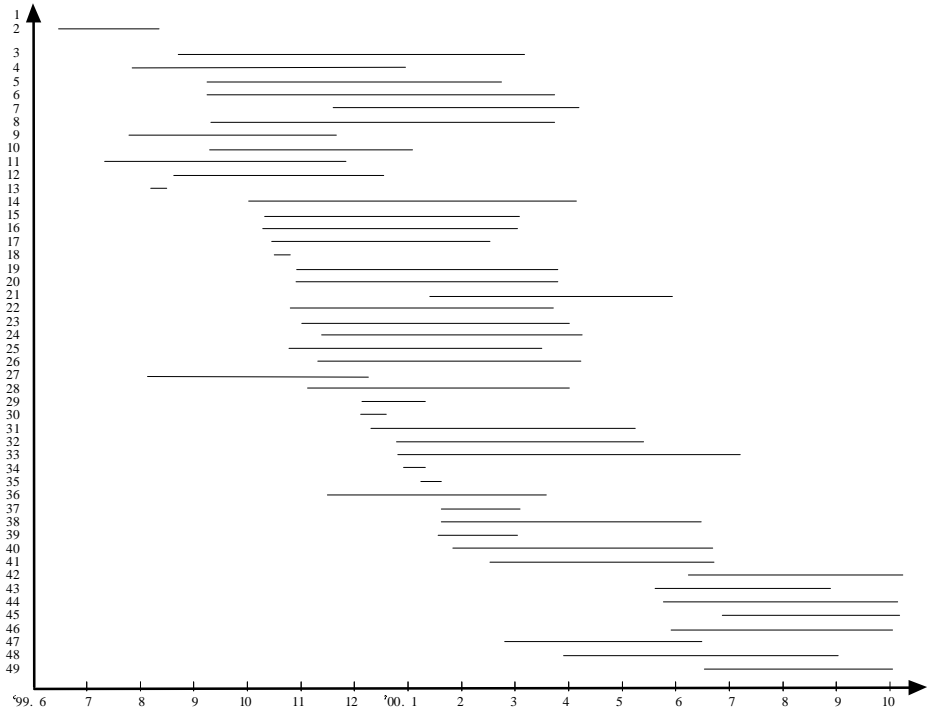
2. 138 Kaplan-Meier





3. (N=137) ( ( ), ( ))





4. (N=51) ( ), ( )

가.

137 ( 3)

가 51 ( 4)

(RR=0.376, 95% CI: 0.201-0.703) 186-242 (RR=3.059,

95% CI: 1.111-8.427) .

(RR=1.030)

(RR=0.688), 가

1.357(95% CI: 0.753-2.444), 가  
 1.202(95% CI: 0.633-2.281),  
 1.192(95% CI: 0.657-2.165) . 가  
 가 가  
 ( 13).  
 가 0.611  
 . BMI 21 23.5  
 21 가 1.674 (95% CI:  
 0.855-3.276) , BMI가  
 ( 12).  
 가 ,  
 가 .  
 가 가  
 186-242 ( 14).

12. Cox regression analysis		( )-			N=137
		RR	95%	P - value	
3.5		1			
3.5		-0.4920	0.611	0.317- 1.178	0.1414
27.0		1			
27.0		-0.9783	0.376	0.201- 0.703	0.0022
BMI					
21		0.5151	1.674	0.855- 3.276	0.1326
21	23.5		1		
23.5	26	-0.5618	0.570	0.218- 1.490	0.2516
26		-0.6698	0.512	0.178- 1.471	0.2138

13. Cox regression analysis

( )

N=137

		RR	95%	P - value	
-	<35	0.0298	1.030	0.362- 2.931	0.9554
	35- 49		1		
	50	- 0.1114	0.895	0.459- 1.742	0.7433
			1		
		- 0.3742	0.688	0.166- 2.846	0.6055
			1		
		1.1068	3.025	0.699- 13.097	0.1388
			1		
		0.6531	1.922	0.809- 4.564	0.1389
		0.0192	1.019	0.746- 1.393	0.9044
			1		
		- 0.0661	0.936	0.270- 3.250	0.9171
		- 0.5873	0.556	0.110- 2.813	0.4778
			1		
		0.3051	1.357	0.753- 2.444	0.3096
가			1		
		0.1836	1.202	0.633- 2.281	0.5746
			1		
		0.1759	1.192	0.657- 2.165	0.5629
			1		
		- 0.1239	0.883	0.495- 1.576	0.6747
	700m g/ 70m g/ 700m g		1		
	750m g/ 75m g/ 750m g	0.7579	2.134	0.628- 7.246	0.2244
	800m g/ 80m g/ 800m g	0.1619	1.176	0.340- 4.063	0.7979
	850m g/ 85m g/ 850m g	1.1176	3.057	0.789- 11.842	0.1057
	900m g/ 90m g/ 900m g	0.9083	2.480	0.554- 11.104	0.2350

14. Cox regression analysis

( )

N=51

		RR	95%	P - value
93		1		
94- 109	- 0.0586	0.943	0.273- 3.263	0.9263
110- 123	0.2408	1.272	0.403- 4.019	0.6816
124- 175	- 0.0014	0.999	0.289- 3.456	0.9982
31		1		
32- 37	- 0.1061	0.899	0.260- 3.108	0.8669
38- 44	0.2223	1.249	0.380- 4.103	0.7141
45- 59	0.3393	1.404	0.424- 4.653	0.5789
29		1		
30- 35	0.5398	1.716	0.512- 5.745	0.3813
36- 42	0.5359	1.709	0.457- 6.390	0.4258
43- 70	0.4765	1.610	0.429- 6.041	0.4799
31		1		
32- 36	0.9244	2.520	0.788- 8.061	0.1192
37- 41	0.1773	1.194	0.320- 4.459	0.7921
42- 68	- 0.0007	0.999	0.223- 4.476	0.9993
139		1		
140- 185	- 1.0069	0.365	0.073- 1.816	0.2184
186- 242	1.1182	3.059	1.111- 8.427	0.0305
243- 346	- 0.6468	0.524	0.130- 2.102	0.3617
1		1		
2	- 0.2994	0.741	0.224- 2.459	0.6246
3	0.9477	2.580	0.063- 1.565	0.1579
3	- 1.1555	0.315	0.063- 1.565	0.1579
4.13		1		
4.14- 4.76	0.7999	2.225	0.661- 7.489	0.1963
4.77- 5.05	- 0.2797	0.756	0.168- 3.398	0.7153
5.06- 5.85	0.6281	1.874	0.525- 6.685	0.3330

Cox

AIC

15.

			AIC	<sup>2</sup> P-value	
M1	), BMI,	( , , 11	207.03	14.997	0.0006
full model	, , , ,				
M2	), BMI,	( , , 11	187.707	6.538	0.0106
M3	, , , ,		172.431	11.741	0.0006
M4	BMI, , , , ,		178.057	16.115	0.0003
M5	BMI, , ,		152.306	18.876	0.0001

( 15)

AIC

M5

가

가 0.145(95% CI: 0.042-0.499)

(P=0.0022). BMI BMI 21 23.5 21

가 1.385(95% CI: 0.694-2.765) 가

(P=0.3559) BMI 23.5 26 0.701(95% CI: 0.256-1.915), BMI

26 0.727(95% CI: 0.244-2.163) 가

. 27cm 가 27cm

0.698(95% CI: 0.266-2.1828) (P=0.4638).

186-242 139

2.224(95% CI: 0.553-8.956) 가(P=0.2606) 140-185

243-346 가 ( 16).

16. Cox N=51

		95%				
(g/dL)						
3.5				1		
3.5		-1.9324	0.6312	0.145	0.042	0.499
(cm)						
27				1		
27		-0.3598	0.4912	0.698	0.266	1.828
BMI						
21		0.3256	0.3527	1.385	0.694	2.765
21	23.5			1		
23.5	26	-0.3558	0.5131	0.701	0.256	1.915
26		-0.3193	0.5566	0.727	0.244	2.163
		0.0039	0.0035	1.004	0.997	1.011
139				1		
140-185		-0.4943	0.9899	0.610	0.088	4.246
186-242		0.7994	0.7106	2.224	0.553	8.956
243-346		-0.6970	0.9197	0.498	0.082	3.021

1.

가

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가 51

Cox

1

, BMI

(Hardiness scale)

2.

1976 Bonadonna CMF 78%  
( $<4000/mm^3$ ) 2500/ $mm^3$  7%  
CMF 가 . Lee(1982)  
CMF 42%  
30%  
. 가 3000/ $mm^3$   
34.3% .  
가 (Moshe  
Murray, 1997). Yoneda(1996)  
NK  
가 . Burnett (1993)  
가 가  
. Anaissie (1998) Fludarabine  
. Fountzilias (1992)  
. IL-6 Seymour  
(1995) IL-6 가  
가  
(body composition)  
Hioki (1984) 가



prealbumin rapid turnover protein

. Moshe Murray (1997)

(loss of lean body tissue)

(nutritional support)

Shike (1984)

Salk(1962)

(psychic distress)

가 (Solomon, 1969).

T cells

(Solomon , 1974). Call Davis(1989)

. Solomon (1987) lymphocyte count

가 . Hamner(1996)

Pollock (1990)

가

Goodwin(1988) , 가  
. Kobasa (1981)  
(1994)  
가 , ,  
가 .  
Ferrell (1998)  
가 .  
110.76 140  
. 가  
. ,  
가 (conditioning variable)  
(LaRocco , 1980)  
(coping mechanism) (Pearlin Schooler, 1978).  
(Antonovsky, 1967; Syme , 1976) (Gore, 1973),  
(Berkman Syme, 1979; Pearlin Johnson, 1977), (Berkman  
Syme, 1979; Feather Wainstock, 1989; Sherbourne Hays, 1990),  
(Berkman Syme, 1979), "가 가 ?" "  
?", "  
(Berkman Syme, 1979).

(dimension) 가 (Ell , 1989). Levy

(1990) 가

가 natural killer-cell activity 가 .

, , 가

가 .

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Waxler (1991) 133

, (outdoor work)

.

. Sinsheimer Holland(1987)

가 , 가 ,

.

,

가 가 (Neuling Winfield, 1988;

Northouse, 1988).

가 .

가

CMF

stage stage

137

1999

10 1 2000 10 19 1

3000/mm<sup>3</sup>

47 (34.3%)

Cox

Proportional Hazards Model

BMI

가

가

가

(leukocyte nadir count)가

3.5g/dL

3.5g/dL

0.145(95% CI: 0.042-0.499)

가 27cm

27cm

0.698(95% CI:

0.266- 1.828) . BMI BMI 21 23.5  
 21 1.385(95% CI: 0.694-2.765), BMI 23.5  
 26 0.701(95% CI: 0.256- 1.915), BMI 26 0.727(95% CI:  
 0.244- 2.163) BMI가 .  
 186- 242 139  
 2.224(95% CI: 0.553- 8.956) (P=0.2606) 140- 185  
 243- 346 가 .

가

가 .

Psychosocial Epidemiology

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## **ABSTRACT**

### **The degree and related factors of leukocytopenia in breast cancer patients receiving CMF chemotherapy**

**Jin Sook Seok**

Graduate School of

Health Science and Management

Yonsei University

(Directed by Professor Heechoul Ohrr, M.D., Ph.D)

The objective of this prospective study is to investigate the degree of and associated factors of leukocytopenia among breast cancer patients in Korea receiving CMF chemotherapy. The sample includes 137 patients from Yonsei University Medical Cancer Center. Data about these patients were collected from Oct. 1, 1999 to Oct. 19, 2000. 47(34.3%) patients had leukocytopenia during the study period. Social support and hardiness were measured for 51 patients. The Cox's proportional hazards model was used to analyze this data. The study results are as follows:

1. Leukocytopenia was statistically associated with BMI, arm circumferences and social support.

2. Leukocyte nadir count was statistically associated with hardiness and commitment.

3. After the analyses using the Cox proportional hazards model with serum albumin, arm circumferences, BMI and social support, serum albumin level was found to be statistically associated with leukocytopenia.

Patients with high level of serum albumin( 3.5g/dL) showed decreased risk for leukocytopenia(RR: 0.145, 95% CI: 0.042-0.499) compared to those with low serum albumin level(<3.5g/dL).

In conclusion, this study found that nutritional state and social support were the factors to explain the degree of leukocytopenia due to anticancer chemotherapy. It is strongly recommended that not only the optimal nutritional support but also adequate social support need to be provided for breast cancer patients receiving CMF chemotherapy.