

*, †
* . * . †

_____ :

_____ : 1989 4 1997 12

154

FIGO Ib 12 , IIa 24 , IIb 98 , IIIa 1 , IIIb 17 , IVa 2 . Kaplan-Meier
Log-rank test , Cox proportional hazard model
logistic regression model

가 RTOG/EORTC SOMA scale

_____ : 154 가 130 84.4% 가 6
, 25 , 10 가 31.5%가 가 6
가 25 , 가 25 , 가 15
42.1% (65/154) , (,) ()
, 25.9% (40/154), 25.9% (40/154) .
가 , 가
.5 FIGO Ib 74%, IIa 67%, IIb 63%, IIIb 45% .
: 가 4 cm 가 가 가 4 cm
가 4 cm 가 가 가 4 cm

: , ,

²⁾ 3

5

가

1999 2 cisplatin

³⁾ 7)

"Clinical Announcement" ¹⁾ Clini-
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vical cancer consensus conference
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Te l : 055)750-8625, Fax : 055)750-8217
E- mail : cgyinj@nongae.gsnu.ac.kr

1989 4 1997 12

84 53 7 136 24

IB 12 , IIA 24 , IIB 98 , IIIA 1 , IIIB 17 , IVA 2

II B가 64%

143 93% 8 , 3

가 4 cm 가 107 4 cm 60 , 50

38 , 가 6 가

28 77 12 mg%

2 :

, 77 12 mg% (Table 1).

6 MV 가 4,500

cGy 5,000 cGy 500

1,000 cGy 가 28

가 126

Point A

7,500 8,500 cGy

7,000 7,500 cGy 3

가

logistic regression model

Kaplan-Meier

Log-rank test , Cox propor-

tional hazard model

가 RTOG/EORTC SOMA

scale grade 1 , grade 2

가 , grade 3

Table 1. Patient Characteristics

Characteristics	Number (%)
Age	
20-29	1 (0.7)
30-39	11 (7.1)
40-49	27 (17.5)
50-59	48 (31.2)
60-69	50 (32.5)
70	17 (11.0)
Histology	
squamous	143 (92.9)
LCNK*	78 (50.7)
LCK†	33 (21.4)
not specified	32 (20.8)
adenosquamous	3 (1.9)
adenocarcinoma	8 (5.2)
Stage	
Ib	12 (7.8)
IIa	24 (15.6)
IIb	98 (63.6)
IIIa	1 (0.7)
IIIb	17 (11.0)
IVa	2 (1.3)
Type of ICR	
low dose rate	26 (16.9)
high dose rate	128 (83.1)

*Large cell non-keratinizing, †Large cell keratinizing

Table 2. Failure Pattern

	LRF [*] (%)	DF [†] (%)	LRF + DF (%)	Total (%)
Overall (n=154)	25 (16.2)	25 (16.2)	15 (9.7)	65 (42.1)
Tumor response				
complete responder (n=130)	6 (4.6)	25 (19.2)	10 (7.7)	41 (31.5)
partial/ nonresponder (n=24)	19 (79.2)	0 (0.0)	5 (20.8)	24 (100)
Histology				
squamous (n=143)	23 (16.1)	20 (14.0)	14 (9.8)	57 (39.9)
nonsquamous (n=11)	2 (18.2)	5 (45.5)	1 (9.1)	8 (72.8)
Tumor size				
tumor < 4 cm (n=107)	15 (14.2)	15 (14.2)	6 (5.6)	36 (34.0)
tumor ≥ 4 cm (n=47)	10 (21.3)	10 (21.3)	9 (19.2)	29 (61.8)
Pelvic L/ N in involvement				
no (n=126)	20 (15.9)	18 (14.3)	10 (7.9)	48 (38.1)
yes (n=28)	5 (17.9)	7 (25.0)	5 (17.9)	17 (60.8)

*locoregional failure, †distant failure

154 가 130
 84.4% .
 가 25 , 가 25 , 가 15
 42.1% (65/154) ,
 ()
 ()
 25.9% (40/154), 25.9% (40/154) .
 23.8%
 54.6% (Table 2).
 가 , ,
 (Table 3).
 130 가 6 , 25
 , 10
 31.5% .
 3 108 13
 73% (30/41)가 24
 , 88% (36/41)가 36 60
 가 1 .
 16 10 (62.5%) 가 ,
 가 . 24 5 (20.8%)
 16 (45.7%) 가
 25 10 (40%),
 가 10 6 (60%)
 가 .
 10 7 가
 6 가 .
 가 , , ,
 가 (Table 4). 가 가
 가 4 cm ,
 가
 47 10 (21.3%) ,
 28 7 (25%) , 가 4 cm
 가 12 4 (33.3%) 가 (8 30%) 10% (8 11%) .<sup>14 20) Perez
 (20%)</sup>

Table 3. Sites of Dstart Failures

Site	number (%)
Para-aortic nodes	21 (52.5)
lung	13 (32.5)
bone	10 (25.0)
liver	4 (10.0)
neck nodes	5 (12.5)
brain	1 (2.5)
others	7 (17.5)
Total	40

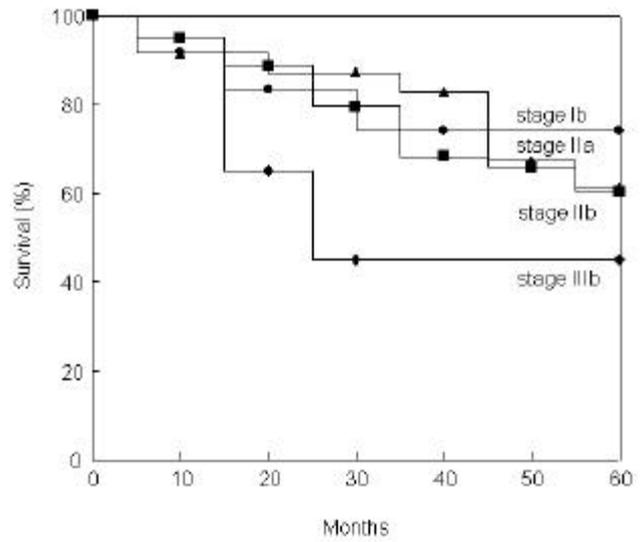


Fig. 1. Five year survival according to FIGO stage.

5 FIGO IB 74%, IIA 67%, IIB 63%, IIIB 45%
 (Fig. 1).

(Table 5). SOMA grade 1 2 4.5%

(7/154), 9.7% (15/154) .
 15 80 32
 10 28 18

Table 4. Risk Factors for Locoregional or Distant Failure

Factor	Locoregional failure			Distant failure		
	failure rate (%)	univariate (p-value)	multivariate (p-value)	failure rate (%)	univariate (p-value)	multivariate (p-value)
Stage						
Ib	25.0			8.3		
IIa	20.8			25.0		
IIb	23.5			26.5		
IIIb	41.2	0.12	ns*	35.3	0.6	ns
Histology						
squamous	25.9			23.8		
nonsquamous	27.3	0.92	ns	54.5	0.03	ns
Tumor size						
<4 cm	19.6			19.6		
≥4 cm	40.4	0.007	0.009	40.4	0.007	0.04
Tumor type						
exophytic	18.3			30.0		
endophytic	36.0			24.0		
infiltrative	26.3			26.3		
superficial	16.7	0.19	ns		0.44	ns
Pelvic L/N in CT						
(-)	23.8			22.2		
(+)	35.7	0.19	ns	42.9	0.02	0.02
preRT Hb						
<12	24.7			33.8		
≥12	27.3	0.71	ns	18.2	0.03	0.07

*not significant (p>0.05)

Table 5. Univariate and Multivariate Analysis of Prognostic Factors

Factor	(n)	5 YSR (%)	Univariate (p-value)	Multivariate (p-value)
Stage				
Ib	(12)	74		
IIa	(24)	67		
IIb	(98)	63		
IIIb	(17)	45	0.17	ns*
Histology				
squamous	(143)	64		
nonsquamous	(11)	36	0.102	ns
Tumor size				
<4 cm	(107)	69		
≥4 cm	(47)	47	0.008	0.02
Tumor type				
exophytic	(60)	63		
endophytic	(50)	62		
infiltrative	(38)	59		
superficial	(6)	83	0.65	ns
Pelvic L/N in CT				
(-)	(126)	64		
(+)	(28)	54	0.25	ns
preRT Hb				
≥12	(77)	55		
<12	(77)	69	0.16	ns

*not significant (p>0.05)

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Abstract

Analysis of Treatment Failure after Curative Radiotherapy in
Uterine Cervical Carcinoma

Gyu Young Chai, M.D., Ph.D.^{*}, Ki Mun Kang, M.D.^{*} and Jong Hak Lee, M.D. Ph.D.[†],

^{*}Department of Therapeutic Radiology, [†]Obstetrics & Gynecology, College of Medicine,
Gyeongsang Institute of Cancer Research, Gyeongsang National University

Purpose: The aim of this study is to analyze the treatment failure patterns and the risk factors for locoregional or distant failure of uterine cervical carcinoma treated with radiation therapy.

Materials and methods: A retrospective analysis was undertaken of 154 patients treated with curative radiation therapy in Gyeongsang National University Hospital from April 1989 through December 1997. According to FIGO classification, 12 patients were stage IB, 24 were IIA, 98 were IIB, 1 were IIIA, 17 were IIIB, 2 were IVA.

Results: Overall treatment failure rate was 42.1% (65/154), and that of complete responder was 31.5% (41/130). Among 65 failures, 25 failed locoregionally, another 25 failed distantly, and 15 failed locoregionally and distantly. Multivariate analysis confirmed tumor size (>4 cm) as risk factor for locoregional failure, and tumor size (>4 cm), pelvic lymph node involvement as risk factors for distant failure.

Conclusion: On the basis of results of our study and recent published data of prospective randomized study for locally advanced uterine cervical carcinoma, we concluded that uterine cervical carcinoma with size more than 4 cm or pelvic lymph node involvement should be treated with concurrent chemoradiation.

Key Words: Cervix cancer, Radiotherapy, Failure pattern