

：

*

**

. Barnett(1997)

1.

Curt (2000)

, 30%

88%

가

75%

가

가

(King et al., 1997; Padilla & Grant, 1985). 가

가

(cancer-related fatigue)

(10)

(Portenoy &

Itri, 1999).

2

가

(Clark

& Lacasse, 1998),

70-90%

10

5

가

(Molassiotis & Chan, 2001;

(Wells & Fedric, 2001). 1)

, 2)

, 3)

, 4)

Pickard-Holley, 1997).

, 5)

, 6)

, 7)

, 8)

, 9)

, 10)

가

*

2000

**

2001 12 31

2002 3 18

2002 6 18

- Choi (1999) 가 .
- 31% , , 2.
- 가 (Jamar, 1989; Molassiotis & Chan, 2001; Park, 1999; Richardson, Ream & Wilson-Barnett, 1998) 1)
- 3-5 가 가 2)
- 가 3)
- 3.
- 가 1) : , , / (Piper et al, 1998) .
- (Kwon, 1999; Lee, 2000) 2) : (Padilla et al, 1983),
- 1993; Song, 1992) 가 .
- 3) : EMFC(Epirubicin, Methotrexate, 5-Fu, Cisplatin) 3
- 가 3 6 .
- Park (1999) 가 10
- Shin (1999) 가 .
- Molassiotis Chan (2001) 1.
- 2 , Zittoun, Achard Runzniewski EMFC 6
- (1999) 10 3 가 18-70
- . Richardson (1998) 109
- 3 4 (2000.01.~ 2001.04.) 21 가
- 6 3
- 4
- 11 . 11 6
- 가 가 3 , 5 4
- 가 4 .
- 2.

<Table 2> Demographic and Cancer-Related Characteristics in Drop-Out Patients

ID	age	sex	economic status	cancer stage	metastasis	weight change	time at stoppedchemo.	reason of attrition
d1	46	M	middle	4	yes	decreased	3	poor condition
d2	32	F	upper	3	no	decreased	3	rejection of research
d3	62	F	middle	3	no	decreased	3	rejection of chemo.
d4	63	M	middle	3	no	decreased	3	poor condition
d5	63	M	middle	4	yes	decreased	2	poor condition
d6	62	M	low	3	no	decreased	2	poor condition
d7	58	M	middle	3	no	decreased	3	poor condition
d8	38	M	middle	4	no	decreased	1	rejection of chemo.
d9	41	M	middle	3	no	decreased	2	rejection of chemo.
d10	68	M	middle	3	no	decreased	3	financial problem

가 <Table 2> 10 . 10 5 1, 2, 3, 5 . 1
 가 32-68 53.3(±12.78) 3 9.50 가
 (80%)가 10 1
 3 가 7, 4 가 3 0.56 가 . 3 4.78,
 가 4 4.25 가 1 2.95, 6 2.02
 3 60% 가 가 <Figure 1>, <Table
 1 4> (p = .079).
 90%가
 (50%) (30%)

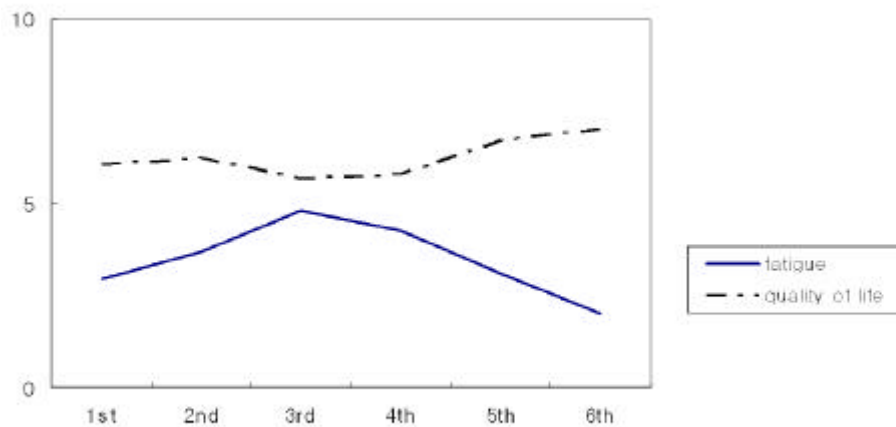
<Table 4> Repeated ANOVA of Change Patterns of Fatigue during Consecutive Chemotherapies

order of chemo.	mean	SD	F	p
1st chemo.	2.95	1.72	2.494	.079
2nd chemo.	3.70	2.08		
3rd chemo.	4.78	2.66		
4th chemo.	4.25	2.13		

2)
 4 <Table 3>
 <Figure 1> .
 10 가
 1.88 가 2 가 6.68 가

<Table 3> Fatigue Scores of Each Subject during Consecutive Chemotherapies

ID	1st chemo	2nd chemo	3rd chemo	4th chemo	5th chemo	6th chemo	mean(SD)
1	.72	4.83	9.50	6.11	5.33	.	5.30(3.14)
2	3.89	8.50	7.39	6.94	.	.	6.68(1.97)
3	4.61	2.89	8.83	4.06	.	.	5.09(2.59)
4	4.33	4.17	3.89	1.61	1.94	1.94	2.98(1.27)
5	2.00	4.17	3.22	2.28	2.39	1.22	2.55(1.02)
6	2.33	2.00	2.50	2.17	2.06	.	2.21(0.20)
7	4.83	4.22	3.22	3.94	.	.	4.06(0.67)
8	3.56	3.00	4.72	7.61	.	.	4.72(2.05)
9	.83	1.39	1.72	3.00	2.78	2.89	2.10(0.91)
10	.56	.89	2.50	2.72	2.72	.	1.88(1.06)
11	4.78	4.61	5.06	6.28	4.28	.	5.00(0.77)
mean(SD)	2.95(1.71)	3.70(2.08)	4.78(2.66)	4.25(2.13)	3.07(1.26)	2.02(.84)	



3)

(p = .271).

<Table 5>

<Figure 1>

<Table 6> Repeated ANOVA of the Change Patterns of Quality of Life during Consecutive Chemotherapies

order of chemo.	mean	SD	F	p
1st chemo.	6.07	.99	1.370	.271
2nd chemo.	6.22	1.14		
3rd chemo.	5.70	1.36		
4th chemo.	5.79	1.06		

가 7.08, 7.71 가 9 10
 4.87 가 .3 8 5 (10
)
 10 2
 8.12가 가 1 3
 3.83 가
 5 가
 6.70, 6 가 7.03 가 3 가
 5.70, 4 가 5.79 가
 <Figure 1>, 4

4)

6

<Table 7>. 6

11

3

<Table 6>.

<Table 5> Quality of Life Scores of Each Subject during Consecutive Chemotherapies

ID	1st	2nd	3rd	4th	5th	6th	mean (SD)
1	5.75	4.93	3.83	3.96	5.60	.	4.87(0.89)
2	5.35	4.68	4.89	5.05	.	.	4.99(0.26)
3	5.66	5.24	3.26	5.43	.	.	4.90(1.10)
4	4.68	6.82	6.92	6.80	7.22	6.85	6.55(0.92)
5	6.01	7.00	6.68	6.50	6.97	7.78	6.82(0.59)
6	5.87	5.51	5.47	6.56	6.83	.	6.05(0.62)
7	5.41	5.83	5.94	5.80	.	.	5.75(0.23)
8	6.27	6.33	5.43	4.21	.	.	5.56(0.99)
9	7.82	7.90	6.90	6.59	6.80	6.45	7.08(0.63)
10	7.96	8.12	7.75	7.18	7.55	.	7.71(0.37)
11	6.01	6.05	5.61	5.59	5.60	.	5.77(0.24)
mean(SD)	6.07(.99)	6.22(1.14)	5.70(1.36)	5.79(1.06)	6.70(.70)	7.03(.68)	6.10

<Table 7> Correlation Coefficient between
Fatigue and Quality of Life

1st (n = 11)	2nd (n = 11)	3rd (n = 11)	4th (n = 11)	5th (n = 7)
-.74**	-.62*	-.84**	-.87**	-.78*

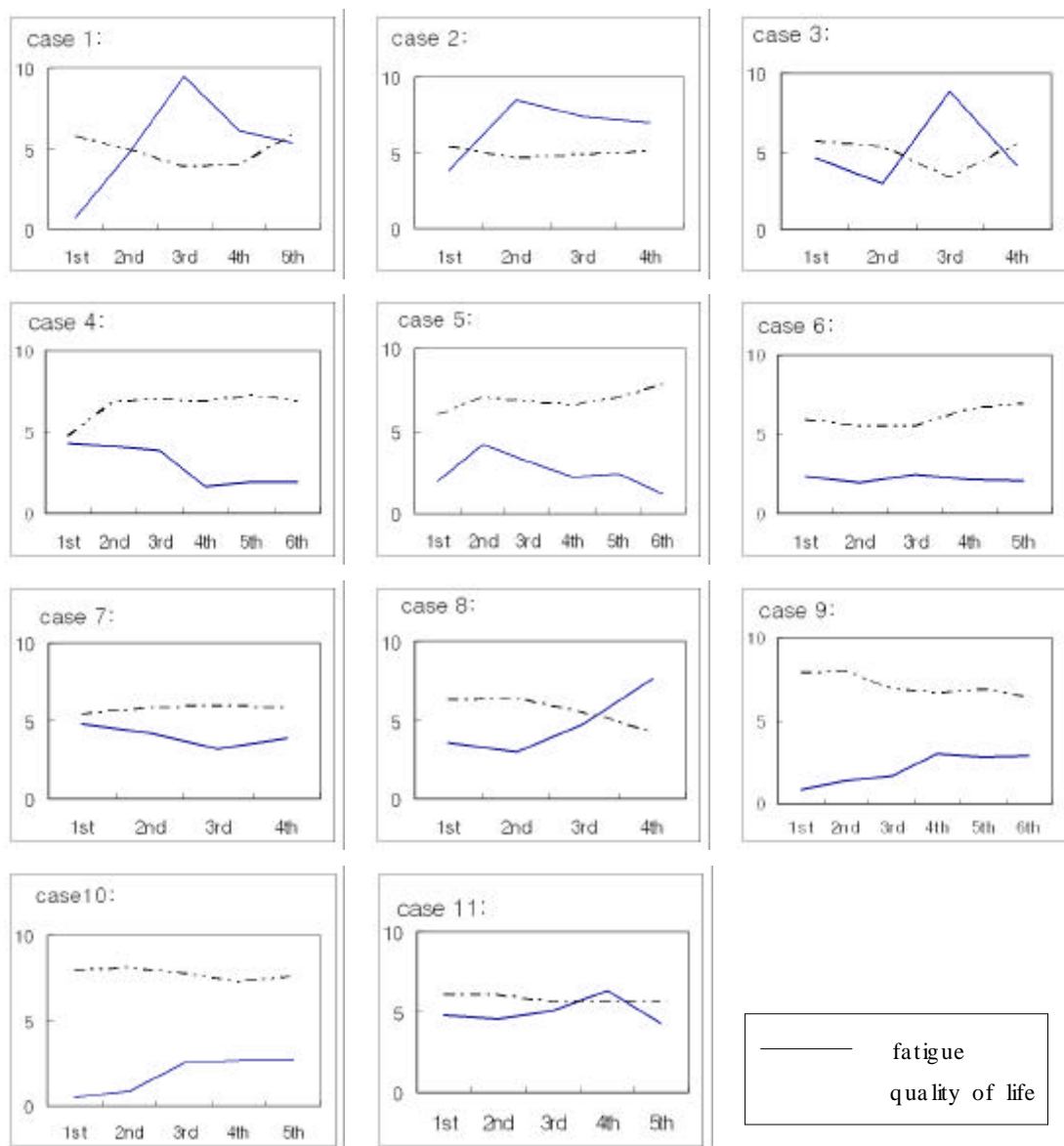
*p<.05 ** p<.01

<Figure 1>

3 4 가 5
2 , 3
가 4 6

<Figure

. 1 , 2 , 3



<Figure 2> The Change Patterns of Fatigue and Quality of Life during
Consecutive Chemotherapies

가 가 3-4 가

가 가 5

4, 5, 6, 7, , .

6 7 Lee(2000) Song(1992)

가 .

8, 9, 10 가 11 . Lee(2000) 5 가 1, 2, 3 가 (F = 3.82, p = .000) 1 가 2, 3, 5 (F = 3.20, p = .00).

Song(1992) 가 (r = .23, p = .002) 가 가 가

가 11 3 가 4 ,

가 가 21 가 가 3 가 가 가 6 가 4 5 , 가 8 4 5

가 가 3 1 3 . 8 가 3

가 가 3 가 가 3 가

가 가 3 가 Kwon(1999) 180 (Yang & Lee, 2000)

(Kim, Jun & Kim, 1996; Yang, Kwon, & Kim, 2001) 3 r = -.319 (p < .001), r = -.417 (p < .001), r = -.409 (p < .001)

가 가 , 가 가 가 Lee(2000) r = -.71 (p = .00) 가

10 1.88-6.68, 2.02-4.78 1.88-6.68

가 4.87-7.71 . Lee(2000) 가 5.45 (SD = 1.54), 4.23 (SD = 1.27) Park(1999) 3.86-5.64 , Choi(1999)

가 4.97(SD= 1.87), Kwon(1997) 가 3 (30%) .
 5.31(SD= 1.51) . Jang(1993) 4 11
 가 10 5.92 가 1 6
 Park 가 4
 가 . 5 6 가 3 4 가
 4 11
 가 6
 , 가
 1. 가
 EMFC 가

References

- 2000 1 2001 4
 6
 21 4
 11 가
 Piper (1998) 'Revised
 Piper Fatigue Scale' Lee(1999)
 Cronbach's alpha = .88
 (Kim, 1997; Kwon, 1990; Padilla et al., 1983)
 Cronbach's alpha = .82
 51.2 , 가
 63.4% , 72.7% 가
 45.5% (54.5%)
 (45.4%) . 1 3 가
 5 91% . 10
 , , ,
 가 3
 3
 6 가
 가 5 (50%) 가
- Barnett, M. L. (1997). Fatigue, in S.E. Otto (3rd Ed.), *Oncology Nursing*, St Louis: Mosby, 669-678.
- Choi, I. J. (1999). *A study on factors to fatigue in cancer patients receiving chemotherapy*. Unpublished Master's dissertation. Yonsei University.
- Clark, P. M., & Lacasse, C. (1998). Cancer-related fatigue : Clinical practice Issues, *Clin J Oncol Nurs*, 2(2), 45-53.
- Curt, G. A., Breitbart, W., Cella, D., Groopman, J. E., Horning, S. J., Itri, L. M., Johnson, D. H., Miaskowski, C., Scherr, S. L., Portenoy, R. K., & Vogelzang, N. J. (2000). Impact of cancer-related fatigue on the lives of patients : New findings from the fatigue coalition. *Oncologist*, 5(5), 353-60.
- Jang, H. K. (1993). *A study of quality of life in cancer patients receiving chemotherapy*. Unpublished Master Dissertation, Jeunnam University, Jeunju.

- Jamar, S. (1989). Fatigue in women receiving chemotherapy for ovarian cancer, in Funk, S., Tornquist, E., Champagne, M., Archer, Copp, L., & Wiess, R.(eds). *Key aspects of comfort : management of pain, fatigue and nausea*, New York : Springer, 224-228.
- Kim, J. S. (1997). *An Effect of Home Care Nursing for Chemotherapy Patients*. Doctoral Dissertation from Seoul National University, Seoul, Korea.
- Kim, M. J., Jun, M. H., Kim, Y. H. (1996). The Study on Nausea · Vomiting and Calorie Intake for Gastrectomy Patients Receiving Cisplatin. *J Korean Acad Adult Nurs*, 8(1), 29-40.
- King, C. R., Haberman, M., Berry, D. L., Bush, N., Butler, L., Dow, K. H., Ferrell, B., Grant, M., Gue, D., Hinds, P., Kreuer, J., Padilla, G., & Underwood, S. (1997). Quality of life and cancer experience : The state-of-the-knowledge., *ONF*. 24(1), 27-41.
- Kwon, Y. E. (1990) *A study of the relationship between perceived social support and quality of life of cancer patients*. Unpublished master dissertation, Yonsei University.
- Kwon, Y. E. (1997). *A structured model for fatigue-regulation behaviors in cancer patients undergoing chemotherapy*, Unpublished doctoral dissertation, Hanyang University, Seoul, Korea.
- Kwon, Y. E. (1999). A study of the relationship between fatigue and quality of life in cancer patients undergoing chemotherapy. *J Korean Acad Adult Nurs*, 11(4), 820-829.
- Lee, E. H. (1999). Construct validity of the revised Piper Fatigue Scale in Korean women with breast cancer. *J Korean Acad Nurs*, 29(2), 485-493.
- Lee, Y. H. (2000). *The relationship of fatigue and quality of life in cancer patients receiving chemotherapy*. Unpublished Master dissertation, Kosin University, Pusan.
- Molassiotis, A., & Chan, C. W. H. (2001). Fatigue patterns in chinese patients receiving chemotherapy, *Eur J Oncol Nurs*, 5(1), 60-67.
- Padilla, G. V., & Grant, M. M. (1985), Quality of life as a cancer nursing outcome variable, *Adv Nurs Sci*, 8(1), 45-60.
- Padilla, G. V., Presant, C., Grant, M. M., Metter, G., Lipsett, J., & Heide, F. (1983). Quality of life index for patients with cancer. *Res Nurs Health*, 6, 117-126.
- Park, E. A. (1999). *The changes in the degree of fatigue and salivary cortisol concentration with the elapse of chemotherapy in breast cancer patients*. Unpublished Master dissertation, Keimyung University, Daegu, Korea.
- Pickard-Holley, S. (1997). Fatigue in cancer patients: a descriptive study. *Cancer Nurs*, 14(4), 13-19.
- Piper, B. F., Dibble, S. L., Dodd, M. L., Weiss, M. C., Slaughter, R. F., & Paul, S. M. (1998). The revised Piper Fatigue Scale ; Psychometric evaluation in women with breast cancer, *Oncol Nurs Forum*, 25(4), 677-684.
- Portenoy, R. K., & Itri, L. M. (1999). Cancer-related fatigue: Guidelines for evaluation and management, *Oncologist*, 4(1), 1-10.
- Richardson, A., Ream, E., & Wilson-Barnett, J. (1998). Fatigue in patients receiving chemotherapy; Patterns of change. *Cancer Nurs*, 21(1), 17-30.
- Shin, H. S., Park, H. J., Park, M. H., Yeun, K. S., Kim, H. K., Moom, H. L., Song, H. H. (1999). The changes in quality of life with the elapse of chemotherapy in Head and Neck cancer patients. *Hosp*, 4, 23-36.
- Song, M. R. (1992). *An exploratory study on factors related to fatigue among chemotherapy patients*. Unpublished master

- dissertation, Seoul National University, Seoul, Korea.
- Wells, J. N. B., & Fedric, T. (2001). Helping patients manage Cancer-Related Fatigue. *Home Health Nurse*, 19(8), 486-493.
- Yang, Y. H., Lee, D. S. (2000). The Relationship of Anorexia, Nausea, Vomiting, Oral Intake and Nutritional Status in Patients Receiving Chemotherapy. *J Korean Acad Nurs*, 30(3), 721-730.
- Yang, Y. H., Kwon, S. J., & Kim, C. I. (2001). The nutritional status of the patients with cancer during the chemotherapies. *J Korean Acad Nurs*, 31(6), 978-987.
- Zittoun, R., Achard, S., & Runzniewski, M. (1999). Assessment of quality of life during intensive chemotherapy or bone marrow transplantation. *Psycho-Oncology*, 8, 64-73.

- Abstract -

The Trajectory of Fatigue and Quality of Life in Stomach Cancer Patients Receiving Chemotherapy*

Yang, Young-Hee **

Purpose: This study aimed to identify the change patterns of fatigue and quality of life during consecutive chemotherapies and to determine the relationship of these two variables.

Method: Stomach cancer patients receiving chemotherapy were recruited from a university hospital in Seoul. Each chemotherapy, subjects were asked to respond to the questionnaires regarding their fatigue and quality of life. The number of subjects who completed 4 cycles and over was 11. Fatigue was measured with Lee's tool(1999). Quality of life was measured with a tool revised by the author based on Padilla et al(1983).

Result: Most patients were in 1st stage(5 patients) or 3rd stage(5 patients). Fatigue was revealed at its highest level in the 3rd or 4th chemotherapy and at its lowest level in the 1st or 6th chemotherapy. A quality of life appeared at its highest level in the 5th or 6th chemotherapy and the lowest level in 3rd or 4th chemotherapy.

Conclusion: Among 6 cycles of chemotherapy, in 3-4th chemotherapy the fatigue was the highest and the quality of life were the lowest. Many patients decided to stop treatment at the same period. Therefore we can recognize cancer patients receiving chemotherapy are in the highest risk at the time of the 3-4 th chemotherapy.

Key words : Stomach cancer patients,
Chemotherapy, Fatigue,
Quality of life

* The present research was conducted by the research fund of Dankook University in 2000.

** Professor in Department of Nursing, Dankook University