

Abstract no.: FP- 2-3

Are there differences in patient-reported outcomes between surgical and radiotherapy treatments for various risk groups of localized prostate cancer patients?

Background

- Prostate cancer: third and second most common cancer among men in Hong Kong and worldwide respectively
- More than 3000 new cases of prostate cancer in HK in 2023
- Median age at diagnosis: 71 years old
- Fourth leading cause of cancer death among males in Hong Kong
- 5-year relative survival rate in Hong Kong: 84%
- Radical prostatectomy (RP), radiation therapy (RT) are two most commonly used treatment for patients with various stages of localized diseases
 - have similar survival outcomes, but different impacts on functional outcomes
- Lack of data on how treatments affect quality of life in Asia after receiving RP and RT
 - 5-year longitudinal trends of patient-reported outcomes (PROs) after primary outcomes for localized PCa among different risk groups

Methodology

- Men who diagnosed with localized PCa (≥ 18 years) receiving RP and RT were followed from diagnosis until the most recent follow-up over 5 years
- Patients were classified according to the AUA risk group – low-risk, intermediate-risk and high-risk patients
- Analyses were conducted baseline and annually up to 5 years post-treatment
- The EPIC-26 questionnaire calculate scores for each domain (urinary incontinence, urinary irritation, bowel function, sexual function, hormonal function), using a standardised transformation method
- Linear mixed-effect models were used to assess longitudinal PROMs
 - Fixed effect for treatment modality, Time, Treatment \times Time interaction, clinically relevant covariates (i.e. age, BMI, Charlson Comorbidity Index, AUA risk group classification)

Results

- In total, 671 eligible patients were analysed (332 RP; 339RT)
- RP patients:
 - Poorer urinary continence outcomes across all risk groups than RT patients (high-risk; 4y; -26; -33 to -18; $P < 0.001$), but the difference for low-risk group became insignificant after 2 years of treatment
 - More significant sexual dysfunction relative to RT group across all risk categories (low-risk; 1y; -9.8; -24 to -3.8; $P = 0.007$), though the difference become insignificant after 2-3 years of treatment
 - The estimated mean difference between RP and RT in urinary outcomes and sexual function for all risk groups are summarised in Table 1 and Table 2 respectively.
- RT patients:
 - Poorer bowel function up to 4 years in all risk groups (high-risk; 2y; 10; 5.4 to 15; $P < 0.001$)
 - Poorer hormonal function, especially those in high-risk group at 2nd year (high-risk; 2y; 8.7; 4.3 to 13; $P < 0.001$)
 - The estimated mean difference between RP and RT in bowel function and hormonal function for all risk groups are summarised in Table 3 and Table 4 respectively

Table 1. Estimated mean difference between RP and RT in urinary continence for all risk groups.

Outcome	Low-risk		Intermediate-risk		High-risk	
	RP - RT	P	RP - RT	P	RP - RT	P
Urinary incontinence						
At baseline	-7.1 (-15 to 1.3)	0.097	1.1 (-3.7 to 6.0)	0.7	0.46 (-5.1 to 6.0)	0.9
At 1 year	-16 (-25 to -7.3)	<0.001	-21 (-26 to -15)	<0.001	-17 (-23 to -12)	<0.001
At 2 years	-10 (-19 to -1.0)	0.030	-18 (-23 to -12)	<0.001	-19 (-25 to -12)	<0.001
At 3 years	-5.9 (-17 to 4.8)	0.3	-13 (-19 to -6.4)	<0.001	-19 (-25 to -12)	<0.001
At 4 years	-5.0 (-16 to 6.3)	0.4	-13 (-20 to -4.8)	0.001	-26 (-33 to -18)	<0.001
At 5 years	-14 (-28 to -0.20)	0.047	-15 (-25 to -5)	0.003	-23 (-32 to -15)	<0.001

Table 2. Estimated mean difference between RP and RT in sexual function for all risk groups.

Outcome	Low-risk		Intermediate-risk		High-risk	
	RP - RT	P	RP - RT	P	RP - RT	P
Sexual						
At baseline	-6.6 (-16 to 3.2)	0.19	2.5 (-2.6 to 7.5)	0.3	11 (6.2 to 16)	<0.001
At 1 year	-9.8 (-19 to -0.083)	0.048	-7.7 (-13 to -2.6)	0.003	-5.8 (-10 to -1.2)	0.013
At 2 years	-14 (-24 to -3.8)	0.007	-7.7 (-13 to -2.2)	0.006	-8.0 (-5.7 to 4.1)	0.7
At 3 years	-8.4 (-21 to 3.6)	0.17	-7.7 (-14 to -1.6)	0.013	-2.1 (-7.4 to 3.2)	0.4
At 4 years	-3.3 (-16 to 9.1)	0.6	-6.9 (-14 to 0.35)	0.062	-4.8 (-11 to 1.3)	0.12
At 5 years	-1.5 (-17 to 14)	0.8	-7.9 (-17 to 1.6)	0.10	-8.5 (-16 to 13)	0.021

Table 3. Estimated mean difference between RP and RT in bowel function for all risk groups.

Outcome	Low-risk		Intermediate-risk		High-risk	
	RP - RT	P	RP - RT	P	RP - RT	P
Bowel						
At baseline	-0.47 (-6.1 to 5.2)	0.9	0.50 (-3.0 to 4.0)	0.8	-1.8 (-5.9 to 2.3)	0.4
At 1 year	8.2 (2.3 to 14)	0.006	5.1 (1.4 to 8.8)	0.007	8.8 (4.5 to 13)	<0.001
At 2 years	14 (7.6 to 20)	<0.001	6.3 (2.1 to 10)	0.003	10 (5.4 to 15)	<0.001
At 3 years	11 (3.3 to 18)	0.004	5.6 (0.93 to 10)	0.019	7.1 (2.1 to 12)	0.005
At 4 years	8.7 (0.99 to 16)	0.027	7.0 (1.3 to 13)	0.017	-0.65 (-6.3 to 5.0)	0.8
At 5 years	2.4 (-7.0 to 12)	0.6	0.14 (-7.3 to 7.6)	>0.9	2.2 (-4.4 to 8.8)	0.5

Table 4. Estimated mean difference between RP and RT in hormonal function for all risk groups.

Outcome	Low-risk		Intermediate-risk		High-risk	
	RP - RT	P	RP - RT	P	RP - RT	P
Hormonal						
At baseline	-3.2 (-8.0 to 1.5)	0.18	-0.14 (-3.1 to 2.8)	0.9	3.0 (-0.89 to 6.9)	0.130
At 1 year	4.1 (-0.85 to 9.0)	0.10	5.8 (2.6 to 9.0)	<0.001	7.9 (3.8 to 12)	<0.001
At 2 years	4.6 (-0.62 to 9.7)	0.085	4.3 (0.74 to 7.9)	0.018	8.7 (4.3 to 13)	<0.001
At 3 years	0.62 (-5.7 to 6.9)	0.8	4.0 (-0.042 to 8.1)	0.052	6.6 (1.9 to 11)	0.006
At 4 years	-0.59 (-7.4 to 6.2)	0.9	2.0 (-3.0 to 7.1)	0.4	2.3 (-3.0 to 7.5)	0.4
At 5 years	0.93 (-7.4 to 9.2)	0.8	5.3 (-1.3 to 12)	0.11	1.8 (-4.2 to 7.9)	0.6

Conclusion

- The PROs differ depending on patient risk and treatment options
 - RP patients have a better bowel function and hormonal function
 - RT patients have a better urinary continence and sexual function
 - The difference in outcomes may become insignificant over time due to recovery and natural aging
- Select the most appropriate treatment by considering both cancer risk and the side effects that are most important to the patient.