MP 62-04

Surgical Pathology and Oncological Prognosis According to Zonal Origin of High Grade Cancer

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Purpose

- We assessed the impact of prostatic zone tumor origin on pathological prognostic features and subsequent biochemical outcomes after radical prostatectomy.

Materials and Methods

- SNUBH RP database (n=3,823, From 2004 to 2018)

Inclusion Criteria
- High Grade Cancer (GS ≥4+3)
- Classified according to main tumor location

Exclusion Criteria
- The location of main tumor invades other zonal location

→ 213 Tz tumor and 717 Pz tumor

Endpoints To analyze influence of zonal origin to Surgical Pathology and BCR

Variable	Transitional zone		Peripheral zone		
	Value	Percent	Value	Percent	P value
Patients	213		717		
Age (years)	66 (48-80)		66 (46-83)		0.78
PSA (ng/ml)	15.2 ± 17.4		11.99 ± 10.2		<0.01
Prostate weight (gram)	39.3 ± 12.9		39.4 ± 13.9		0.52
Tumor volume (cc)	8.0 ± 4.9		5.77 ± 2.18		0.03
ISUP					
3 (GS 4+3)	170	78.9%	515	72.2%	<0.01
4 (GS 8)	29	13.6%	98	13.7%	
5 (GS 9 -10)	14	6.6%	100	14.0%	
ECE	61	28.7%	287	40.3%	<0.01
SVI	3	1.4%	114	16.6%	<0.01
BNI	3	1.4%	6	0.8%	0.44
LNI	1	0.5%	21	2.9%	<0.01

Table 1. Demographics and Pathological Characteristics

	Variable	Transitional zone (n=213) Value	Transitional zone (n=213) Percent	Peripheral zone (n=717) Value	Peripheral zone (n=717) Percent	P value
PSM	None	156	76.8%	556	82.6%	<0.01
	Apex	12	5.9%	46	6.8%	
	Base (bladder neck)	6	3.0%	4	0.6%	
	Anterior	15	7.4%	10	1.5%	
	Posterior	7	3.4%	20	3.0%	
	Rt. Lateral	2	1.0%	2	0.3%	
	Lt. lateral	1	0.5%	9	1.3%	
	Rt. Posterolateral	1	0.5%	14	2.1%	
	Lt. posterolateral	3	1.5%	12	1.8%	

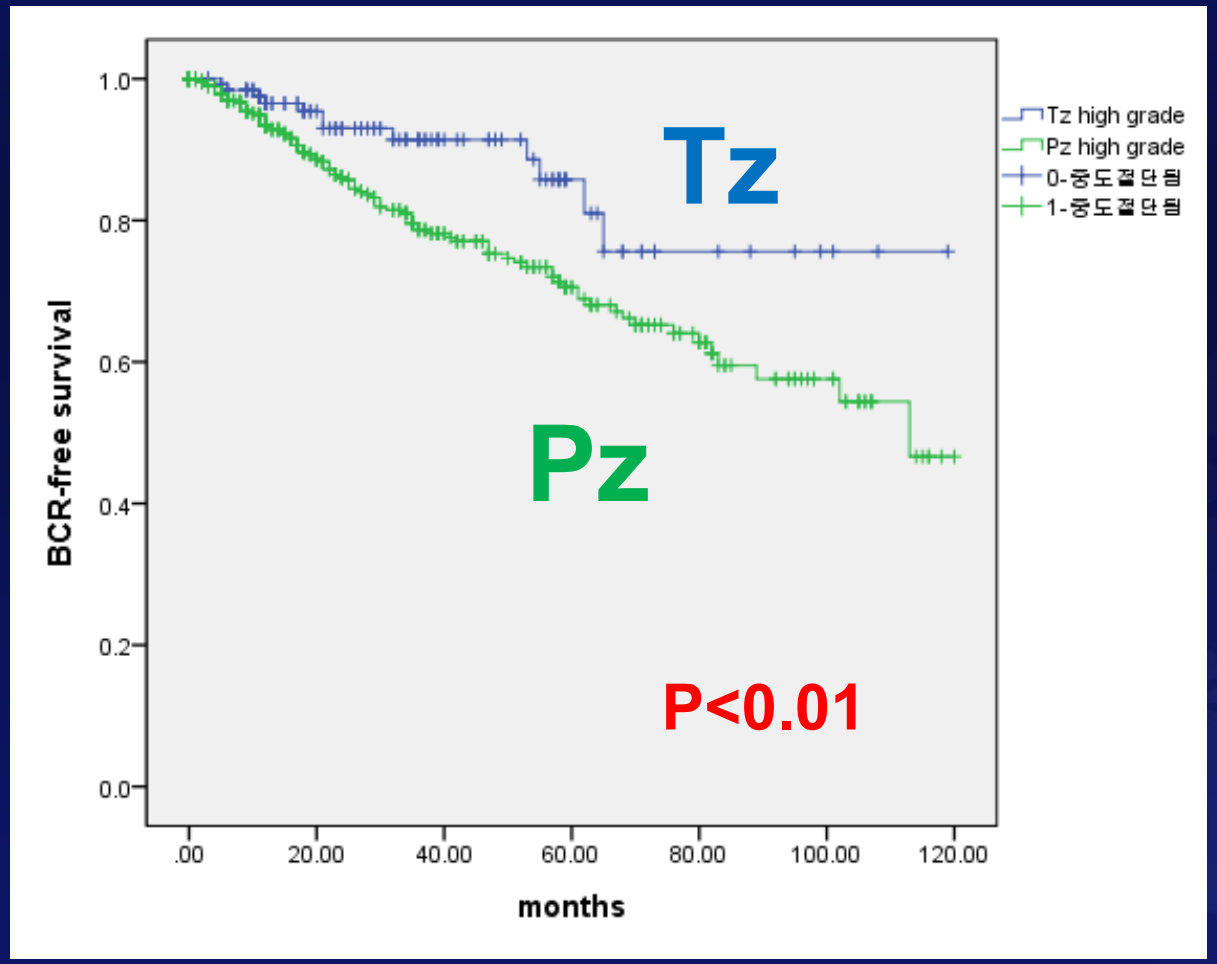
Table 2. Rate and Location of Positive Surgical Margin

	High grade (n=1,521)		Low grade (n=2,302)	
Variable	Odd ratio	p-value	Odd ratio	p-value
Tz origin tumor (vs non Tz)	0.91(0.88-0.94)	<0.01	1.08 (0.82-1.35)	0.54
Gleason sum	1.45 (1.32-1.57)	<0.01	1.31 (1.04-1.58)	<0.01
ECE	1.52 (1.21-1.81)	<0.01	1.41 (1.11-1.70)	<0.01
PSM	2.10 (1.80-2.54)	<0.01	4.21 (2.54-5.74)	<0.01
SVI	1.48 (1.20-1.80)	<0.01	-	

Table 3. Multivariable Cox regression analyses to predict BCR

Biochemical Recurrence (High Grade Cancer)

NSM



PSM

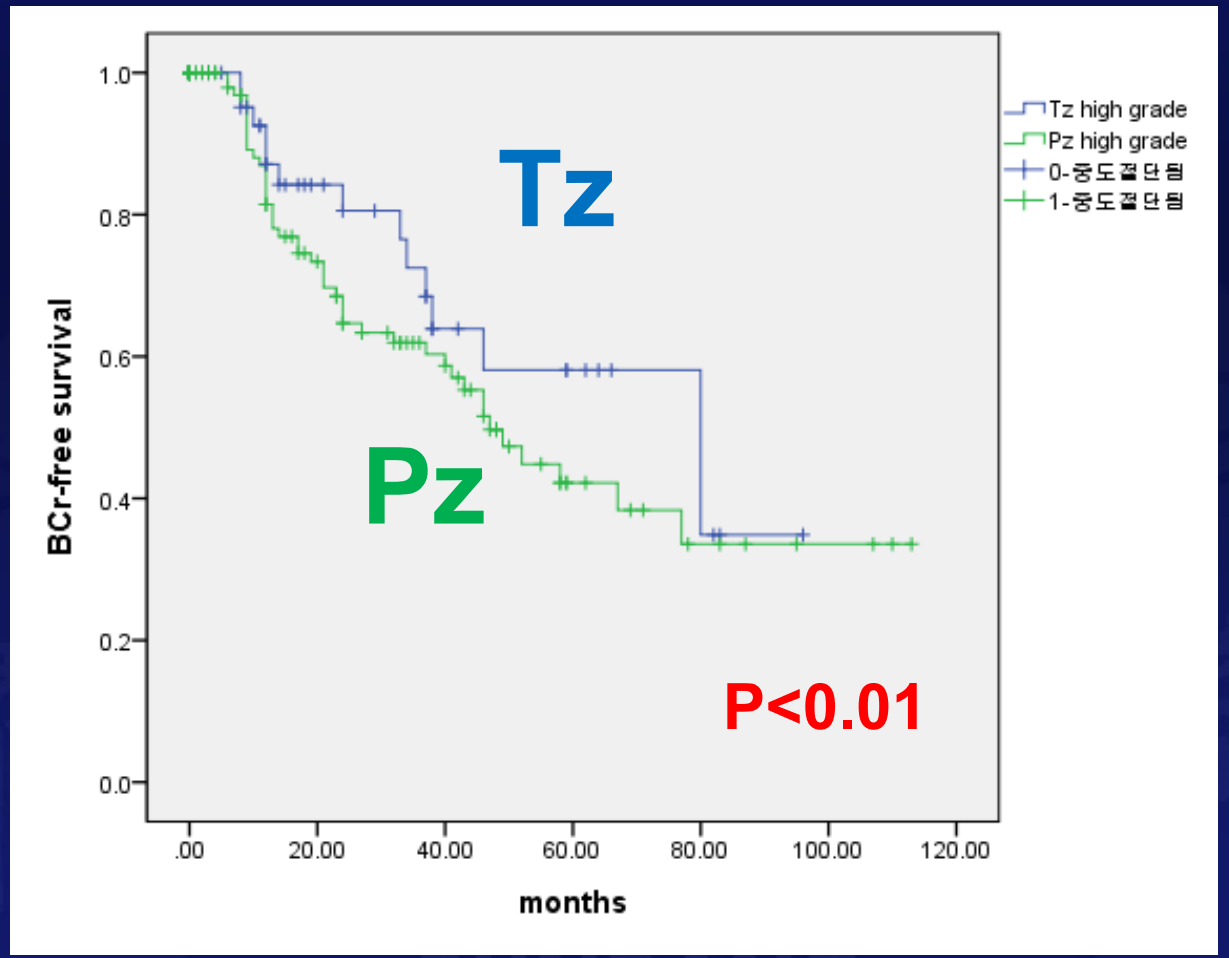


Table 3. BCR according to the location of high grade index lesion tumor and SM

Conclusions

- Among high grade cancer, high grade transition zone index lesion independently impact better biochemical outcome in spite of some worse clinical and pathological prognostic factors.
- To predict prognosis of high grade cancer patients after prostatectomy, the location of index lesion is definitely one of the factor to consider.