

Supplementary Materials:

Radiotherapy for Clinically Localized T3b or T4 Very-High-Risk Prostate Cancer-Role of Dose Escalation Using High-Dose-Rate Brachytherapy Boost or High Dose Intensity Modulated Radiotherapy

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Table S1. Patients characteristics among three groups.

Variables	Strata	Conv. EBRT (n = 86)		High dose EBRT (n = 39)		HDR boost (n = 124)		p - value
		No. or Median (range)	(%)	No. or Median (range)	(%)	No. or Median (range)	(%)	
Age		70.5 (60–89)		73 (64–79)		71 (60–86)		0.2262
T category	3b	67	-78%	34	-87%	115	-93%	0.0077
	4	19	-22%	5	-13%	9	-7%	
iPSA	(ng/mL)	42.07 (3.4–398)		27.2 (4.7–240)		31.9 (4.73–486)		0.3398
Gleason score	-6	0	0%	4	-10%	9	-7%	0.0383
	7	34	-40%	11	-28%	53	-43%	
	8-	51	-59%	24	-62%	62	-50%	
Prescribed dose (EQD 2Gy)	(Gy)	72 (70–72)		78 (74–80)		108.7 (104.1–129.8)		<0.0001
Hormonal therapy	Yes	86	-100%	38	-97%	121	-98%	0.3415
Neoadjuvant	months	7.5 (2–18)		6.5 (5–14)		12 (1–74)		<0.0001
Adjuvant	months	20 (1–30)		23 (3–60)		36 (8–114)		<0.0001
	No	0	0%	1	-3%	3	-2%	
Follow-up	(Months)	77.5 (18.7–135)		62.76 (24–87)		64 (13–153)		0.0002

Table S2. Detailed BED and EQD2Gy for each treatment schedule.

Prescribed dose	PT No.	(%)	BED($\alpha/\beta=1.5\text{Gy}$)	(EQD 2Gy)
Conv. EBRT (n=86)				
70Gy/35fr	14	(16%)	163	70
72Gy/36fr	72	(84%)	168	72
High dose EBRT (n=39)				
74 Gy/36fr	12	(31%)	172	74
78Gy/39fr	14	(36%)	182	78
74.8Gy/34fr	8	(21%)	184	79
80Gy/40fr	4	(10%)	186	80
70Gy/28fr	1	(3%)	186	80
HDR boost (n = 124)				
18 Gy / 2 fr +EBRT 39 Gy /13 fr	10	(8%)	243	104
18 Gy / 2 fr +51 Gy / 17fr	14	(11%)	279	119
18 Gy / 2 fr + 48 Gy/16fr	1	(1%)	270	115
20 Gy / 2fr + EBRT46Gy /23fr	4	(3%)	260	111
21 Gy /2 fr + EBRT 45 Gy /15fr	4	(3%)	303	130
21Gy / 3fr+ EBRT 51 Gy / 17 fr	1	(1%)	272	116
31.5 Gy / 5fr + EBRT 30 Gy /10fr	90	(73%)	253	109

$\text{BED} = n \times d \times (1 + d/(\alpha/\beta))$; $(\alpha/\beta=1.5\text{ Gy}$, n =fraction number, d = single dose).

$\text{EQD } 2\text{Gy} = n \times d \times (\alpha/\beta + d)/(\alpha/\beta + 2)$.

Table S3. Acute toxicity among three groups.

Toxicities	Grade	Conv EBRT. (n = 86)		HDEBRT (n = 39)		HDR boost (n = 124)		p-value
		No.	(%)	No.	(%)	No.	(%)	
Genitourinary	0	33	-38%	26	-67%	36	-29%	<0.0001
	1	48	-56%	9	-23%	66	-53%	
	2	5	-6%	4	-10%	22	-18%	
	3	0	0%	0	0%	0	0%	
Gastrointestinal	0	45	-52%	37	-95%	113	-91%	<0.0001
	1	40	-47%	2	-5%	11	-9%	
	2	1	-1%	0	0%	0	0%	
	3	0	0%	0	0%	0	0%	

Table S4. Late toxicity among three groups.

Toxicities	Grade	Conv EBRT. (n = 86)		HDEBRT (n = 39)		HDR boost (n = 124)		p-value
		No.	(%)	No.	(%)	No.	(%)	
Genitourinary	0	69	-80%	36	-92%	56	-45%	<0.0001
	1	8	-9%	1	-3%	54	-44%	
	2	5	-6%	2	-5%	7	-6%	
	3	4	-5%	0	0%	7	-6%	
Gastrointestinal	0	65	-76%	35	-90%	110	-89%	0.0741
	1	18	-21%	2	-5%	12	-10%	
	2	1	-1%	2	-5%	1	-1%	
	3	1	-1%	0	0%	1	-1%	

