

## IIB :

### Radiotherapy Results of Uterine Cervix Cancer Stage B : Overall Survival, Prognostic Factors, Patterns of Failure and Late Complications

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**Purpose :** Treatment of choice for uterine cervix cancer stage IIB is radiotherapy. We analyzed survivals, prognostic factors, patterns of failure and complications.

**Materials and Methods :** This is a retrospective analysis of 167 patients with stage IIB carcinoma of uterine cervix treated with curative external pelvic and high dose rate intracavitary radiotherapy at the Department of Therapeutic Radiology, Soonchunhyang University Hospital from August 1985 to August 1994. All the patients followed up from 3 to 141 months (mean 60 months) and age of patients ranged from 31 to 78 years at presentation (mean : 55 years).

**Results :** Overall complete response rate was 84%. The response rate for squamous cell carcinoma and adenocarcinoma were 86% and 60%, respectively. Overall 5-years survival rate and disease free survival rate was 62 and 59%, respectively. Mass size and treatment response were significant prognostic factors for survival. Pathologic type and parametrial involvement were marginally significant prognostic factors. Local failure was 43 cases, distant metastasis was 14 cases and local failure plus distant metastasis was 3 cases, and most of local failures occurred within 24 months, distant metastasis within 12 months after treatment. Twenty eight (16.8%) patients developed late rectal and urinary complications. There were tendency to increasing severity and frequency according to increased fractional dose and total (rectal and bladder) dose.

**Conclusions :** Survival rate was significantly related to tumor size and radiotherapy response. Tumor size should be considered in the clinical staging. To increased survival and local control, clinical trials such as decreasing duration of radiotherapy or addition of chemotherapy is needed. To detect early recurrence, regular follow up after RT is important. Because total rectal and bladder dose affected late complications, meticulous vaginal packing is needed to optimize dose of normal tissues and to decrease late complications.

**Key Words :** Cervix cancer, Radiotherapy, Prognostic factor, HDR ICR, Complication

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가 167

가 X-ray  
(IVP: intravenous pyelogram),

1 program . Pap smear screening

1, 2) 2 가

가 가

가 가 4000-5400cGy( 5  
60-65% 5040 cGy)  
53% 78% 180-200cGy 4 4cm

3-8) B 540-600cGy 가

20 가 1-2  
(HDR RALSTRON)  
Tandem Ovoid 1 A  
2 500cGy 6-8 18  
400cGy 7-10 51  
375cGy 8 A  
8000-8200cGy가 16)

9, 10) 가 가

FIGO 가 가

11, 12) 13, 14) 15) 16)

1985 8 1994 8 Foley catheter 7cc 가 가

2 167 3

1985 8 1994 8 FIGO 4-6  
(Federation of Gynecology and Obstetrics Stage Distribution) 2

3 가 6

Co-60 198

RTOG/EORTC Scale <sup>17)</sup>		가		grade 1		grade 2		grade 3		grade 4		
500cGy	14	12	(86 %)		151	129	(85%)		5	3	(60%)	
(Table1).												
2.												
2 5												
62% 59% (Fig. 1, 2). 5												
167 152												
40 90% 50												
119 40 53% 63%												
(p > 0.1), 12g/dL												
56% 66%												
(p > 0.1).												
25% 63% (p > 0.1).												
1 375cGy 400												
Kaplan-Meier rank test Cox-regression cGy, 500cGy 70% 49%, 61%												
SPSS(Statistical Package for the Social Sciences) 160												
63% 가 6 5 5												
1 1 43 0%												
(p=0.0966).												
1 88												
167 157												
10 132 84%												
40 14 13												
(93 %) 40 143												
119 (83%) 가												
12g/ dL 45 35 (78%)												
(88%) 75 66 가												
4cm 81 72 (89%)												
4cm 66 54 (82%)												
131 108 (82%)												
26 24 (92%)												
1 375cGy 98												
78 (80%), 400 cGy 48 42 (88%)												

	No. of patients	CR*	p-value
Age(years)	40	14	13(93)
Size	40	143	119(83)
Hemoglobin	4cm	81	79(89)
	4cm	66	54(82)
Pathology	12g/dL	45	35(78)
	12g/dL	75	66(88)
Parametrial Involvement	squamous	152	129(85)
	adenoca.	5	3(60)
ICR Fx	unilateral	131	108(82)
	bilateral	26	24(92)
ICR Fx	375cGy	95	78(80)
	400cGy	51	42(88)
	500cGy	18	12(86)

\*CR : complete response

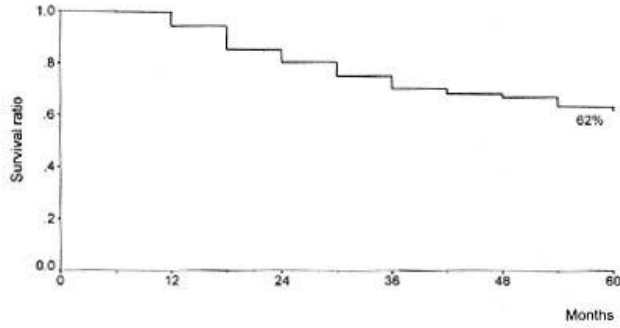


Fig. 1. Actuarial survival rate for patients with stage IIB uterine cervix cancer.

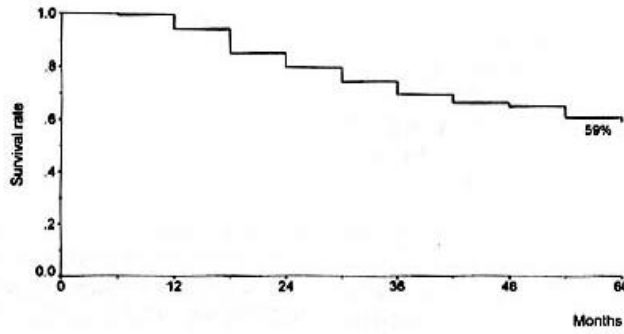


Fig. 2. Actuarial survival rate for patients with stage IIB uterine cervix cancer.

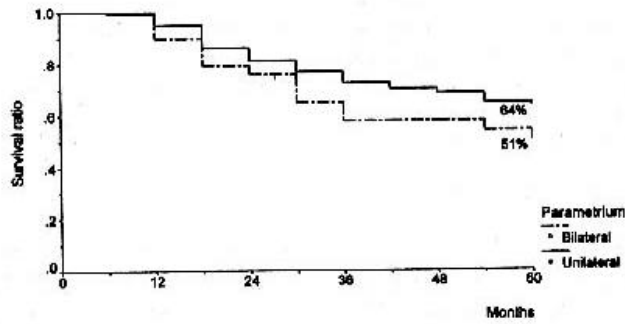


Fig. 3. Survival rate by parametrium involvement for patients with stage IIB uterine cervix cancer.

Fig. 3). 64% 51% (p=0.0894), 3 38 (95%) 3  
 5 1 10 (59%)  
 3 5 29% 14  
 4cm 72% (p=0.0023 Fig. 4), 2 17%  
 52% 가 가 (p=0.0001 Fig. 5), 26 14, 3  
 67% 32% 가 (Table 2). 2 7, 28, 14  
 5). 가 3. 0%, 42%, 0% 2  
 3. 43 67 72 3  
 가 14 가 가 3  
 (Table 3). 2 30(75%)

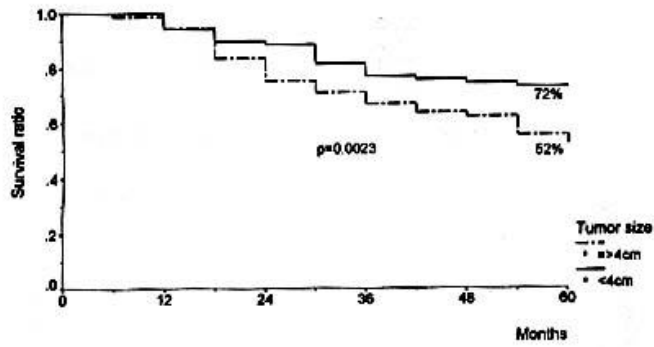


Fig. 4. Survival rate by tumor size for patient with stage IIB uterine cervix cancer.

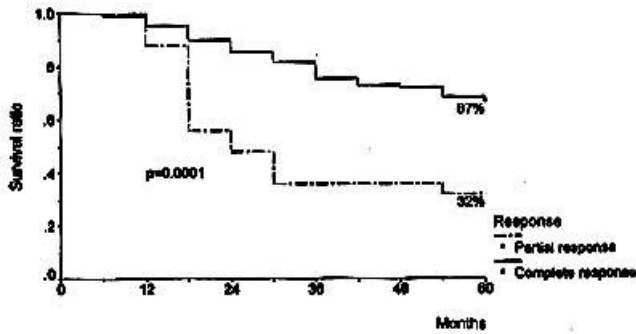


Fig. 5. Survival rate by radiotherapy response for patient with stage IIB uterine cervix cancer.

Table 2. Actuarial Survival by Initial Parameters

Factors	No. of patients(%)	5YSR* (%)	p-value	
			Univariate	Multivariate
Age(years)			0.7694	> 0.05
< 40				
40	15( 9)	53		
Size	152(91)	63	0.0023	0.0022
< 4cm				
4cm	85(54)	72		
Hemoglobin	72(46)	52	0.1873	> 0.05
< 12g/dL				
12g/dL	47(37)	56		
Total dose(A-point)	80(63)	66	0.8578	> 0.05
< 7500cGy				
7500cGy	18(11)	53		
Hypertension	149(89)	63	0.3723	> 0.05
yes				
no	6( 4)	25		
Pathology	160(96)	63	0.0966	> 0.05
squamous				
adenoca	159(96)	63		
Parametrial involvement	6( 4)	0	0.0894	> 0.05
unilateral				
bilateral	138(83)	64		
Response	29(17)	51		
CR <sup>†</sup>	132(84)	67	0.0001	0.0002
PR <sup>‡</sup>	25(16)	32		

\*5YSR : 5 year survival rate, <sup>†</sup>CR: complete response, <sup>‡</sup>PR : partial response

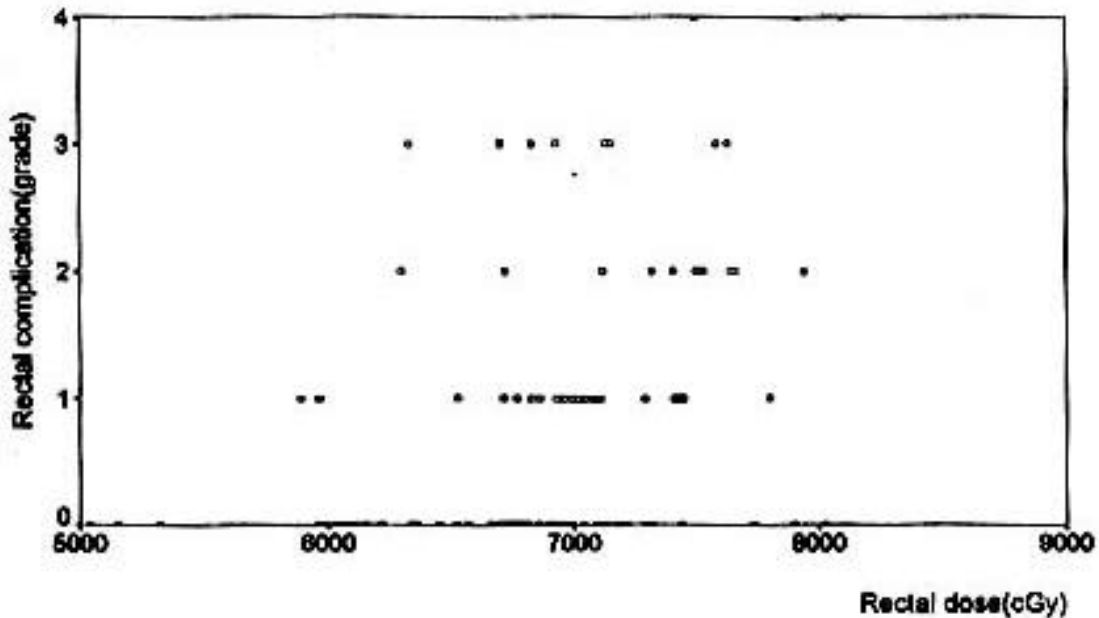


Fig. 6. Scatterplot of rectal complications by rectal dose.

1800cGy 2000cGy 가  
 7 18 , 5 60-65%  
 14 3) 18-39%  
 18-20) 5 53-78%  
 4-8) 12-25%

4.  
 RTOG/EORTC SOMA Scales grade 2 , 12, 21) 가 가  
 28(16.8%) 38  
 1 500cGy  
 18 6 (33%) 가  
 가 grade 3  
 400cGy 375cGy 가 가  
 가

(Table 3). Fig. 6 grade 1-4  
 (Scatterplot)  
 IIB 5 62% ,  
 26%  
 (Fig 1, Table 3).  
 가  
 가 가 13, 14)  
 22-24)

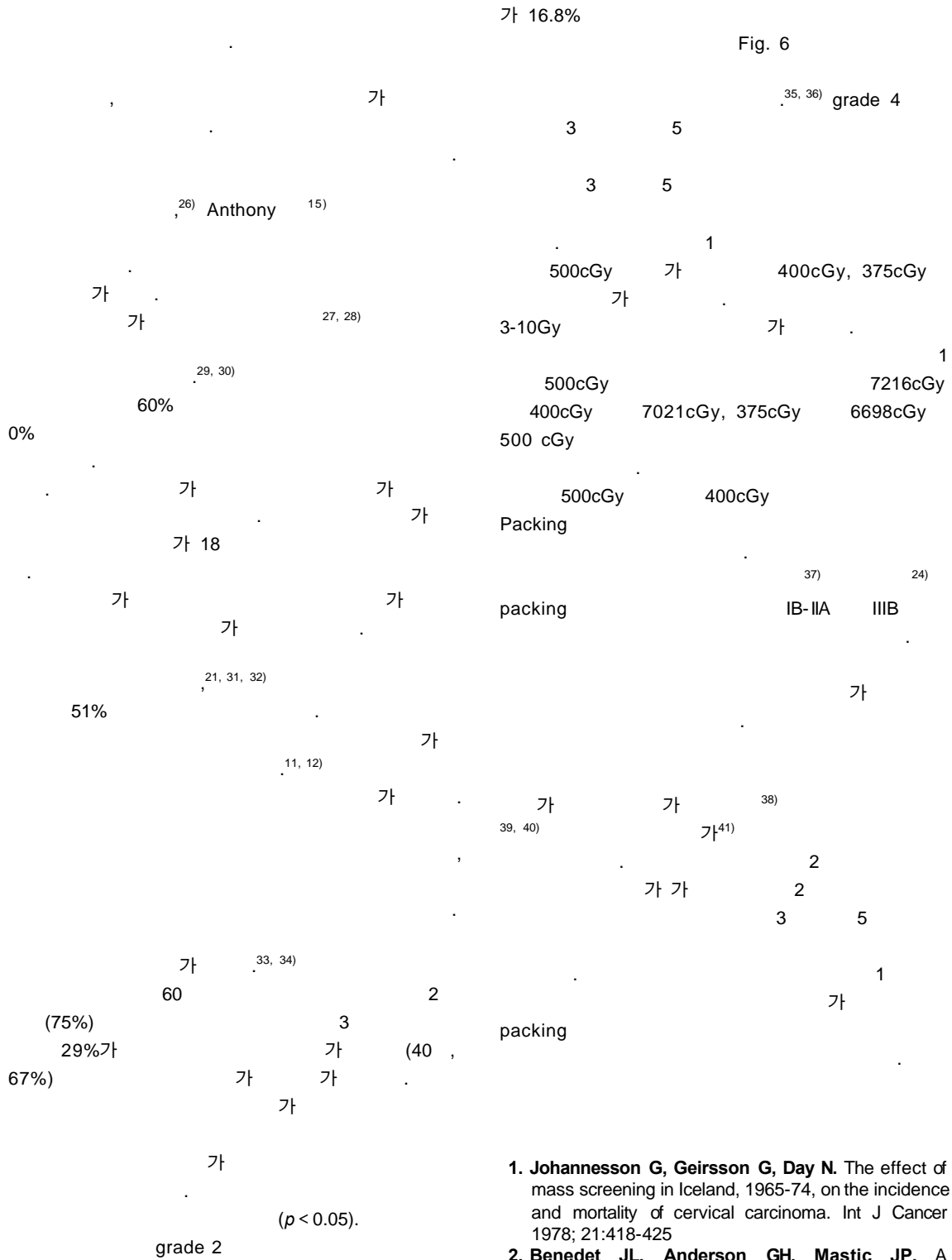
Table 3. Patterns of Failure

	No. of patients	LR* (%)	LR + DM (%)	DM† (%)
Size < 4cm	85	16(19)		8(14)
4cm	72	24(33)	3(4)	6( 8)
Response CR	132	24(18)	3(2)	13(10)
PR	25	17(68)		
Total	167	43(24)	3(2)	14( 8)

\*LR : local recurrence, †DM : distant metastasis

Table 4. Patterns of Complication

	No of patients	Complication No.				
		Grade2	Grade3	Grade4	Total(%)	
Site	Bowel	167	9	8	3	20(12)
	Genitourinary	167	11	5	2	18(11)
ICR Fx	500cGy	18	2	1	3	6(33)
	400cGy	51	4	9	2	15(29)
	375cGy	98	14	3		17(17)





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= =

IIB :

가 , 5 60- 65%

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가

1985 8 1994 8

2 198 가 167

3 141 ( 60 ) 30

31 78 ( 55 )

Kaplan-Meier log-rank test

Cox-regression chi-square 가

linear trend

84%

86%

. 5 5 60%

62% 59%

가 . 57

가 3 29%

28 (16.8%) 38 가 1

가

가

2 2 3 5 가

packing