

1)

SCC

*, †, ‡
*†, *, ‡

: SCC
: 1991 1997 SCC
181 가

: SCC 1.5ng/ml 71 91%, 2.5ng/ml 57 91%
가 5 IB- A 79.2%, B 68.7%, 33.4%, 0% 5
가 5ng/ml 34% 1.5ng/ml, 1.5 5ng/ml 55 62%
가 1 13 (4.8) 가
가 (r=-0.266) SCC
: SCC

: SCC , ,

.⁴⁾ SCC 가

,^{5, 6)}
.^{6, 7)}
8)

cell carcinoma antigen(SCC)
(subfraction)가 TA-4 Kato Torigoe¹⁾ , 14 ,⁹⁾
가 SCC ,¹⁰⁾

SCC

가 ,
²⁾

가

³⁾

1985 5 1997 6

1998
1999 3 8 1999 4 16

24

SCC 1991 RIABEAD kit 965
 95%가 1.5ng/ml
 1.5ng/ml
 가 2.5ng/ml
 Kaplan-Meier
 log-rank
 Cox regression
 Mann-Whitney test
 3 Kruskal-Wallis
 Pearson
 P 0.01
 SPSS 7.5
 27 85 (58)
 가 FIGO IB-IIA
 가 가
 IV
 SCC 2 15 (5
) 118 63
 1991
 Table 2
 SCC
 가 가 가 가 (Kruskal-Wallis,
 $X^2=23.162, DF=3, P<0.001$), 가 3cm
 가 (Mann-Whitney, $P<0.001$). SCC
 1.5ng/ml 71 91%
 2.5ng 57 91%
 5 IB-IIA 79.2%, IIB 68.7%, III 33.4%,
 IV 0% (Fig. 1).

(Table 1). SCC

Table 2

Table 1. Patient Characteristics

Characteristics	No. of Patients (Total No.=181)	(%)
Age (years)	27 85 (median=58)	
<50	47	(26.0)
50	133	(74.0)
Clinical Stage		
IB-IIA	34	(18.8)
IIB	80	(44.2)
III	54	(29.8)
IV	13	(7.2)
Pathology		
squamous cell keratinizing	47	(26.0)
non keratinizing	88	(48.6)
small cell	3	(1.7)
not specified	38	(21.0)
adenocarcinoma	5	(2.8)
Tumor size		
<3 cm	65	(35.9)
3 cm	6	(64.1)

Table 2. Pre-treatment Serum SCC Antigen Levels by Stage Group

Stage	No.	+ No. (1.5 ng/ml) ^a	Mean (ng/ml)	+ No. (2.5 ng/ml) ^a
IB-IIA	14	10 (71.4) ^a	3.54 (3.28) ^b	8 (57.1)
IIB	54	42 (77.8)	10.30 (15.03)	39 (72.2)
III	39	34 (87.2)	24.78 (39.64)	32 (82.1)
IV	11	10 (90.9)	71.88 (68.66)	10 (90.9)
Total	118	96 (81.4)		89 (75.4)

^a: number of patients with serum SCC antigen above cutoff value 1.5 ng/ml or 2.5 ng/ml, (^a): percent, (^b): standard deviation

2 : SCC

SCC 가 57
 1.5ng/ml 가 7/ 23(30%), 1.5
 5ng/ml가 8/28(29%) 5ng/ml 42/67(63%)
 (B). 2.5ng/ml
 2.5 9/29(31%), 2.5 5 6/22(27%)
 가 2.5ng/ml
 2.5 5.0 ng/ml
 5.9ng/ml (Fig. 2,
 2.5ng/ml) 1.5ng/ml

SCC 1 13
 4.8
 SCC 0.11 140.90 ng/ml,
 13.084ng/ml, 5.11ng/ml 1.5ng/ml
 78%, 2.5ng/ml 70%
 10
 17.1ng/ml 가
 3.1ng/ml 가
 5ng 가 10ng/ml
 가

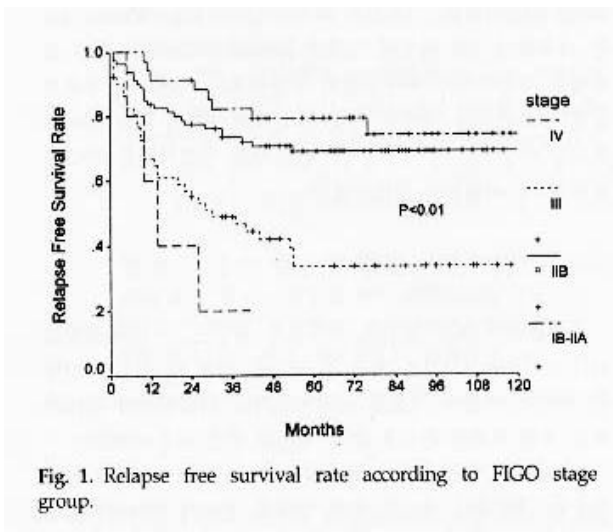


Fig. 1. Relapse free survival rate according to FIGO stage group.

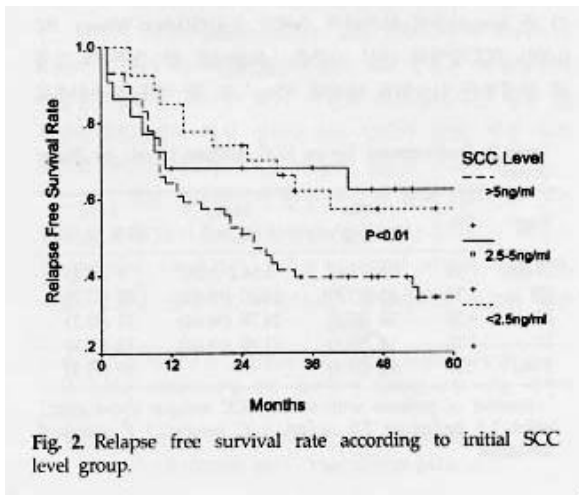


Fig. 2. Relapse free survival rate according to initial SCC level group.

SCC
 가
 1.68ng/ml 2.5
 가 3.52ng/ml
 SCC
 가
 가 $r = -0.178$

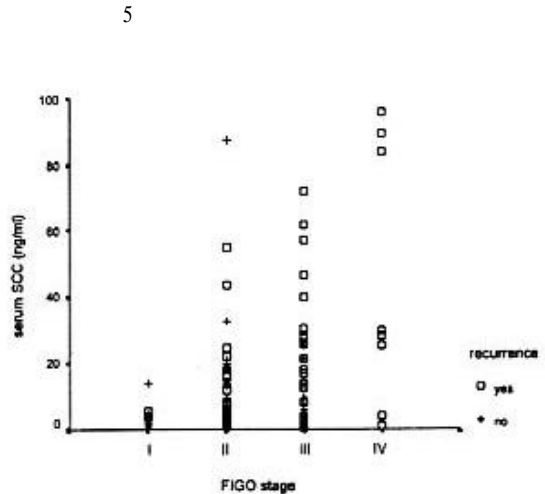


Fig. 3. Initial SCC level by stage and recurrence status.

57 21
 SCC
 36

가 가
 가 가 3
 가 가
 3cm SCC
 (P<0.01).
 SCC
 Fig.
 SCC
 Fig. 4
 (r=-0.178,
 (Pearson
 P>0.01)
 r=-0.266)

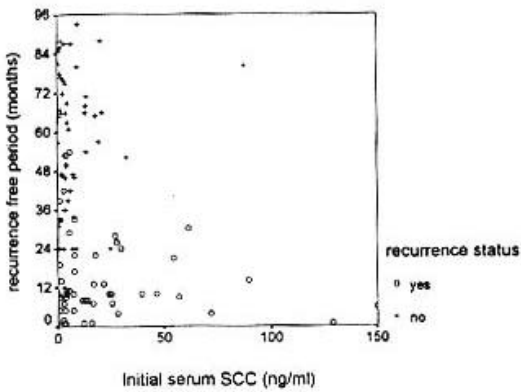


Fig. 4. Relation between initial serum level and recurrence free period.

Table 3. Relapse Patterns according to Initial Serum SCC Antigen and Stage

Stage	SCC< 1.5 ng/ml	SCC 1.5 - 5 ng/ml	SCC> 5 ng/ml	Total
IB-IIA	1/4	1/8	1/2	3/14 (21.4)
IIB	2/13	3/12	13/29	18/54 (33.3)
III	3/5	4/8	18/26	25/39 (64.1)
IV	1/1		10/10	11/11 (100.0)
Total	7/23 (30.4)	8/28 (28.6)	42/67 (62.7)	57/118 (48.3)

* : All the cases with stage IVB regarded as relapses,
 () : percent

SCC 가
 1.5ng/ml 4
 1.63 2.19ng/ml
 IIB 1
 2.35 가
 SCC
 Fig.
 SCC
 가 6.97ng/ml IIB
 2 3ng/ml
 SCC
 IIB
 2.04ng/ml 가
 2
 가 가
 4.15 7.91ng/ml SCC
 1.5ng/ml 1.87 19.9ng/ml
 SCC
 가 2
 가 11.3 12.25ng/ml
 SCC
 (P=0.065), SCC
 (Table 4,
 P=0.008).

Kato 1) SCC
 가 . Maruo 11) 36
 2 (5.5%) 2.5ng/ml 가가

Table 4. Multivariate Analysis according to Relapse-Free Survival

Variables	B	SE	R	Exp ()	Significance
Stage	0.3859	0.2090	0.0538	1.4709	0.0650
Tumor size	0.5370	0.3567	0.0234	1.7109	0.1222
Initial SCC level	0.0095	0.0036	0.1018	1.0095	0.0080
Pathology	0.1040	0.0996	0.0000	1.1095	0.2969

2 : SCC

63 37 (59%)가 가
 가 가
 . Senekjian ¹²⁾ 2.0ng/ml ¹⁶⁾ , , 가 가
 1.8% 가 , ¹⁷⁾ 가 가
 SCC . Crombach ²⁾ SCC

Abbott 2442
 1.5ng/ml
 95%가 1.5ng/ml 0 I 26%, II 62%, III 90%, SCC 가
 86%, 22%가 (,) 가
 , 5ng/ml 100%가 SCC
 10%, 38%, 60%, 72% 가 . Stenman ¹⁸⁾
 가 5ng/ml 0% SCC mRNA
 , Crombach ²⁾ 가
 (Grade 1=78%, Grade 2=67%)
 (Grade 3) 38%
 . Holloway ⁵⁾ 2.4ng/ml 가 . Ueda ¹⁶⁾ Maruo ¹¹⁾
 I 40%, II 78%, III 75%, IV 100%가
 , Rose ¹³⁾ 2.5ng/ml
 IB-IIA 25%, IIB 63%, III 67%, 71%
 Takeshima ¹⁴⁾ 4.0ng/ml , Bae ¹⁰⁾ 2.0ng/ml 5 IB- IIA
 71 91% 79.2%, IIB 68.7%, III 33.4%, IV 0% SCC
 , IB- IIA 72.8%, ¹⁹⁾
 (Table 2) IIB 59%, ²⁰⁾ IIIB 38% () ²¹⁾
 1.5ng/ml 2.5ng/ml 가 가
 1.5 2.5ng/ml
 가 63 75% ^{22, 23)}
 가 1.5ng/ml 가 .
 가 SCC 가 ^{22 25)}
 가 3cm
 가 가
^{5, 15)}
 Ngan ⁷⁾ 가 SCC
 Kim ⁹⁾ MRI 2 7 SCC ²⁶⁾ 1
 3 SCC 가
 SCC (4.8)
 SCC SCC 5
 가 5
 가 가 가

Scambia ²⁶⁾ 가 2
 , Rose ¹³⁾
 가 8.5, 2.9ng/ml 2
 2.2, 0.8ng/ml 가
 SCC 가 SCC 가
 가 가가 가
 SCC 가 가
 가 Takeshima ¹⁴⁾ 4ng/ml
 가 Duk ²⁷⁾
 Massuger ²⁸⁾ 가 5ng/ml 가
 가 가
 Avall-Lindqvist ²⁹⁾
 SCC 5 16 가
 Scambia ²⁶⁾ 가 5ng/ml 15%
 Ngan ⁷⁾
 2 10ng/ml
 Pastner ³⁰⁾ 가
 Bolger ³¹⁾ 가
 가 가 Holloway ³²⁾ 가
 가 3.7 5.0ng/ml 가
 1.5ng/ml , 1.5 5ng/ml 2.5ng/ml
 5ng/ml Rose ¹³⁾ 가
 (Fig. 2).
 SCC 가 가 가
 (Table 4) 가 SCC 가
 가 가 SCC 가
 SCC 가 SCC
 2 가 가 4.15, 7.91ng/ml 2 6
 SCC
 가 1.5ng/ml 1.87ng/ml
 가 2.5ng/ml CEA
 18.9ng/ml 가 ^{10, 31, 33)}
 가 가 SCC 가

가
 28) IIB
 가
 가
 가
 SCC
 1) SCC 2.5ng/ml 가
 5ng/ml
 2) SCC 가
 3) 5
 가
 가 가
 가
 SCC 가

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Abstract

A Study of Relationship between the Level of Serum SCC Antigen and Recurrence Patterns after Treatment of Uterine Cervix Cancer

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Purpose : Serum squamous cell (SCC) antigen levels were examined in uterine cervix cancer undergoing radiation therapy, and authors analyzed the relationship between SCC antigen levels and treatment results.

Materials and Methods : This is a retrospective study of 181 cervical carcinoma patients who received radiotherapy and examined serial serum SCC antigen from 1991 to 1997 at Soonchunhyang University Hospital. One hundred and eighteen patients underwent SCC antigen evaluation at diagnosis. The relationship between the serum tumor marker level and disease free survival, recurrence pattern, and other prognostic factors were analyzed according to various statistical methods.

Results : The positivity rate (initial serum value above 2.5 ng/ml) was increased with FIGO stage (IB- A 57% to IV 91%) and more discriminative than cutoff value of 1.5 ng/ml. Five year disease free survival rates for the stage IB-IIA, IIB, III and were 79.2%, 68.7%, 33.4% and 0%, respectively. The 5-year disease free survival rate for patients with serum SCC antigen levels above 5.0 ng/ml was 34% versus 55-62% for patients with normal range (<1.5 ng/ml) or mildly elevated levels (1.5-5.0 ng/ml). Rising SCC antigen levels preceded the clinical detection of disease by a mean of 4.8 months (range 1-13 months). Negative linear correlation was observed between initial SCC antigen levels and relapse free survival ($r=-0.226$), and by multivariate analysis, initial SCC antigen level had a large impact on the relapse free survival.

Conclusions : SCC antigen assay is a useful aid to predict the prognosis of squamous cell carcinoma of the uterine cervix and to detect recurrence.

Key Words : Serum SCC antigen, Cervix cancer, Radiation therapy, Recurrence

