

## The Validity of CAPRA Score in Korean Patients

**Introduction and Objective:** It is difficult to classify the risk of treatments or procedures for prostate cancer patients with only the stage of prostate cancer. The validity of University of California San Francisco Cancer of the Prostate Risk Assessment score (UCSF CAPRA score, 2005) was evaluated when it was applied to the Korean prostate cancer patients.

**Materials and Methods:** The subjects were 203 patients who had radical prostatectomy due to prostate cancer between February 1997 and April 2010 and they were observed longer than 12 months. CAPRA score was calculated in 114 patients among them possessing information about the age, clinical stage, preoperative PSA, biopsy Gleason score, the positive rate of the biopsy (table 1). Biochemical recurrence was referred to the PSA value being greater than 0.2 repetitively with least 4 weeks intervals. Cox proportional hazard model was used to test the variables of CAPRA score for the biochemical recurrence and Kaplan-Meier analysis were used to analyze the 5 year disease-free survival rate using CAPRA score.

**Results:** Table 2 shows the test result of the variables of CAPRA score for the biochemical recurrence. Table 3 shows the 5-year disease-free survival rate when CAPRA score was classified into 7 groups. The 5-year disease-free survival rates were significantly reduced in the CAPRA score 4 point group and in the CAPRA score 7-10 point groups comparing to the CAPRA 0-1 groups. However, the significance did not occur in the CAPRA score 2, 3, 5 and 6 groups. CAPRA score was able to predict biochemical recurrence significantly in this study. (The concordance index of this study was 0.728, its CaSURE dataset was 0.66, and its Northwestern university dataset was 0.764)

**Conclusions:** CAPRA score was proven to be a significant tool to predict disease-free survival rate in the limited cases for the Korean prostate cancer in this study. However, further studies with bigger samples are required to generalize the validity of CAPRA score for the Korean prostate cancer patients.

Table 1. CAPRA score calculation

	condition	score
Age	Younger than 50	0
	Older than 50	1
Clinical stage	T1 & T2	0
	T3a	1
Preoperative PSA	2.1-6	0
	6.1-10	1
	10.1-20	2
	20.1-30	3
	>30	4
Biopsy Gleason score	1-3/1-3	0
	1-3/4-5	1
	4-5/1-5	3
Positive biopsy core	Less than 34%	0
	More than 34%	1

Table 2. Cox proportional hazard model of biochemical recurrence using CAPRA score

	Hazard ratio	95%confidence interval	significance
Age	0.262	0.030-2.310	0.228
Clinical stage		All the patients were T1 & T2	
preoperative PSA	1.122	0.863-1.460	0.390
Gleason score	1.893	1.316-2.723	0.001
Positive biopsy core	0.599	0.253-1.418	0.244

Table 3. Kaplan-Meier analysis of 5 year disease-free survival rate using CAPRA score

CAPRA-S score	5 year disease-free survival rate (%)	significance
0-1	100	
2	80	0.386
3	70	0.301
4	65	0.037
5	80	0.120
6	62	0.074
7-10	30	0.003