Table S1: Propensity score parameter list

the variables used in calculating the propensity matching	Age, PSA, GS, T stage	
Propensity scoring algorithm	Logistic regression model	
C-statistical	0.9618	
Matching method	Greedy matching within specified caliper distances	
Distance metric	0.05	
Matching ratio	(Radiation prostatectomy) 1:1 (cryotherapy)	
Use of replacement	With replacement	
Matching sample size	RP: 1030 cases	Total: 2060 cases
	Cryotherapy: 1030 cases	

Table S2: sensitivity analysis from propensity score matching (PSM)

Several models were used to examine robustness of the treatment effects in the comparison of RP and cryotherapy:

(1) Inverse probability of treatment weighting (IPTW) logistic regression model: calculated by PS

(2) Standard mortality ratio weighting (SMRW) logistic regression model: calculated by PS

(3) Covariate adjustment propensity score (CAPS) model: adjusted for PS

(4) Double propensity score (DPS) adjusted model: adjusted for confounders in the matched cohort

(5) Propensity score (PPS) stratified model

RP vs cryotherapy	OM	CSM
IPTW model		
Non-adjusted	**3.39 (3.16, 3.62)**	**1.40 (1.13, 1.72)**
Adjusted	**2.17 (2.01, 2.35)**	0.88 (0.67, 1.15)
SMRW model		
Non-adjusted	**1.43 (1.21, 1.68)**	0.98 (0.61, 1.57)
Adjusted	1.11 (0.94, 1.33)	0.67 (0.41, 1.10)
CAPS model		
Non-adjusted	**4.74 (4.20, 5.35)**	**4.81 (3.26, 7.09)**
Covariate PS as continuous	**2.62 (2.06, 3.34)**	1.67 (0.75, 3.72)
Covariate PS as categorical (divided into five groups)	**3.02 (2.49, 3.65)**	**3.12 (1.69, 5.76)**
DPS model	**2.19 (1.60, 3.00)**	1.76 (0.68, 4.52)
PPS stratified model		
Q1	**5.78 (3.38, 9.88)**	**6.84 (1.55, 30.20)**
Q2	**13.10 (6.98, 24.59)**	**11.34 (1.43, 89.73)**
Q3	**3.07 (1.14, 8.29)**	1.00 (1.00, 1.00)
Q4	**2.81 (1.44, 5.48)**	3.13 (0.42, 23.38)
Q5	**2.55 (2.08, 3.14)**	**2.62 (1.34, 5.12)**

OS = overall survival, CSM = cancer specific mortality, PS = propensity score

IPTW model and SMRW model: adjust for age, prostate specific antigen, Gleason score, T stage

CAPS model: adjust for propensity score

DPS model: adjusted for age, Gleason Score, T stage