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\_\_\_\_\_ : 가 ,

\_\_\_\_\_ : 1986 3 1998 12 FIGO IB-IIIB  
 58 , 5

1/2

5

\_\_\_\_\_ : 5 94%, 98% 5% 5  
 IB 97.1%, IIA 100%, IIB 68.9% (p=0.0145) 5  
 97.8%, 60% (p=0.0002) 5  
 97.8% , 33.3% (p=0.0001).  
 3 (5%) RTOG grade 2 , 1 grade 2

\_\_\_\_\_ :  
 가 가

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8 ~ 11) 가

4,5,9,12,13) 5 40 ~

\_\_\_\_\_ : 5 80 ~ 90% 1 ~ 6) 10 ~  
 25% , 7) 60 ~ 90%가 , 4,16 ~ 18)  
 19,20) , 4,20 ~ 22)

(lymphovascular space)  
 가 4,9,24)  
 5 10%<sup>25)</sup>

\_\_\_\_\_ :  
 가

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이 논문은 2003 2 3 2003 6 30 | 채택되었음.  
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가

Table 1. Patient Characteristics

Factors	No. of patients (%)
Age (Yr)	
≤ 40	17 (29.3)
41 ~ 50	25 (43.1)
≥ 51	16 (27.6)
Median : 45	
Stage	
IB	38 (65.5)
IIA	11 (19.0)
IIB	9 (15.5)
Pathology cell type	
Squamous cell carcinoma	54 (93.1)
Adenocarcinoma	4 (6.9)
Depth of stromal invasion	
< 7 mm	17 (29.3)
≥ 7 mm	41 (70.7)
Vaginal resection margin	
Negative	52 (89.7)
Positive	6 (10.3)
Parametrial invasion	
Negative	55 (94.8)
Positive	3 (5.2)
Lymphovascular invasion	
Negative	53 (91.4)
Positive	5 (8.6)
Uterus invasion	
Negative	52 (89.7)
Positive	6 (10.3)
Type of surgery	
TAH & BSO	26 (44.8)
Modified radical hysterectomy	25 (43.1)
Radical hysterectomy & LND	7 (12.1)
Total	58 (100.0)

TAH: Total abdominal hysterectomy, BSO: Bilateral salpingo-oophorectomy, LND: Lymph node dissection

가  
 26 ~ 28)  
 24,29) Stock 23) 가  
 (FIGO I-II) 가  
 5 58%  
 46% 가  
 Gynecology Oncology Group (GOG 92) 가  
 30) 가 (FIGO IB-IIA) 가  
 44%  
 36% 가  
 1986 3 1998 12  
 58  
 1986 3 1998 12  
 155 가  
 58  
 (Table 1).  
 가 4 cm ,  
 1/2 ,  
 31 73 59  
 FIGO IB가 38 , IIA가 11 9 가  
 IIB 9 IB가 가 IB 5 , IIA 2 , IIB 2  
 54 , 4 , 1 4 ,  
 7 mm 17 , 8 mm 41 2 가 3 , 3 4 가 1  
 가 6 ,  
 가 3 4 ~ 6 53  
 가 5 , 6 가  
 26 , (modified radical hysterectomy 4400 ~ 5040 cGy ( : 5040 cGy) 5 ,

1 180 cGy 4 58 1 (2%)

Table 2. Characteristics of Patients with Recurrence

Case	Age	FIGO stage	Risk factors	Site of Recurrence/Time to failure
1	62	IIB	Vagina resection margin (+) Parametrial invasion	Vagina/14 months
2	40	IB	Deep stroml invasion	Bone/22 months
3	73	IIB	Vaginal resection margin (+) Parametrial invasion	Lung/14 months
4	46	IIA	Deep stromal invasion	Liver/7 yrs

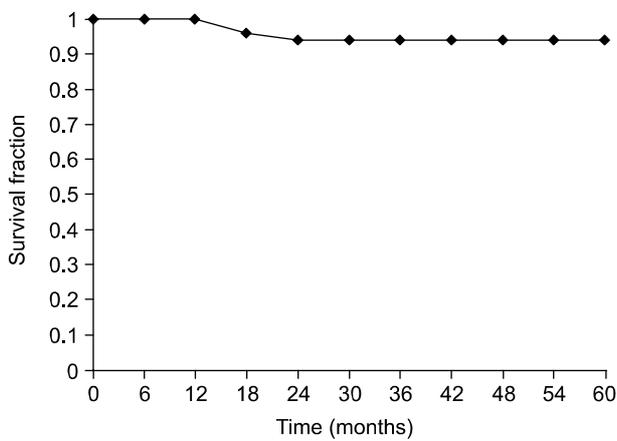


Fig. 1. Actuarial disease-free survival, for all patients.

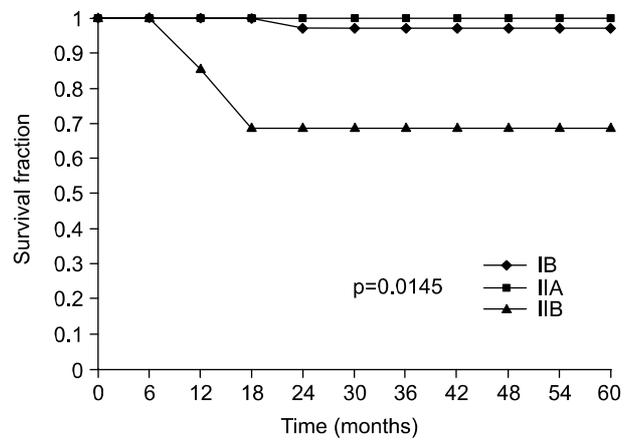


Fig. 2. Disease-free survival by stage.

(4680 ~ 5040 cGy) 2  
Cs-137  
5 mm 4488 ~ 4932 cGy 14  
(4500 cGy) 31  
57 45  
6 1, 2  
3, 3 6  
Kaplan-Meier 5  
log rank test  
Cox proportional hazard regression  
1 3 108  
44

(Table 2) 98%  
3 (5%)  
1  
5  
94% (Fig. 1).  
(Table 3) 40 92.7%, 41 ~  
55 가 100%, 56 85.6% 가  
(p=0.2119). FIGO 5 IB  
가 97.1%, IIA 100%, IIB 68.9%  
(p=0.0145, Fig.  
2).  
93.9%, 100% 가  
(p=0.665).  
94.7%, 8 mm 93.3% 가  
(p=0.0804).  
97.8%, 60.0% 가

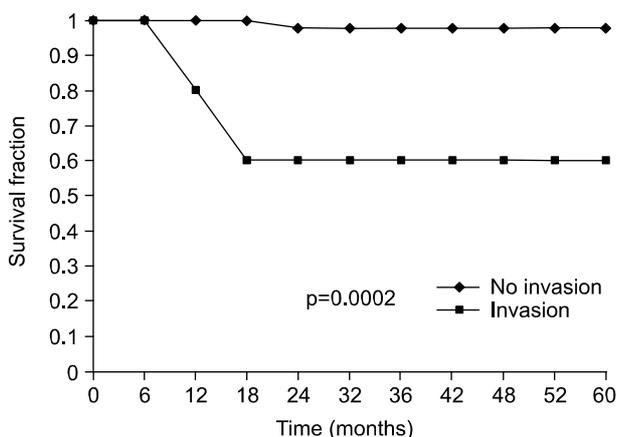


Fig. 3. Disease-free survival for patients with positive vaginal resection margin compared to those with negative margin.

(p=0.0002, Fig. 3).

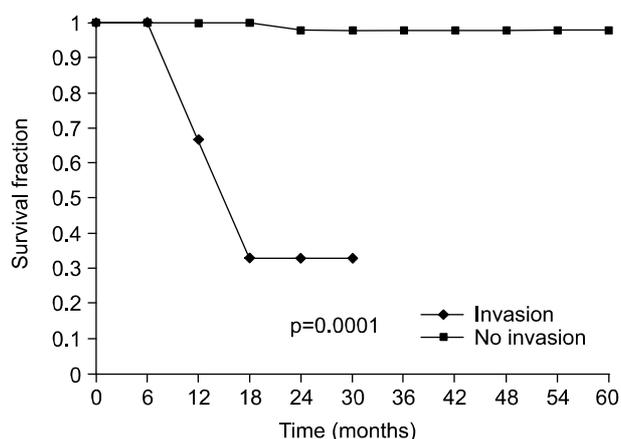


Fig. 4. Disease-free survival for patients with parametrial invasion compared to without parametrial invasion.

가 97.9%, 33.3% (p=0.0001, Fig. 4).

5 가 . 가 , (p=0.9972), (p=0.5486) , (p=0.0489) 가 (Table 4). 58 10

가 9 가 (48 ~ 84 ) , 1 (2%) grade 2

Factors	No. of patients	5-year DFS (%)	p value
3 (5%) grade 2			
Table 3 Actuarial 5-year Disease-free Survival by Clinical and Pathological Characteristics			
Age (Yr)			
≤ 1	17	92.9	
41 ~ 5	25	100	
≥ 6	16	85.6	0.2119
Stage (FIGO)			
IB	38	97.1	
IIA	11	100	
IIB	9	68.9	0.0145
Pathology cell type			
Squamous cell carcinoma	54	93.9	
Adenocarcinoma	4	100	0.665
Degree of stromal invasion			
< 1 mm	17	94.7	
≥ 1 mm	41	93.3	0.9804
Vaginal resection margin			
Negative	52	97.8	
Positive	6	60.0	0.0002
Parametrial invasion			
Negative	55	97.9	
Positive	3	33.3	0.0001
Lymphovascular invasion			
Negative	53	93.7	
Positive	5	100	0.568
Uterus invasion			
Negative	52	93.6	
Positive	6	100	0.5545
Method of surgery			
TAH & BSO	26	91.5	
Modified radical hysterectomy	25	95.5	
Radical hysterectomy & LND	7	100	0.8068
Total	58	94	

DFS: Disease-Free Survival, TAH: Total abdominal hysterectomy, BSO: Bilateral salpingo-oophrectomy, LND: Lymph node dissection

Table 4. Multivariate Analysis of Prognostic Factors

Factors	p value
Stage	0.9972
Vaginal resection margin	0.5486
Parametrial invasion	0.0489





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*Abstract*

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## Adjuvant Postoperative Radiation Therapy for Carcinoma of the Uterine Cervix

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**Purpose:** This study was undertaken to evaluate the efficacy of postoperative radiotherapy, and to investigate the prognostic factors for FIGO stages IB-IIIB cervical cancer patients who were treated with simple hysterectomy, or who had high-risk factors following radical hysterectomy and pelvic lymph node dissection.

**Materials and Methods:** Between March 1986 and December 1998, 58 patients, with FIGO stages IB-IIIB cervical cancer were included in this study. The indications for postoperative radiation therapy were based on the pathological findings, including lymph node metastasis, positive surgical margin, parametrial extension, lymphovascular invasion, invasion of more than half the cervical stroma, uterine extension and the incidental finding of cervix cancer following simple hysterectomy. All patients received external pelvic radiotherapy, and 5 patients, received an additional intracavitary radiation therapy. The radiation dose from the external beam to the whole pelvis was 45 ~ 50 Gy. Vagina cuff irradiation was performed, after completion of the external beam irradiation, at a low-dose rate of Cs-137, with the total dose of 4488 ~ 4932 chy (median: 4500 chy) at 5 mm depth from the vagina surface. The median follow-up period was 44 months (15 ~ 108 months).

**Results:** The 5-yr actuarial local control rate, distant free survival and disease-free survival rate were 98%, 95% and 94%, respectively. A univariate analysis of the clinical and pathological parameters revealed that the clinical stage ( $p=0.0145$ ), status of vaginal resection margin ( $p=0.0002$ ) and parametrial extension ( $p=0.0001$ ) affected the disease-free survival. From a multivariate analysis, only a parametrial extension independently influenced the disease-free survival. Five patients (9%) experienced Grade 2 late treatment-related complications, such as radiation proctitis (1 patient), cystitis (3 patients) and lymphedema of the leg (1 patient). No patient had grade 3 or 4 complications.

**Conclusion:** Our results indicate that postoperative radiation therapy can achieve good local control and survival rates for patients with stages IB-IIIB cervical cancer, treated with a simple hysterectomy, as well as for those treated with a radical hysterectomy, and with unfavorable pathological findings. The prognostic factor for disease-free survival was invasion of the parametrium. The prognostic factor identified in this study for treatment failure can be used as a selection criterion for the combined treatment of radiation and chemotherapy.

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Key Words: Cervix cancer, Surgery, Radiotherapy