

## SCCA CA 125

=Abstract=

### The Efficacy of Tumor Markers SCCA and CA 125 in Patients with Squamous Cell Carcinoma of Uterine Cervix

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To evaluate the efficacy and diagnostic and prognostic significance of two tumor markers (SCCA, CA 125) in patient with squamous cell carcinoma of uterine cervix, the authors studied 215 patients with squamous cell carcinoma in situ and invasive carcinoma from September 1993 to November 1996. Both tumor markers were measured coincidentally in 215 patients preoperatively and in 70 cases of benign gynecologic disease for control group. Serum SCCA level of 2.5 ng/ml and CA 125 level of 35.0 U/ml were determined as cut-off levels.

The results were as follows:

1. The pretreatment positive rate of SCCA in patient group were 35.8 % (77/215) and 5.7 % (4/70) in control group.

2. The mean values and positive rates of SCCA according to clinical stage were  $1.44 \pm 3.59$  ng/ml (8.7 %) for stage 0,  $3.81 \pm 10.22$  ng/ml (23 %) for stage I,  $8.54 \pm 15.23$  ng/ml (51.3 %) for stage II,  $35.54 \pm 38.34$  ng/ml (70.0 %) for stage III,  $22.49 \pm 36.06$  ng/ml (75.0 %) for stage IV,  $40.33 \pm 58.66$  ng/ml (66.7 %) for recurrent cancer, respectively.

The mean SCCA value and positive rate were significantly increased stepwise by clinical stage from stage I to stage III ( $P < 0.05$ ).

3. The pretreatment positive rate of CA 125 in patient group were 21.9 % (47/215) and 17.1 % (12/70) in control group.

4. In pre-invasive and invasive groups, the mean value and positive rate of SCCA were  $1.44 \pm 3.59$  ng/ml (8.7 %),  $9.05 \pm 25.26$  ng/ml (43.2 %), respectively, and it was statistically significant between two groups ( $P < 0.05$ ). The mean values and positive rate of CA 125 were  $24.36 \pm 16.14$  U/ml (10.9 %),  $35.15 \pm 59.52$  U/ml (24.9 %), respectively, it was not statistically significant ( $P > 0.05$ ).

5. The result of preoperative serum levels of SCCA can be characterized by 35.8 % sensitivity, 94.3 % specificity, 95.1 % positive predictive value, 32.4 % negative predictive value,

**Keywords:** Squamous cell carcinoma of cervix, squamous cell carcinoma antigen, CA 125.

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100 SCC

125I labeled antibody solution 0 8.7 %, I 23.1 %, II 51.3

SCC antibody coated bead 가 90 %, III 70.0 %, IV 75.0 %

200 rpm 3 66.7 % ,

0 1.44 ± 3.59 ng/ml, I

3.81 ± 10.22 ng/ml, II 8.54 ± 15.23 ng/ml,

CA 125 Centoco Laboratories III 35.54 ± 38.34 ng/ml, IV 22.49 ±

kit(Centoco CA 125-RIABEAD) 36.06 ng/ml,

100 40.33 ± 58.66 ng/ml I III

가 가

125I anti-CA 125 CA 125 antibody 가 (P < 0.05)(Table 2).

coated bead 16-24 CA 125 0, I,

3 II, III IV 10.9 %, 16.9 %, 20.5 %,

1 50.0 % 75.0 % ,

가 58.3 % , SCC

CA 125 가 가

SCC CA 125 2.5 ng/ml (Fig. 1), 0

35 U/ml , 24.36 ± 16.14 U/ml, I 26.57 ± 45.66 U/ml, II

Student t-test Chi-square test . 33.57 ± 64.38 U/ml, III 45.54 ±

28.30 U/ml, IV 180.87 ± 232.12 U/ml ,

65.13 ± 60.51 U/ml

(Table 3).

( )

SCC 215

77 2.5 ng/ml 35.8 % , SCC

5.7 %(4/70) 8.7 % 43.2 % ,

7.12 ng/ml 0.88 1.44 ± 3.59 ng/ml 9.05 ± 25.26 ng/ml

ng/ml 가 (p < SCC

0.01). 가 (P < 0.05)(Table

CA 125 21.9 %(47/215), 4), CA 125

17.1 %(12/70) 10.9 % 24.9 %, 24.36 ± 16.14

31.95 U/ml 30.25 U/ml U/ml 35.15 ± 59.52 U/ml

가 (P > 0.05)(Table 1). (P > 0.05)(Table 5).

Table 1. Mean serum levels of SCCA & CA 125

	No.	SCCA > 2.5 ng/ml(%)	SCCA(ng/ml)* Mean ± SD	CA 125 > 35 U/ml(%)	CA 125(U/ml)** Mean ± SD
Control group	70	4( 5.7 %)	0.88 ± 0.53	12(17.1 %)	30.25 ± 57.67
Study group	215	77(35.8 %)	7.12 ± 22.12	47(21.9 %)	31.95 ± 66.35

\* , P < 0.01, \*\*, P > 0.05

Table 2. Serum SCCA related to stage of squamous cell carcinoma

Stage of disease	No. cases	SCCA level* > 2.5ng/ml(%)	SCCA range(ng/ml)	Mean $\pm$ SD(ng/ml)
0	46	4( 8.7%)	0.07 20.25	1.44 $\pm$ 3.59
I	65	15(23.1%)	0.08 60.03	3.81 $\pm$ 10.22
II	78	40(51.3%)	0.44 65.72	8.54 $\pm$ 15.23
III	10	7(70.0%)	1.23 133.34	35.54 $\pm$ 38.34
IV	4	3(75.0%)	5.24 135.0	22.49 $\pm$ 36.06
Recurrence	12	8(66.7%)	0.43 155.1	40.33 $\pm$ 58.66
Total	215	77(35.8%)	0.07 155.1	7.12 $\pm$ 22.12

\*: P &lt; 0.05

Fig. 1. Elevation of serum tumor makers before treatment

Table 3. Serum CA 125 related to stage of squamous cell carcinoma

Stage of disease	No. cases	CA 125 level > 35U/ml(%)	CA 125 range(U/ml)	Mean $\pm$ SD(U/ml)
0	46	5(10.9%)	0.95 42.00	24.36 $\pm$ 16.14
I	65	11(16.9%)	5.52 312.00	26.57 $\pm$ 45.66
II	78	16(20.5%)	6.88 480.00	33.57 $\pm$ 64.38
III	10	5(50.0%)*	14.02 102.50	45.54 $\pm$ 28.30
IV	4	3(75.0%)*	54.88 495.00	180.87 $\pm$ 232.12
Recurrence	12	7(58.3%)*	0.88 488.00	65.13 $\pm$ 60.51
Total	215	47(21.9%)	0.88 495.00	31.95 $\pm$ 71.43

\*: P &lt; 0.05

Table 4. Serum SCCA levels in patients with squamous cell carcinoma

	No.	> 2.5ng/ml*	Mean $\pm$ SD(ng/ml)**
Pre-invasive	46	4( 8.7%)	1.44 $\pm$ 3.59
Invasive	169	73(43.2%)	9.05 $\pm$ 25.26

Pre-invasive=carcinoma in situ

\*, \*\*: P < 0.05

Table 5. Serum CA 125 levels in patients with squamous cell carcinoma

	No	> 35.0U/ml*	Mean $\pm$ SD(U/ml)**
Pre-invasive	46	5(10.9%)	24.36 $\pm$ 16.14
Invasive	169	42(24.9%)	35.15 $\pm$ 59.52

\*, \*\*: P > 0.05

SCC CA 125  
, , ,  
SCC 35.5  
%, 95.2 %, 97.1 %, 80.4 %, 45.5 % CA 125  
18.9 %, 80.3 %, 77.2 %, 79.5 %, 34.2 %  
(Table 6).  
가 , 215  
SCC CA 125  
18.6 %(40/215) , SCC  
CA 125 17.2 %(37/215), SCCA  
CA 125가 3.3  
%(7/215) 가

Table 6. Evaluation of SCCA and CA 125 positivity criteria in patients with squamous cell carcinoma

Quality index	SCCA(> 2.5ng/ml)	CA 125(> 35U/ml)
Sensitivity	35.8%(77/215)	21.9%(47/215)
Specificity	94.3%(64/70)	82.8%(12/70)
Positive predictive value	95.1%(77/81)	79.7%(47/59)
Negative predictive value	32.4%(66/204)	25.7%(58/226)
Diagnostic efficiency*	49.5%(141/285)	36.8%(105/285)

\* Diagnostic efficiency=True positive + True negative/Total patients with or without disease

60.9 %(131/215) SCC CA 125  
가 84 39.1  
% (Table 7).

Table 7. Combination assay of SCCA and CA 125 in 215 patients with squamous cell carcinoma

	SCCA(+)(%)	SCCA(-)(%)	Total
CA 125(+)	40(18.6%)	7(3.3%)	47(21.9%)
CA 125(-)	37(17.2%)	131(60.9%)	168(78.1%)
Total	77(35.8%)	138(64.2%)	215(100%)

SCC Kato Torigoe9  
48,000 dalton TA-4 ,  
,1)  
가 , ,  
.310  
SCC  
1.5 ng/ml 2.5 ng/ml  
, 가 96 % 2.0 ng/ml  
,12-17) Mauro 2)



, SCC  
가 8.7 % 43.2 %  
1.44 ng/ml 9.05 ng/ml , Holloway  
11) (CIN: 19.4 %, : 53.3 %)  
(p < 0.05), CA 125 , CA 125  
가  
가 Rose 13)  
SCC 가  
가, 1993 9 1996 11  
, Duk 8)  
SCC 238  
, CA 125, CEA 가  
가  
215  
Senekjian 17) 70 SCC  
CA 125 가  
SCC  
가 4, 5  
가  
FIGO(International  
Federation of Gynecology and Obstetrics)  
, 215  
0 46 , I 65 , II 78 , III 10 ,  
IV 가 4  
가 12  
가  
SCC CA 125 66.7 % 58.3 %  
40.33 ± 58.66 ng/ml 65.18 ± 60.51  
U/ml SCC CA 125  
, Kato ,21)  
14) Holloway 11) 83.3 %, 54.9 %  
2.5 ng/ml, CA 125 35.0 U/ml  
45 %  
SCC CA 125  
, ,  
, SCC CA 125  
, SCC  
CA 125 35.8  
% 21.9 % 가  
가 가 39.1 %  
SCC CA 125  
0 8.7 %, I 23.1 %, II  
51.3 %, III 70.0 %, IV 75.0 %  
66.7

% SCC 0 1.44 ±  
3.59 ng/ml, I 3.81 ± 10.22 ng/ml, II  
8.54 ± 15.23 ng/ml, III 35.54 ± 38.34 ng/ml,  
IV 22.49 ± 36.06 ng/ml,

40.33 ± 58.66 ng/ml II  
IV I 가 가  
(P < 0.05).

3. CA 125 215 47 (21.9 %)  
0  
10.9 %, I 16.9 %, II 20.5 % III  
50.0 % IV 75.0 %

가  
I , II  
58.3 %

0 24.36 ± 16.14 U/ml, I  
26.57 ± 45.66 U/ml, II 33.57 ± 64.38  
U/ml, III 45.54 ± 28.30 U/ml, IV  
180.87 ± 232.12 U/ml

65.13 ± 60.51 U/ml  
4. SCC

8.7 % 43.2 %  
1.44 ± 3.59 ng/ml 9.05 ± 25.26 ng/  
ml (P  
< 0.05), CA 125

5. SCC CA 125 , ,

SCC 35.8 %, 94.3 %, 95.1 %, 32.4 %, 49.5 % , CA 125 21.9 %, 82.8 %, 79.7 %, 25.7 %, 36.8 % .

6. 가 , 215  
SCC CA 125  
18.6 % (40/215) , SCC

CA 125 17.2 % (37/215), SCCA  
CA 125가 3.3  
% (7/215) 가

60.9 % (131/215) SCC CA 125  
가 84 39.1  
%

SCC CA 125

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SCC , CEA CA-125  
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