

Supplementary Appendix

This appendix has been provided by the authors to give readers additional information about their work.

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Table S1: Baseline Characteristics

	Observation (n=367)	RP (n=364)	p-value
MEAN AGE years (SD)	66.8 (5.6)	67.0 (5.2)	.60
AGE GROUPING (%)			.61
40-49 years	3 (0.8)	1 (0.3)	
50-59 years	32 (8.7)	39 (10.7)	
60-69 years	211 (57.5)	203 (55.8)	
70-75 years	121 (33.0)	121 (33.2)	
RACE (%)			.53
Black	121 (33.0)	111 (30.5)	
White	220 (60.0)	232 (63.7)	
Other	26 (7.1)	21 (5.8)	
ACTIVITIES OF DAILY LIVING (%)			.17
Fully Active	310 (84.5)	312 (85.7)	
Ambulatory	52 (14.2)	41 (11.3)	
No Work / Self Care / Confined	5 (1.4)	11 (3.0)	
SMOKING (%)			.63
Current Smoker	106 (28.9)	96 (26.4)	
HISTORY / CURRENT (%)			
Myocardial Infarction	43 (11.7)	37 (10.2)	.50
Congestive Heart Failure	8 (2.2)	3 (0.8)	.13
Peripheral Vascular Disease	20 (5.5)	15 (4.1)	.43
Cerebral Vascular Disease	16 (4.4)	7 (1.9)	.06
Stroke	18 (4.9)	14 (3.9)	.48
Diabetes	59 (16.1)	56 (15.4)	.80
Chronic Obstructive Pulmonary Disease	25 (6.8)	37 (10.2)	.10
Urinary Incontinence	15 (4.6)	29 (8.9)	.03
Erectile Dysfunction	104 (32.3)	107 (32.5)	.95
Bowel Dysfunction	29 (10.4)	18 (6.3)	.08
CHARLSON COMORBIDITY SCORE (%)#			.20
Score = 0	204 (55.6)	206 (56.6)	
Score = 1	103 (28.1)	108 (29.7)	
Score = 2 or more	60 (16.4)	47 (12.9)	
TUMOR CHARACTERISTICS			
PSA (ng/ml): Mean (SD)	10.2 (7.9)	10.1 (7.4)	.89
Median	7.7	7.9	
PSA Categories (%)			.89
<4.0	40 (10.9)	42 (11.5)	
4.0 – 10.0	201 (54.8)	196 (53.9)	
10.1 – 19.9	88 (24.0)	88 (24.2)	
20.0 – 49.9	37 (10.1)	38 (10.4)	

Clinical Stage (%)			.38
TX	1 (0.3)	1 (0.3)	
T1A (A1)	11 (3.0)	4 (1.1)	
T1B (A2)	9 (2.5)	5 (1.4)	
T1C	183 (49.9)	185 (50.8)	
T2A (B1)	85 (23.2)	96 (26.4)	
T2B (B2)	44 (12.0)	47 (12.9)	
T2C	33 (9.0)	24 (6.6)	
T3C	0 (0.0)	1 (0.3)	
Gleason Score (%)			.41
≤ 4	75 (20.4)	82 (22.5)	
5-6	186 (50.7)	172 (47.3)	
7	64 (17.4)	69 (19.0)	
8-10	22 (6.0)	29 (8.0)	
Mean Gleason Score (SD)	5.7 (1.4)	5.6 (1.4)	.80
Histologic Grade (%)*			.66
Well Differentiated	75 (20.4)	82 (22.5)	
Moderately Well Differentiated	261 (71.1)	247 (67.9)	
Poorly Differentiated	22 (6.0)	29 (8.0)	
Unknown	5 (1.4)	4 (1.1)	
Tumor Risk Category (%)**			.37
Low risk	148 (40.3)	148 (40.7)	
Intermediate risk	120 (32.7)	129 (35.4)	
High risk	80 (21.8)	77 (21.2)	

Charlson Comorbidity Score was calculated based on a point weighting derived for current or past history of the following (points for each condition are shown in parentheses): myocardial infarction (1); chronic congestive heart failure (2); peripheral vascular disease (1); cerebrovascular disease or stroke (1); diabetes (1), with end-organ damage (additional 1 point); dementia (3); chronic pulmonary disease (2); mild

liver disease (2), moderate or severe liver disease (4); moderate or severe renal disease (3); cancer other than skin, prostate or non-invasive bladder cancer (leukemia, lymphoma, other cancers (2); metastatic solid tumor (6); acquired immune deficiency syndrome (4).

* Well differentiated = Gleason Score <4; Moderately Well Differentiated = Gleason Score 5-7; Poorly Differentiated = Gleason Score 8-10 based on local site histology.

** Low risk = Gleason Score \leq 6, PSA \leq 10 and Tumor Stage T1a, T1b, T1c or T2a; Intermediate risk = PSA 10.1-20 ng/mL or Gleason score = 7 or Stage T2b; High risk = PSA > 20 ng/mL or Gleason score 8-10 or Stage T2c. Four percent of men had insufficient information to determine tumor risk category score
Table S1: Baseline Characteristics

* Well differentiated = Gleason Score <4; Moderately Well Differentiated = Gleason Score 5-7; Poorly Differentiated = Gleason Score 8-10 based on local site histology.

Low risk = Gleason Score \leq 6, PSA \leq 10 and Tumor Stage T1a, T1b, T1c or T2a; Intermediate risk = PSA 10.1-20 ng/mL or Gleason score = 7 or Stage T2b; High risk = PSA > 20 ng/mL or Gleason score 8-10 or Stage T2c. Four percent of men had insufficient information to determine tumor risk category scores.

Table S2: Surgical Approach, Type, Adequacy and Reasons for Refusal among Men Randomized to Radical Prostatectomy

Radical Prostatectomy Approach (N=281 RP)	
Retropubic	239 (85.1)
Perineal	41 (14.6)
Unknown	1 (0.4)
Pelvic Lymph Node Dissection	230
Nodes Resected	220 (95.7)
Nodal Status Positive	9 (3.9)
Unknown	1 (0.4)
Radical Prostatectomy-Use of nerve sparing	
Non-nerve sparing	167 (59.4)
Nerve Sparing: Unilateral	47 (16.7)
Nerve Sparing: Bilateral	61 (21.7)
Unknown	6 (2.1)
Pathologic Extent of Prostate Cancer*	
<i>Confined to Prostate</i>	150 (53.4)
Low Risk (N=114)	75 (65.8)
Intermediate Risk (N=103)	52 (50.5)
High Risk (N=59)	21 (35.6)
<i>Capsular invasion</i>	28 (10.0)
<i>Capsular penetration</i>	16 (5.7)
<i>Surgical margins involved</i>	64 (22.8)
Low Risk (n=114)	20 (17.5)
Intermediate Risk (n=103)	32 (31.1)
High Risk (n=59)	10 (17.0)
<i>Seminal vesicle invasion</i>	21 (7.5)
<i>Unknown</i>	2 (0.7)
Radical Prostatectomy Not performed	83 (22.8)
Patient refusal	65 (78.3)
Physician recommendation	1 (1.2)
High surgical risk	5 (6.0)
Prostate cancer not localized	6 (7.2)
Patient died prior to surgery	3 (3.6)
Unknown	3 (3.6)

* In five patients risk categorization was not possible.

Table S3: Cause of death

		RP (n=171)	Observation (n=183)
Cause of Death			
	Definitely <u>not</u> due to prostate cancer	127 (74.3%)	123 (67.2%)
	Probably <u>not</u> due to prostate cancer	22 (12.9%)	29 (15.8%)
	Probably due to prostate cancer	3 (1.8%)	13 (7.1%)
	Definitely due to prostate cancer	15 (8.8%)	18 (9.8%)
	Probably due to prostate cancer treatment	2 (1.2%)	0
	Definitely due to prostate cancer treatment	1 (0.6%)	0
	Unknown	1 (0.6%)	0
Combined cause of death outcomes			
	Definitely OR Probably <u>not</u> due to prostate cancer	148 (87.0%)	152 (83.1%)
	Definitely OR Probably due to prostate cancer	18 (10.6%)	31 (16.9%)
	Definitely OR Probably due to prostate cancer treatment	3 (1.8%)	0
	Unknown	1 (0.6%)	0

Table S4: All cause mortality Cumulative Incidence: Overall and Subgroup Findings

All-Cause Mortality	Cumulative Incidence				Absolute risk reduction % (95% CI)	Relative risk (95% CI)	p-value
	Radical prostatectomy		Observation				
	No.	% (95% CI)	No.	% (95% CI)			
Overall	171	47.0 (41.9 to 52.1)	183	49.9 (44.8 to 55.0)	2.9 (-4.3 to 10.1)	0.94 (0.81 to 1.09)	0.22
All ages, 4 y		9.6 (7.0 to 13.1)		14.2 (11.0 to 18.1)	4.6 (-0.2 to 9.3)	0.68 (0.45 to 1.02)	
All ages, 8 y		26.7 (22.4 to 31.4)		29.7 (25.3 to 34.6)	3.1 (-3.5 to 9.5)	0.90 (0.71 to 1.13)	
All ages, 12 y		40.9 (36.0 to 46.1)		43.9 (38.9 to 49.0)	2.9 (-4.2 to 10.0)	0.93 (0.79 to 1.11)	
Patient Characteristic Derived Subgroups							
Age < 65	43	35.3 (27.3 to 44.1)	50	38.2 (27.3 to 44.1)	2.9 (-8.9 to 14.6)	0.92 (0.67 to 1.28)	0.58
Age < 65, 4 y		9.8 (5.7 to 16.4)		9.2 (5.3 to 15.3)	-0.7 (-8.3 to 6.7)	1.07 (0.50 to 2.30)	
Age < 65, 8 y		22.1 (15.7 to 30.3)		20.6 (14.6 to 28.3)	-1.5 (-11.7 to 8.5)	1.07 (0.67 to 1.72)	
Age < 65, 12 y		32.0 (24.4 to 40.7)		31.3 (24.0 to 39.7)	-0.7 (-12.1 to 10.7)	1.02 (0.71 to 1.47)	
Age ≥ 65	128	52.9 (46.6 to 59.1)	133	56.4 (50.0 to 62.5)	3.5 (-5.4 to 12.3)	0.94 (0.80 to 1.11)	0.17
Age ≥ 65, 4 y		9.5 (6.4 to 13.9)		17.0 (12.7 to 22.3)	7.5 (1.4 to 13.6)	0.56 (0.35 to 0.91)	
Age ≥ 65, 8 y		28.9 (23.6 to 34.9)		34.8 (29.0 to 41.0)	5.8 (-2.5 to 14.1)	0.83 (0.64 to 1.08)	
Age ≥ 65, 12 y		45.5 (39.3 to 51.8)		50.9 (44.5 to 57.2)	5.4 (-3.5 to 14.2)	0.89 (0.74 to 1.08)	
Race – White	117	50.4 (44.0 to 56.8)	119	54.1 (47.5 to 60.6)	3.7 (-5.5 to 12.7)	0.93 (0.78 to 1.11)	0.18
Race – White, 4 y		9.9 (6.7 to 14.4)		14.1 (10.1 to 19.3)	4.2 (-1.9 to 10.3)	0.70 (0.42 to 1.17)	
Race – White, 8 y		28.0 (22.6 to 34.1)		30.5 (24.8 to 36.8)	2.4 (-5.9 to 10.8)	0.92 (0.69 to 1.23)	
Race – White, 12 y		42.2 (36.1 to 48.7)		45.0 (38.6 to 51.6)	2.8 (-6.3 to 11.8)	0.94 (0.76 to 1.16)	
Race – Black	46	41.4 (32.7 to 50.7)	53	43.8 (35.3 to 52.7)	2.4 (-10.3 to 14.8)	0.95 (0.70 to 1.28)	0.70
Race – Black, 4 y		9.9 (5.6 to 16.9)		14.9 (9.6 to 22.3)	5.0 (-3.8 to 13.5)	0.67 (0.33 to 1.35)	
Race – Black, 8 y		26.1 (18.9 to 35.0)		29.8 (22.3 to 38.4)	3.6 (-7.9 to 14.9)	0.88 (0.58 to 1.33)	
Race – Black, 12 y		39.6 (31.0 to 48.9)		42.2 (33.7 to 51.1)	2.5 (-10.0 to 14.9)	0.94 (0.69 to 1.28)	
Race – Other	8	38.1 (20.8 to 59.1)	11	42.3 (25.5 to 61.1)	4.2 (-22.7 to 29.8)	0.90 (0.44 to 1.82)	0.72
Race – Other, 4 y		4.8 (0.9 to 22.7)		11.5 (4.0 to 29.0)	6.8 (-12.7 to 24.7)	0.41 (0.05 to 3.68)	
Race – Other, 8 y		14.3 (5.0 to 34.6)		23.1 (11.0 to 42.1)	8.8 (-14.9 to 29.9)	0.62 (0.18 to 2.18)	
Race – Other, 12 y		33.3 (17.2 to 54.6)		42.3 (25.5 to 61.1)	9.0 (-18.1 to 33.7)	0.79 (0.37 to 1.67)	
Charlson Score = 0	82	36.6 (30.6 to 43.1)	86	39.1 (32.9 to 45.7)	2.5 (-6.5 to 11.4)	0.94 (0.74 to 1.19)	0.48
Charlson = 0, 4 y		7.6 (4.8 to 11.8)		10.0 (6.7 to 14.7)	2.4 (-3.0 to 7.9)	0.76 (0.41 to 1.39)	

All-Cause Mortality	Cumulative Incidence				Absolute risk reduction % (95% CI)	Relative risk (95% CI)	p-value
	Radical prostatectomy		Observation				
	No.	% (95% CI)	No.	% (95% CI)			
Charlson = 0, 8 y		21.9 (17.0 to 27.7)		24.1 (18.9 to 30.2)	2.2 (-5.6 to 10.0)	0.91 (0.65 to 1.28)	
Charlson = 0, 12 y		30.8 (25.1 to 37.1)		33.6 (27.7 to 40.1)	2.8 (-5.8 to 11.5)	0.92 (0.70 to 1.20)	
Charlson Score ≥ 1	89	63.6 (55.3 to 71.1)	97	66.0 (58.0 to 73.2)	2.4 (-8.5 to 13.3)	0.96 (0.81 to 1.14)	0.25
Charlson ≥ 1, 4 y		12.9 (8.3 to 19.4)		20.4 (14.7 to 27.6)	7.6 (-1.2 to 16.1)	0.63 (0.37 to 1.08)	
Charlson ≥ 1, 8 y		34.3 (26.9 to 42.5)		38.1 (30.6 to 46.2)	3.8 (-7.3 to 14.7)	0.90 (0.66 to 1.23)	
Charlson ≥ 1, 12 y		57.1 (48.9 to 65.0)		59.2 (51.1 to 66.8)	2.0 (-9.3 to 13.3)	0.97 (0.79 to 1.18)	
Perf Status = 0	139	44.6 (39.1 to 50.1)	146	47.1 (41.6 to 52.7)	2.6 (-5.3 to 10.3)	0.95 (0.80 to 1.12)	0.34
Perf Status = 0, 4 y		8.7 (6.0 to 12.3)		11.9 (8.8 to 16.0)	3.3 (-1.5 to 8.1)	0.73 (0.45 to 1.16)	
Perf Status = 0, 8 y		24.4 (19.9 to 29.4)		26.5 (21.9 to 31.6)	2.1 (-4.7 to 8.9)	0.92 (0.70 to 1.21)	
Perf Status = 0, 12 y		38.5 (33.2 to 44.0)		40.0 (34.7 to 45.6)	1.5 (-6.1 to 9.2)	0.96 (0.79 to 1.17)	
Perf Status = 1 – 4	32	61.5 (48.0 to 73.5)	37	64.9 (51.9 to 76.0)	3.3 (-14.3 to 20.9)	0.95 (0.71 to 1.26)	0.40
Perf Status = 1-4, 4y		15.4 (8.0 to 27.5)		26.3 (16.7 to 39.0)	10.9 (-4.6 to 25.6)	0.58 (0.27 to 1.26)	
Perf Status = 1-4, 8y		40.4 (28.2 to 53.9)		47.4 (35.0 to 60.1)	7.0 (-11.4 to 24.6)	0.85 (0.56 to 1.31)	
Perf Status = 1-4, 12y		55.8 (42.3 to 68.4)		64.9 (51.9 to 76.0)	9.1 (-9.0 to 26.6)	0.86 (0.63 to 1.17)	
Tumor Characteristic Derived Subgroups							
PSA ≤ 10	110	46.2 (40.0 to 52.6)	105	43.6 (37.5 to 49.9)	-2.7 (-11.5 to 6.2)	1.06 (0.87 to 1.29)	0.82
PSA ≤ 10, 4 y		9.4 (6.2 to 13.6)		12.0 (8.5 to 16.8)	2.8 (-2.8 to 8.4)	0.77 (0.45 to 1.30)	
PSA ≤ 10, 8 y		25.6 (20.5 to 31.5)		27.4 (22.1 to 33.3)	1.8 (-6.1 to 9.6)	0.94 (0.69 to 1.26)	
PSA ≤ 10, 12 y		40.8 (34.7 to 47.1)		38.2 (32.3 to 44.5)	-2.6 (-11.3 to 6.1)	1.07 (0.86 to 1.33)	
PSA > 10	61	48.4 (39.9 to 57.1)	77	61.6 (52.9 to 69.7)	13.2 (0.9 to 24.9)	0.79 (0.63 to 0.99)	0.02
PSA > 10, 4 y		10.3 (6.1 to 16.9)		17.6 (11.9 to 25.2)	7.3 (-1.4 to 16.0)	0.59 (0.31 to 1.11)	
PSA > 10, 8 y		28.6 (21.4 to 37.0)		33.6 (25.9 to 42.3)	5.0 (-6.4 to 16.3)	0.85 (0.59 to 1.23)	
PSA > 10, 12 y		41.3 (33.1 to 50.0)		54.4 (45.7 to 62.9)	13.1 (0.8 to 24.9)	0.76 (0.58 to 0.99)	
Risk – Low (Local)	62	41.9 (34.3 to 50.0)	54	36.5 (29.2 to 44.5)	-5.4 (-16.3 to 5.7)	1.15 (0.86 to 1.53)	0.45
Risk – Low, 4 y		8.8 (5.2 to 14.4)		10.1 (6.2 to 16.1)	1.4 (-5.5 to 8.3)	0.87 (0.43 to 1.76)	
Risk – Low, 8 y		25.0 (18.7 to 32.6)		21.0 (15.2 to 28.2)	-4.1 (-13.6 to 5.5)	1.19 (0.78 to 1.82)	
Risk – Low, 12 y		37.2 (29.8 to 45.2)		31.8 (24.8 to 39.6)	-5.4 (-16.0 to 5.4)	1.17 (0.85 to 1.60)	

All-Cause Mortality	Cumulative Incidence				Absolute risk reduction % (95% CI)	Relative risk (95% CI)	p-value
	Radical prostatectomy		Observation				
	No.	% (95% CI)	No.	% (95% CI)			
Risk – Int (Local)	59	45.7 (37.4 to 54.3)	70	58.3 (49.4 to 66.8)	12.6 (0.2 to 24.5)	0.78 (0.62 to 1.00)	0.037
Risk – Int, 4 y		7.8 (4.3 to 13.7)		14.2 (9.0 to 21.5)	6.4 (-1.4 to 14.6)	0.55 (0.26 to 1.15)	
Risk – Int, 8 y		22.5 (16.1 to 30.4)		31.7 (24.0 to 40.4)	9.2 (-1.8 to 20.0)	0.71 (0.47 to 1.07)	
Risk – Int, 12 y		37.2 (29.4 to 45.8)		50.0 (41.2 to 58.8)	12.8 (0.5 to 24.6)	0.74 (0.56 to 0.99)	
Risk – High (Local)	42	54.6 (43.5 to 65.2)	49	61.3 (50.3 to 71.2)	6.7 (-8.6 to 21.6)	0.89 (0.68 to 1.16)	0.16
Risk – High, 4 y		13.0 (7.2 to 22.3)		20.0 (12.7 to 30.1)	7.0 (-4.8 to 18.6)	0.65 (0.31 to 1.34)	
Risk – High, 8 y		35.1 (25.4 to 46.2)		41.3 (31.1 to 52.2)	6.2 (-8.9 to 20.8)	0.85 (0.57 to 1.27)	
Risk – High, 12 y		50.7 (39.7 to 61.5)		57.5 (46.6 to 67.7)	6.9 (-8.6 to 21.8)	0.88 (0.66 to 1.18)	
Risk – Low (Central)	45	40.5 (31.9 to 49.8)	47	38.5 (30.4 to 47.4)	-2.0 (-14.4 to 10.4)	1.05 (0.77 to 1.45)	0.72
Risk – Low, 4 y		8.1 (4.3 to 14.7)		9.8 (5.7 to 16.4)	1.7 (-6.0 to 9.3)	0.82 (0.36 to 1.88)	
Risk – Low, 8 y		26.1 (18.9 to 35.0)		23.0 (16.4 to 31.2)	-3.2 (-14.2 to 7.8)	1.14 (0.73 to 1.79)	
Risk – Low, 12 y		35.1 (26.9 to 44.4)		32.8 (25.1 to 41.5)	-2.4 (-14.4 to 9.7)	1.07 (0.75 to 1.53)	
Risk – Int (Central)	74	47.4 (40.0 to 55.6)	73	52.5 (44.3 to 60.6)	4.8 (-6.6 to 16.0)	0.91 (0.72 to 1.14)	0.29
Risk – Int, 4 y		9.7 (6.0 to 15.4)		15.1 (10.1 to 22.0)	5.4 (-2.1 to 13.3)	0.64 (0.34 to 1.19)	
Risk – Int, 8 y		23.9 (17.8 to 31.2)		29.5 (22.6 to 37.6)	5.6 (-4.5 to 15.7)	0.81 (0.55 to 1.18)	
Risk – Int, 12 y		39.4 (32.0 to 47.2)		45.3 (37.3 to 53.6)	6.0 (-5.3 to 17.0)	0.87 (0.66 to 1.13)	
Risk – High (Central)	43	55.1 (44.1 to 65.7)	50	58.8 (48.2 to 68.7)	3.7 (-11.3 to 18.5)	0.94 (0.72 to 1.23)	0.25
Risk – High, 4 y		11.5 (6.2 to 20.5)		17.7 (11.0 to 27.1)	6.1 (-5.1 to 17.0)	0.65 (0.30 to 1.41)	
Risk – High, 8 y		34.6 (25.0 to 45.7)		38.8 (29.2 to 49.5)	4.2 (-10.5 to 18.5)	0.89 (0.59 to 1.34)	
Risk – High, 12 y		51.3 (40.4 to 62.1)		56.5 (45.9 to 66.5)	5.2 (-9.9 to 20.0)	0.91 (0.68 to 1.21)	
Gleason (Local) < 7	113	44.5 (38.5 to 50.6)	125	47.9 (41.9 to 53.9)	3.4 (-5.2 to 11.9)	0.93 (0.77 to 1.12)	0.26
Gleason < 7, 4 y		8.7 (5.8 to 12.8)		13.8 (10.1 to 18.5)	5.1 (-0.4 to 10.7)	0.63 (0.38 to 1.04)	
Gleason < 7, 8 y		25.2 (20.3 to 30.9)		28.4 (23.2 to 34.1)	3.2 (-4.5 to 10.7)	0.89 (0.67 to 1.18)	
Gleason < 7, 12 y		38.6 (32.8 to 44.7)		42.2 (36.3 to 48.2)	3.6 (-4.9 to 11.9)	0.92 (0.74 to 1.13)	
Gleason (Local) ≥ 7	50	51.0 (41.3 to 60.7)	47	54.7 (44.2 to 64.8)	3.6 (-10.6 to 17.7)	0.93 (0.71 to 1.23)	0.38
Gleason ≥ 7, 4 y		11.2 (6.4 to 19.0)		14.0 (8.2 to 22.8)	2.7 (-7.0 to 12.8)	0.80 (0.37 to 1.73)	
Gleason ≥ 7, 8 y		29.6 (21.5 to 39.3)		31.4 (22.6 to 41.8)	1.8 (-11.3 to 15.0)	0.94 (0.61 to 1.46)	
Gleason ≥ 7, 12 y		44.9 (35.4 to 54.8)		48.8 (38.6 to 59.2)	3.9 (-10.3 to 18.0)	0.92 (0.68 to 1.25)	
Gleason (Central) < 7	69	41.1 (33.9 to 48.6)	88	44.9 (38.1 to 51.9)	3.8 (-6.3 to 13.8)	0.91 (0.72 to 1.16)	0.63

All-Cause Mortality	Cumulative Incidence				Absolute risk reduction % (95% CI)	Relative risk (95% CI)	p-value
	Radical prostatectomy		Observation				
	No.	% (95% CI)	No.	% (95% CI)			
Gleason < 7, 4 y		7.7 (4.6 to 12.8)		12.2 (8.4 to 17.6)	4.5 (-1.9 to 10.7)	0.63 (0.33 to 1.20)	
Gleason < 7, 8 y		27.4 (21.2 to 34.6)		25.0 (19.5 to 31.5)	-2.4 (-11.5 to 6.6)	1.10 (0.78 to 1.55)	
Gleason < 7, 12 y		35.7 (28.9 to 43.2)		37.8 (31.3 to 44.7)	2.0 (-7.9 to 11.8)	0.95 (0.72 to 1.24)	
Gleason (Central) ≥ 7	92	52.9 (45.5 to 60.2)	81	54.7 (46.7 to 62.5)	1.9 (-9.0 to 12.6)	0.97 (0.79 to 1.18)	0.14
Gleason ≥ 7, 4 y		11.5 (7.6 to 17.1)		15.5 (10.6 to 22.2)	4.1 (-3.4 to 11.8)	0.74 (0.42 to 1.29)	
Gleason ≥ 7, 8 y		26.4 (20.4 to 33.5)		35.1 (27.9 to 43.1)	8.7 (-1.4 to 18.7)	0.75 (0.54 to 1.05)	
Gleason ≥ 7, 12 y		45.4 (38.2 to 52.8)		51.4 (43.4 to 59.3)	6.0 (-5.0 to 16.7)	0.88 (0.71 to 1.11)	

***P value:** from log-rank test for survival analysis

Risk Status: Low risk = PSA ≤ 10; Gleason histological score ≤ 6; tumor stage T1, T2a; Intermediate risk = PSA > 10 ≤ 20; Gleason score = 7; Stage T2b; High Risk = not low or intermediate risk but still clinically localized.

Y = year; Perf= Performance Status: 0= Fully Active; 1 = Symptoms but ambulatory and able to do light work, 2 = No work but self care and active 50% of waking hours, 3 = Limited self care, confined to bed or chair > 50% of waking hours, 4 = Completely disabled.

Table S5: Prostate Cancer Mortality-Cumulative Incidence

CAP-Specific Mortality	Cumulative Incidence				Absolute risk reduction % (95% CI)	Relative risk (95% CI)	p-value
	Radical prostatectomy		Observation				
	No.	% (95% CI)	No.	% (95% CI)			
Overall	21	5.8 (3.8 to 8.7)	31	8.4 (6.0 to 11.7)	2.6 (-1.1 to 6.5)	0.68 (0.40 to 1.17)	0.09
All ages, 4 y		1.7 (0.8 to 3.6)		1.6 (0.8 to 3.5)	0 (-2.1 to 2.1)	1.0 (0.33 to 3.10)	
All ages, 8 y		3.0 (1.7 to 5.3)		4.9 (3.1 to 7.6)	1.9 (-1.0 to 4.9)	0.62 (0.30 to 1.29)	
All ages, 12 y		4.4 (2.7 to 7.0)		7.4 (5.1 to 10.5)	3.0 (-0.5 to 6.5)	0.60 (0.33 to 1.09)	
Patient Characteristic Derived Subgroups							
Age < 65	6	4.9 (2.3 to 10.3)	12	9.2 (5.3 to 15.3)	4.2 (-2.4 to 11.0)	0.54 (0.21 to 1.39)	0.19
Age < 65, 4 y		1.6 (0.5 to 5.8)		0.8 (0.1 to 4.2)	-0.9 (-5.1 to 2.8)	2.15 (0.20 to 23.38)	
Age < 65, 8 y		3.3 (1.3 to 8.1)		4.6 (2.1 to 9.6)	1.3 (-4.1 to 6.7)	0.72 (0.21 to 2.48)	
Age < 65, 12 y		4.1 (1.8 to 9.2)		7.6 (4.2 to 13.5)	3.5 (-2.6 to 9.8)	0.54 (0.19 to 1.53)	
Age ≥ 65	15	6.2 (3.8 to 10.0)	19	8.1 (5.2 to 12.2)	1.9 (-2.9 to 6.7)	0.77 (0.40 to 1.48)	0.25
Age ≥ 65, 4 y		1.7 (0.6 to 4.2)		2.1 (0.9 to 4.9)	0.5 (-2.3 to 3.4)	0.78 (0.21 to 2.87)	
Age ≥ 65, 8 y		2.9 (1.4 to 5.9)		5.1 (2.9 to 8.7)	2.2 (-1.5 to 6.1)	0.57 (0.23 to 1.42)	
Age ≥ 65, 12 y		4.6 (2.6 to 8.0)		7.2 (4.6 to 11.2)	2.7 (-1.7 to 7.2)	0.63 (0.30 to 1.32)	
Race – White	15	6.5 (4.0 to 10.4)	22	10.0 (6.7 to 14.7)	3.5 (-1.6 to 8.8)	0.65 (0.34 to 1.21)	0.09
Race – White, 4 y		2.2 (0.9 to 4.9)		1.8 (0.7 to 4.6)	-0.3 (-3.3 to 2.7)	1.19 (0.32 to 4.36)	
Race – White, 8 y		3.5 (1.8 to 6.7)		5.9 (3.5 to 9.9)	2.5 (-1.6 to 6.8)	0.58 (0.25 to 1.38)	
Race – White, 12 y		4.3 (2.4 to 7.8)		9.1 (6.0 to 13.6)	4.8 (0.1 to 9.7)	0.47 (0.23 to 0.99)	
Race – Black	5	4.5 (1.9 to 10.1)	7	5.8 (2.8 to 11.5)	1.3 (-5.1 to 7.5)	0.78 (0.25 to 2.38)	0.71
Race – Black, 4 y		0.9 (0.2 to 4.9)		1.7 (0.5 to 5.8)	0.8 (-3.5 to 5.0)	0.55 (0.05 to 5.93)	
Race – Black, 8 y		2.7 (0.9 to 7.7)		4.1 (1.8 to 9.3)	1.4 (-4.1 to 6.9)	0.65 (0.16 to 2.67)	
Race – Black, 12 y		4.5 (1.9 to 10.1)		4.1 (1.8 to 9.3)	-0.4 (-6.5 to 5.4)	1.09 (0.32 to 3.66)	
Race – Other	1	4.8 (0.9 to 22.7)	2	7.7 (2.1 to 24.1)	2.9 (-15.8 to 19.8)	0.62 (0.06 to 6.37)	0.63
Race – Other, 4 y		0.0 (0.0 to 15.5)		0.0 (0.0 to 12.9)	0.0 (-15.5 to 12.9)	-----	
Race – Other, 8 y		0.0 (0.0 to 15.5)		0.0 (0.0 to 12.9)	0.0 (-15.5 to 12.9)	-----	
Race – Other, 12 y		4.8 (0.9 to 22.7)		7.7 (2.1 to 24.1)	2.9 (-15.8 to 19.8)	0.62 (0.06 to 6.37)	
Charlson Score = 0	14	6.3 (3.8 to 10.2)	19	8.6 (5.6 to 13.1)	2.4 (-2.6 to 7.5)	0.72 (0.37 to 1.41)	0.29
Charlson = 0, 4 y		0.9 (0.3 to 3.2)		1.8 (0.7 to 4.6)	0.9 (-1.6 to 3.8)	0.49 (0.09 to 2.65)	

CAP-Specific Mortality	Cumulative Incidence				Absolute risk reduction % (95% CI)	Relative risk (95% CI)	p-value
	Radical prostatectomy		Observation				
	No.	% (95% CI)	No.	% (95% CI)			
Charlson = 0, 8 y		2.2 (1.0 to 5.1)		5.9 (3.5 to 9.9)	3.7 (-0.1 to 7.8)	0.38 (0.14 to 1.04)	
Charlson = 0, 12 y		4.5 (2.4 to 8.0)		7.7 (4.9 to 12.0)	3.3 (-1.3 to 8.0)	0.58 (0.27 to 1.23)	
Charlson Score ≥ 1	7	5.0 (2.4 to 10.0)	12	8.2 (4.7 to 13.7)	3.2 (-2.9 to 9.3)	0.61 (0.25 to 1.51)	0.19
Charlson ≥ 1, 4 y		2.9 (1.1 to 7.1)		1.4 (0.4 to 4.8)	-1.5 (-5.9 to 2.4)	2.10 (0.39 to 11.28)	
Charlson ≥ 1, 8 y		4.3 (2.0 to 9.0)		3.4 (1.5 to 7.7)	-0.9 (-6.0 to 4.0)	1.26 (0.39 to 4.04)	
Charlson ≥ 1, 12 y		4.3 (2.0 to 9.0)		6.8 (3.7 to 12.1)	2.5 (-3.1 to 8.3)	0.63 (0.24 to 1.69)	
Perf Status = 0	18	5.8 (3.7 to 8.9)	25	8.1 (5.5 to 11.6)	2.3 (-1.8 to 6.4)	0.72 (0.40 to 1.28)	0.19
Perf Status = 0, 4 y		1.6 (0.7 to 3.7)		1.3 (0.5 to 3.3)	-0.3 (-2.6 to 1.9)	1.24 (0.34 to 4.58)	
Perf Status = 0, 8 y		2.9 (1.5 to 5.4)		4.2 (2.5 to 7.0)	1.3 (-1.7 to 4.5)	0.69 (0.30 to 1.59)	
Perf Status = 0, 12 y		4.5 (2.7 to 7.4)		6.8 (4.5 to 10.1)	2.3 (-1.4 to 6.1)	0.66 (0.34 to 1.28)	
Perf Status = 1-4	3	5.8 (2.0 to 15.6)	6	10.5 (4.9 to 21.1)	4.8 (-6.6 to 16.0)	0.55 (0.14 to 2.08)	0.21
Perf Status = 1-4, 4 y		1.9 (0.3 to 10.1)		3.5 (1.0 to 11.9)	1.6 (-7.0 to 10.2)	0.55 (0.05 to 5.87)	
Perf Status = 1-4, 8 y		3.9 (1.1 to 13.0)		8.8 (3.8 to 18.9)	4.9 (-5.5 to 15.5)	0.44 (0.09 to 2.16)	
Perf Status = 1-4, 12y		3.9 (1.1 to 13.0)		10.5 (4.9 to 21.1)	6.7 (-4.0 to 17.6)	0.37 (0.08 to 1.73)	
Tumor Characteristic Derived Subgroups							
PSA ≤ 10	14	5.9 (3.5 to 9.6)	15	6.2 (3.8 to 10.0)	0.3 (-4.1 to 4.8)	0.95 (0.47 to 1.91)	0.82
PSA ≤ 10, 4 y		2.1 (0.9 to 4.8)		2.1 (0.9 to 4.8)	-0.0 (-3.0 to 2.9)	1.01 (0.30 to 3.45)	
PSA ≤ 10, 8 y		3.4 (1.7 to 6.5)		3.7 (2.0 to 6.9)	0.4 (-3.2 to 4.0)	0.90 (0.35 to 2.29)	
PSA ≤ 10, 12 y		4.6 (2.6 to 8.1)		5.4 (3.2 to 9.0)	0.8 (-3.3 to 4.9)	0.86 (0.39 to 1.87)	
PSA > 10	7	5.6 (2.7 to 11.0)	16	12.8 (8.0 to 19.8)	7.2 (-0.0 to 14.8)	0.43 (0.18 to 1.02)	0.02
PSA > 10, 4 y		0.8 (0.1 to 4.4)		0.8 (0.1 to 4.4)	0.0 (-3.6 to 3.7)	0.99 (0.06 to 15.69)	
PSA > 10, 8 y		2.4 (0.8 to 6.8)		7.2 (3.8 to 13.1)	4.8 (-0.7 to 10.9)	0.33 (0.09 to 1.19)	
PSA > 10, 12 y		4.0 (1.7 to 9.0)		11.2 (6.8 to 17.9)	7.2 (0.6 to 14.3)	0.35 (0.13 to 0.95)	
Risk – Low (Local)	6	4.1 (1.9 to 8.6)	4	2.7 (1.1 to 6.7)	-1.4 (-6.2 to 3.2)	1.50 (0.43 to 5.21)	0.54
Risk – Low, 4 y		0.7 (0.1 to 3.7)		1.4 (0.4 to 4.8)	0.7 (-2.5 to 4.2)	0.50 (0.05 to 5.45)	
Risk – Low, 8 y		1.4 (0.4 to 4.8)		2.0 (0.7 to 5.8)	0.7 (-3.0 to 4.6)	0.67 (0.11 to 3.93)	
Risk – Low, 12 y		2.7 (1.1 to 6.7)		2.7 (1.1 to 6.7)	0.0 (-4.4 to 4.4)	1.00 (0.25 to 3.92)	
Risk – Int (Local)	8	6.2 (3.2 to 11.8)	13	10.8 (6.4 to 17.7)	4.6 (-2.5 to 12.1)	0.57 (0.25 to 1.33)	0.12

CAP-Specific Mortality	Cumulative Incidence				Absolute risk reduction % (95% CI)	Relative risk (95% CI)	p-value
	Radical prostatectomy		Observation				
	No.	% (95% CI)	No.	% (95% CI)			
Risk – Int, 4 y		2.3 (0.8 to 6.6)		1.7 (0.5 to 5.9)	-0.7 (-5.1 to 3.8)	1.40 (0.24 to 8.21)	
Risk – Int, 8 y		3.9 (1.7 to 8.8)		5.8 (2.9 to 11.6)	2.0 (-3.8 to 8.1)	0.66 (0.22 to 2.04)	
Risk – Int, 12 y		4.7 (2.2 to 9.8)		9.2 (5.2 to 15.7)	4.5 (-2.0 to 11.5)	0.51 (0.19 to 1.33)	
Risk – High (Local)	7	9.1 (4.5 to 17.6)	14	17.5 (10.7 to 27.3)	8.4 (-2.5 to 19.2)	0.52 (0.22 to 1.22)	0.04
Risk – High, 4 y		2.6 (0.7 to 9.0)		2.5 (0.7 to 8.7)	-0.1 (-6.7 to 6.4)	1.04 (0.15 to 7.19)	
Risk – High, 8 y		5.2 (2.0 to 12.6)		10.0 (5.2 to 18.5)	4.8 (-4.1 to 13.9)	0.52 (0.16 to 1.66)	
Risk – High, 12 y		7.8 (3.6 to 16.0)		15.0 (8.8 to 24.4)	7.2 (-3.1 to 17.5)	0.52 (0.21 to 1.31)	
Risk – Low (Central)	1	0.9 (0.2 to 4.9)	5	4.1 (1.8 to 9.2)	3.2 (-1.5 to 8.4)	0.22 (0.03 to 1.85)	0.13
Risk – Low, 4 y		0.0 (0.0 to 3.4)		1.6 (0.5 to 5.8)	1.6 (-1.9 to 5.8)	-----	
Risk – Low, 8 y		0.9 (0.2 to 4.9)		3.3 (1.3 to 8.1)	2.4 (-2.1 to 7.3)	0.27 (0.03 to 2.42)	
Risk – Low, 12 y		0.9 (0.2 to 4.9)		4.1 (1.8 to 9.2)	3.2 (-1.5 to 8.4)	0.22 (0.03 to 1.85)	
Risk – Int (Central)	11	7.1 (4.0 to 12.3)	8	5.8 (2.9 to 11.0)	-1.3 (-7.2 to 4.7)	1.23 (0.51 to 2.98)	0.84
Risk – Int, 4 y		2.6 (1.0 to 6.5)		0.0 (0.0 to 2.7)	-2.6 (-6.5 to 0.5)	-----	
Risk – Int, 8 y		3.2 (1.4 to 7.3)		2.2 (0.7 to 6.2)	-1.1 (-5.4 to 3.3)	1.49 (0.36 to 6.14)	
Risk – Int, 12 y		4.5 (2.2 to 9.0)		4.3 (2.0 to 9.1)	-0.2 (-5.3 to 5.1)	1.05 (0.36 to 3.04)	
Risk – High (Central)	9	11.5 (6.2 to 20.5)	17	20.0 (12.9 to 29.7)	8.5 (-3.0 to 19.6)	0.58 (0.27 to 1.22)	0.05
Risk – High, 4 y		2.6 (0.7 to 8.9)		3.5 (1.2 to 9.9)	1.0 (-5.8 to 7.6)	0.73 (0.12 to 4.23)	
Risk – High, 8 y		6.4 (2.8 to 14.1)		11.8 (6.5 to 20.3)	5.4 (-4.0 to 14.7)	0.54 (0.19 to 1.52)	
Risk – High, 12 y		10.3 (5.3 to 19.0)		17.7 (11.0 to 27.1)	7.4 (-3.6 to 18.1)	0.58 (0.26 to 1.30)	
Gleason (Local) < 7	11	4.3 (2.4 to 7.6)	15	5.8 (3.5 to 9.3)	1.4 (-2.5 to 5.4)	0.75 (0.35 to 1.61)	0.34
Gleason < 7, 4 y		0.8 (0.2 to 2.8)		1.5 (0.6 to 3.9)	0.8 (-1.5 to 3.2)	0.51 (0.09 to 2.78)	
Gleason < 7, 8 y		1.6 (0.6 to 4.0)		3.5 (1.8 to 6.4)	1.9 (-1.0 to 5.0)	0.46 (0.14 to 1.46)	
Gleason < 7, 12 y		2.8 (1.3 to 5.6)		5.0 (2.9 to 8.3)	2.2 (-1.3 to 5.9)	0.55 (0.22 to 1.36)	
Gleason (Local) ≥ 7	10	10.2 (5.6 to 17.8)	15	17.4 (10.9 to 26.8)	7.2 (-2.8 to 17.7)	0.59 (0.28 to 1.23)	0.10
Gleason ≥ 7, 4 y		4.1 (1.6 to 10.0)		2.3 (0.6 to 8.1)	-1.8 (-7.9 to 4.5)	1.76 (0.33 to 9.35)	
Gleason ≥ 7, 8 y		7.1 (3.5 to 14.0)		9.3 (4.8 to 17.3)	2.2 (-6.1 to 10.9)	0.77 (0.29 to 2.03)	
Gleason ≥ 7, 12 y		9.2 (4.9 to 16.5)		15.1 (9.1 to 24.2)	5.9 (-3.6 to 15.9)	0.61 (0.27 to 1.35)	
Gleason (Central) < 7	2	1.2 (0.3 to 4.2)	9	4.6 (2.4 to 8.5)	3.4 (-0.3 to 7.4)	0.26 (0.06 to 1.18)	0.07
Gleason < 7, 4 y		0.0 (0.0 to 2.2)		1.0 (0.3 to 3.6)	1.0 (-1.3 to 3.6)	-----	

CAP-Specific Mortality	Cumulative Incidence				Absolute risk reduction % (95% CI)	Relative risk (95% CI)	p-value
	Radical prostatectomy		Observation				
	No.	% (95% CI)	No.	% (95% CI)			
Gleason < 7, 8 y		0.6 (0.1 to 3.3)		3.1 (1.4 to 6.5)	2.5 (-0.7 to 6.0)	0.19 (0.02 to 1.60)	
Gleason < 7, 12 y		0.6 (0.1 to 3.3)		4.1 (2.1 to 7.9)	3.5 (0.1 to 7.3)	0.15 (0.02 to 1.15)	
Gleason (Central) ≥ 7	19	10.9 (7.1 to 16.4)	21	14.2 (9.5 to 20.7)	3.3 (-4.0 to 10.8)	0.77 (0.43 to 1.38)	0.11
Gleason ≥ 7, 4 y		2.3 (0.9 to 5.8)		3.4 (1.5 to 7.7)	1.1 (-2.9 to 5.6)	0.68 (0.19 to 2.49)	
Gleason ≥ 7, 8 y		4.0 (2.0 to 8.1)		8.1 (4.7 to 13.6)	4.1 (-1.2 to 10.0)	0.50 (0.20 to 1.23)	
Gleason ≥ 7, 12 y		6.3 (3.6 to 11.0)		11.5 (7.3 to 17.6)	5.2 (-1.1 to 11.9)	0.55 (0.27 to 1.14)	

***P value:** from log-rank test for survival analysis

Risk Status: Low risk = PSA ≤ 10; Gleason histological score ≤ 6; tumor stage T1, T2a; Intermediate risk = PSA > 10 ≤ 20; Gleason score = 7; Stage T2b; High Risk = not low or intermediate risk but still clinically localized.

Y = year; Perf= Performance Status: 0= Fully Active; 1=Symptoms but ambulatory and able to do light work, 4= Completely disabled

Table S6: Bone Metastases: Cumulative Incidence

Bone Metastasis	Cumulative Incidence				Absolute risk reduction % (95% CI)	Relative risk (95% CI)	p-value
	Radical prostatectomy		Expectant Management				
	No.	% (95% CI)	No.	% (95% CI)			
Overall	17	4.7 (2.9 to 7.4)	39	10.6 (7.9 to 14.2)	6.0 (2.1 to 9.9)	0.44 (0.25 to 0.76)	0.001
All ages, 4 y		1.4 (0.6 to 3.2)		3.3 (1.9 to 5.6)	1.9 (-0.4 to 4.4)	0.42 (0.15 to 1.18)	
All ages, 8 y		1.9 (0.9 to 3.9)		7.1 (4.9 to 10.2)	5.2 (2.2 to 8.4)	0.27 (0.12 to 0.62)	
All ages, 12 y		3.9 (2.3 to 6.4)		9.5 (6.9 to 13.0)	5.7 (2.1 to 9.5)	0.40 (0.22 to 0.74)	
Age < 65	7	5.7 (2.8 to 11.4)	13	9.9 (5.9 to 16.2)	4.2 (-2.7 to 11.2)	0.58 (0.24 to 1.40)	0.19
Age < 65, 4 y		2.5 (0.8 to 7.0)		1.5 (0.4 to 5.4)	-0.9 (-5.6 to 3.3)	1.61 (0.27 to 9.48)	
Age < 65, 8 y		2.5 (0.8 to 7.0)		4.6 (2.1 to 9.6)	2.1 (-3.0 to 7.4)	0.54 (0.14 to 2.10)	
Age < 65, 12 y		4.9 (2.3 to 10.3)		9.2 (5.3 to 15.3)	4.2 (-2.4 to 11.0)	0.54 (0.21 to 1.39)	
Age ≥ 65	10	4.1 (2.3 to 7.4)	26	11.0 (7.6 to 15.7)	6.9 (2.2 to 11.9)	0.38 (0.19 to 0.76)	0.002
Age ≥ 65, 4 y		0.8 (0.2 to 3.0)		4.2 (2.3 to 7.6)	3.4 (0.5 to 6.9)	0.20 (0.04 to 0.88)	
Age ≥ 65, 8 y		1.7 (0.6 to 4.2)		8.5 (5.6 to 12.7)	6.8 (3.0 to 11.2)	0.20 (0.07 to 0.56)	
Age ≥ 65, 12 y		3.3 (1.7 to 6.4)		9.8 (6.6 to 14.2)	6.4 (2.0 to 11.2)	0.34 (0.15 to 0.74)	
Race – White	12	5.2 (3.0 to 8.8)	28	12.7 (9.0 to 17.8)	7.6 (2.3 to 13.1)	0.41 (0.21 to 0.78)	0.002
Race – White, 4 y		2.2 (0.9 to 4.9)		5.0 (2.8 to 8.7)	2.8 (-0.7 to 6.8)	0.43 (0.15 to 1.22)	
Race – White, 8 y		2.2 (0.9 to 4.9)		10.0 (6.7 to 14.7)	7.8 (3.5 to 12.7)	0.22 (0.08 to 0.56)	
Race – White, 12 y		3.9 (2.1 to 7.2)		12.7 (9.0 to 17.8)	8.9 (3.8 to 14.2)	0.30 (0.15 to 0.63)	
Race – Black	3	2.7 (0.9 to 7.7)	8	6.6 (3.4 to 12.5)	3.9 (-2.0 to 10.1)	0.41 (0.11 to 1.50)	0.15
Race – Black, 4 y		--		--	--	--	
Race – Black, 8 y		1.8 (0.5 to 6.3)		2.5 (0.9 to 7.0)	0.7 (-4.1 to 5.4)	0.73 (0.12 to 4.27)	
Race – Black, 12 y		2.7 (0.9 to 7.7)		4.1 (1.8 to 9.3)	1.4 (-4.1 to 6.9)	0.65 (0.16 to 2.67)	
Race – Other	2	9.5 (2.7 to 28.9)	3	11.5 (4.0 to 29.0)	2.0 (-18.8 to 20.8)	0.83 (0.15 to 4.49)	0.83
Race – Other, 4 y		0.0 (0.0 to 15.5)		3.9 (0.7 to 18.9)	3.9 (-11.9 to 18.9)	--	
Race – Other, 8 y		0.0 (0.0 to 15.5)		3.9 (0.7 to 18.9)	3.9 (-11.9 to 18.9)	--	
Race – Other, 12 y		9.5 (2.7 to 28.9)		7.7 (2.1 to 24.1)	-1.8 (-22.0 to 16.0)	1.24 (0.19 to 8.06)	
PSA ≤ 10	12	5.0 (2.9 to 8.6)	21	8.7 (5.8 to 13.0)	3.7 (-1.0 to 8.4)	0.58 (0.29 to 1.15)	0.09
PSA ≤ 10, 4 y		1.7 (0.7 to 4.2)		2.9 (1.4 to 5.9)	1.2 (-1.7 to 4.4)	0.58 (0.17 to 1.95)	
PSA ≤ 10, 8 y		2.5 (1.2 to 5.4)		5.4 (3.2 to 9.0)	2.9 (-0.8 to 6.7)	0.47 (0.18 to 1.21)	
PSA ≤ 10, 12 y		4.2 (2.3 to 7.6)		7.9 (5.1 to 12.0)	3.7 (-0.7 to 8.2)	0.53 (0.25 to 1.12)	

Bone Metastasis	Cumulative Incidence				Absolute risk reduction % (95% CI)	Relative risk (95% CI)	p-value
	Radical prostatectomy		Expectant Management				
	No.	% (95% CI)	No.	% (95% CI)			
PSA > 10	5	4.0 (1.7 to 9.0)	18	14.4 (9.3 to 21.6)	10.4 (3.3 to 18.0)	0.28 (0.11 to 0.72)	0.001
PSA > 10, 4 y		0.8 (0.1 to 4.4)		4.0 (1.7 to 9.0)	3.2 (-1.0 to 8.3)	0.20 (0.02 to 1.67)	
PSA > 10, 8 y		0.8 (0.1 to 4.4)		10.4 (6.2 to 17.0)	9.6 (4.1 to 16.2)	0.08 (0.01 to 0.57)	
PSA > 10, 12 y		3.2 (1.2 to 7.9)		12.8 (8.0 to 19.8)	9.6 (2.9 to 16.9)	0.25 (0.09 to 0.72)	
Risk – Low (Local)	6	4.1 (1.9 to 8.6)	9	6.1 (3.2 to 11.2)	2.0 (-3.3 to 7.6)	0.67 (0.24 to 1.83)	0.39
Risk – Low, 4 y		0.7 (0.1 to 3.7)		2.7 (1.1 to 6.7)	2.0 (-1.4 to 6.1)	0.25 (0.03 to 2.21)	
Risk – Low, 8 y		1.4 (0.4 to 4.8)		4.1 (1.9 to 8.6)	2.7 (-1.4 to 7.3)	0.33 (0.07 to 1.62)	
Risk – Low, 12 y		2.7 (1.1 to 6.7)		6.1 (3.2 to 11.2)	3.4 (-1.6 to 8.7)	0.44 (0.14 to 1.41)	
Risk – Int (Local)	6	4.7 (2.2 to 9.8)	19	15.8 (10.4 to 23.4)	11.2 (3.7 to 19.2)	0.29 (0.12 to 0.71)	0.002
Risk – Int, 4 y		1.6 (0.4 to 5.5)		3.3 (1.3 to 8.3)	1.8 (-2.6 to 6.8)	0.47 (0.09 to 2.49)	
Risk – Int, 8 y		2.3 (0.8 to 6.6)		8.3 (4.6 to 14.7)	6.0 (0.3 to 12.5)	0.28 (0.08 to 0.99)	
Risk – Int, 12 y		4.7 (2.2 to 9.8)		12.5 (7.7 to 19.6)	7.9 (0.8 to 15.4)	0.37 (0.15 to 0.93)	
Risk – High (Local)	4	5.2 (2.0 to 12.6)	11	13.8 (7.9 to 23.0)	8.6 (-0.9 to 18.3)	0.38 (0.13 to 1.14)	0.03
Risk – High, 4 y		1.3 (0.2 to 7.0)		5.0 (2.0 to 12.2)	3.7 (-2.8 to 10.9)	0.26 (0.03 to 2.27)	
Risk – High, 8 y		1.3 (0.2 to 7.0)		12.5 (6.9 to 21.5)	11.2 (3.2 to 20.2)	0.10 (0.01 to 0.79)	
Risk – High, 12 y		3.9 (1.3 to 10.8)		13.8 (7.9 to 23.0)	9.9 (0.8 to 19.4)	0.28 (0.08 to 0.98)	
Risk – Low (Central)	1	0.9 (0.2 to 4.9)	6	4.9 (2.3 to 10.3)	4.0 (-0.8 to 9.5)	0.18 (0.02 to 1.50)	0.08
Risk – Low, 4 y		0.0 (0.0 to 3.4)		2.5 (0.8 to 7.0)	2.5 (-1.3 to 7.0)	--	
Risk – Low, 8 y		0.0 (0.0 to 3.4)		4.1 (1.8 to 9.2)	4.1 (0.0 to 9.2)	--	
Risk – Low, 12 y		0.0 (0.0 to 3.4)		4.9 (2.3 to 10.3)	4.9 (0.7 to 10.3)	--	
Risk – Int (Central)	10	6.5 (3.5 to 11.5)	16	11.5 (7.2 to 17.9)	5.1 (-1.6 to 12.1)	0.56 (0.26 to 1.19)	0.08
Risk – Int, 4 y		1.9 (0.7 to 5.5)		1.4 (0.4 to 5.1)	-0.5 (-4.2 to 3.4)	1.35 (0.23 to 7.93)	
Risk – Int, 8 y		3.2 (1.4 to 7.3)		5.0 (2.5 to 10.0)	1.8 (-3.0 to 7.1)	0.64 (0.21 to 1.97)	
Risk – Int, 12 y		5.8 (3.1 to 10.7)		8.6 (5.0 to 14.5)	2.8 (-3.2 to 9.3)	0.67 (0.29 to 1.55)	
Risk – High (Central)	5	6.4 (2.8 to 14.1)	15	17.7 (11.0 to 27.1)	11.2 (1.0 to 21.4)	0.36 (0.14 to 0.95)	0.01
Risk – High, 4 y		2.6 (0.7 to 8.9)		7.1 (3.3 to 14.6)	4.5 (-2.9 to 12.2)	0.36 (0.08 to 1.75)	
Risk – High, 8 y		2.6 (0.7 to 8.9)		14.1 (8.3 to 23.1)	11.6 (3.0 to 20.7)	0.18 (0.04 to 0.79)	
Risk – High, 12 y		5.1 (2.0 to 12.5)		17.7 (11.0 to 27.1)	12.5 (2.6 to 22.5)	0.29 (0.10 to 0.84)	
Charlson Score = 0	14	6.3 (3.8 to 10.2)	27	12.3 (8.6 to 17.3)	6.0 (0.6 to 11.6)	0.51 (0.27 to 0.94)	0.02

Bone Metastasis	Cumulative Incidence				Absolute risk reduction % (95% CI)	Relative risk (95% CI)	p-value
	Radical prostatectomy		Expectant Management				
	No.	% (95% CI)	No.	% (95% CI)			
Charlson = 0, 4 y		1.3 (0.5 to 3.9)		2.7 (1.3 to 5.8)	1.4 (-1.5 to 4.6)	0.49 (0.12 to 1.94)	
Charlson = 0, 8 y		2.2 (1.0 to 5.1)		7.7 (4.9 to 12.0)	5.5 (1.4 to 10.0)	0.29 (0.11 to 0.77)	
Charlson = 0, 12 y		4.9 (2.8 to 8.6)		10.9 (7.4 to 15.7)	6.0 (1.0 to 11.3)	0.45 (0.23 to 0.90)	
Charlson Score ≥ 1	3	2.1 (0.7 to 6.1)	12	8.2 (4.7 to 13.7)	6.0 (0.8 to 11.8)	0.26 (0.08 to 0.91)	0.02
Charlson ≥ 1, 4 y		1.4 (0.4 to 5.1)		4.1 (1.9 to 8.6)	2.7 (-1.6 to 7.3)	0.35 (0.07 to 1.71)	
Charlson ≥ 1, 8 y		1.4 (0.4 to 5.1)		6.1 (3.3 to 11.2)	4.7 (0.1 to 9.9)	0.23 (0.05 to 1.06)	
Charlson ≥ 1, 12 y		2.1 (0.7 to 6.1)		7.5 (4.2 to 12.9)	5.3 (0.2 to 10.9)	0.29 (0.08 to 1.01)	
Perf Status = 0	15	4.8 (2.9 to 7.8)	32	10.3 (7.4 to 14.2)	5.5 (1.4 to 9.8)	0.47 (0.26 to 0.84)	0.005
Perf Status = 0, 4 y		1.6 (0.7 to 3.7)		2.9 (1.5 to 5.4)	1.3 (-1.2 to 4.0)	0.55 (0.19 to 1.63)	
Perf Status = 0, 8 y		2.2 (1.1 to 4.6)		6.5 (4.2 to 9.8)	4.2 (1.0 to 7.7)	0.35 (0.15 to 0.81)	
Perf Status = 0, 12 y		4.2 (2.5 to 7.0)		9.0 (6.3 to 12.7)	4.9 (1.0 to 9.0)	0.46 (0.24 to 0.87)	
Perf Status = 1 – 4	2	3.9 (1.1 to 13.0)	7	12.3 (6.1 to 23.3)	8.4 (-2.6 to 19.8)	0.31 (0.07 to 1.44)	0.07
Perf Status = 1-4, 4 y		0.0 (0.0 to 6.9)		5.3 (1.8 to 14.4)	5.3 (-2.4 to 14.4)	--	
Perf Status = 1-4, 8 y		0.0 (0.0 to 6.9)		10.5 (4.9 to 21.1)	10.5 (1.7 to 21.1)	--	
Perf Status = 1-4, 12 y		1.9 (0.3 to 10.1)		12.3 (6.1 to 23.3)	10.4 (0.1 to 21.4)	0.16 (0.02 to 1.23)	
Gleason (Local) < 7	9	3.5 (1.9 to 6.6)	21	8.1 (5.3 to 12.0)	4.5 (0.4 to 8.9)	0.44 (0.21 to 0.94)	0.02
Gleason < 7, 4 y		0.4 (0.1 to 2.2)		2.7 (1.3 to 5.4)	2.3 (0.0 to 5.1)	0.15 (0.02 to 1.18)	
Gleason < 7, 8 y		1.2 (0.4 to 3.4)		5.4 (3.2 to 8.8)	4.2 (1.1 to 7.7)	0.22 (0.06 to 0.76)	
Gleason < 7, 12 y		2.4 (1.1 to 5.1)		7.7 (5.0 to 11.5)	5.3 (1.5 to 9.4)	0.31 (0.13 to 0.76)	
Gleason (Local) ≥ 7	7	7.1 (3.5 to 14.0)	18	20.9 (13.7 to 30.7)	13.8 (3.8 to 24.2)	0.34 (0.15 to 0.78)	0.003
Gleason ≥ 7, 4 y		3.1 (1.1 to 8.6)		5.8 (2.5 to 12.9)	2.8 (-3.7 to 10.1)	0.53 (0.13 to 2.14)	
Gleason ≥ 7, 8 y		3.1 (1.1 to 8.6)		14.0 (8.2 to 22.8)	10.9 (2.9 to 20.0)	0.22 (0.06 to 0.75)	
Gleason ≥ 7, 12 y		7.1 (3.5 to 14.0)		17.4 (10.9 to 26.8)	10.3 (0.8 to 20.3)	0.41 (0.18 to 0.96)	
Gleason (Central) < 7	2	1.2 (0.3 to 4.2)	8	4.1 (2.1 to 7.9)	2.9 (-0.8 to 6.8)	0.29 (0.06 to 1.35)	0.10
Gleason < 7, 4 y		0.0 (0.0 to 2.2)		1.5 (0.5 to 4.4)	1.5 (-0.9 to 4.4)	--	
Gleason < 7, 8 y		0.0 (0.0 to 2.2)		2.6 (1.1 to 5.8)	2.6 (-0.1 to 5.8)	--	
Gleason < 7, 12 y		0.6 (0.1 to 3.3)		3.6 (1.7 to 7.2)	3.0 (-0.3 to 6.6)	0.17 (0.02 to 1.34)	
Gleason (Central) ≥ 7	14	8.1 (4.9 to 13.1)	29	19.6 (14.0 to 26.7)	11.6 (4.0 to 19.4)	0.41 (0.23 to 0.75)	0.0001
Gleason ≥ 7, 4 y		2.9 (1.2 to 6.6)		5.4 (2.8 to 10.3)	2.5 (-2.0 to 7.7)	0.53 (0.18 to 1.59)	

	Cumulative Incidence				Absolute risk reduction % (95% CI)	Relative risk (95% CI)	p-value
	Radical prostatectomy		Expectant Management				
	No.	% (95% CI)	No.	% (95% CI)			
Bone Metastasis							
Gleason \geq 7, 8 y		4.0 (2.0 to 8.1)		12.8 (8.4 to 19.2)	8.8 (2.8 to 15.5)	0.31 (0.14 to 0.72)	
Gleason \geq 7, 12 y		6.9 (4.0 to 11.7)		17.6 (12.3 to 24.5)	10.7 (3.6 to 18.2)	0.39 (0.21 to 0.75)	

***P value:** from log-rank test for survival analysis

Risk Status: Low risk = PSA \leq 10; Gleason histological score \leq 6; tumor stage T1, T2a; Intermediate risk = PSA $>$ 10 \leq 20; Gleason score = 7; Stage T2b; High Risk = not low or intermediate risk but still clinically localized.

Y = year; **Perf**= Performance Status: 0= Fully Active; 1=Symptoms but ambulatory and able to do light work, 4= Completely disabled

Figure S1

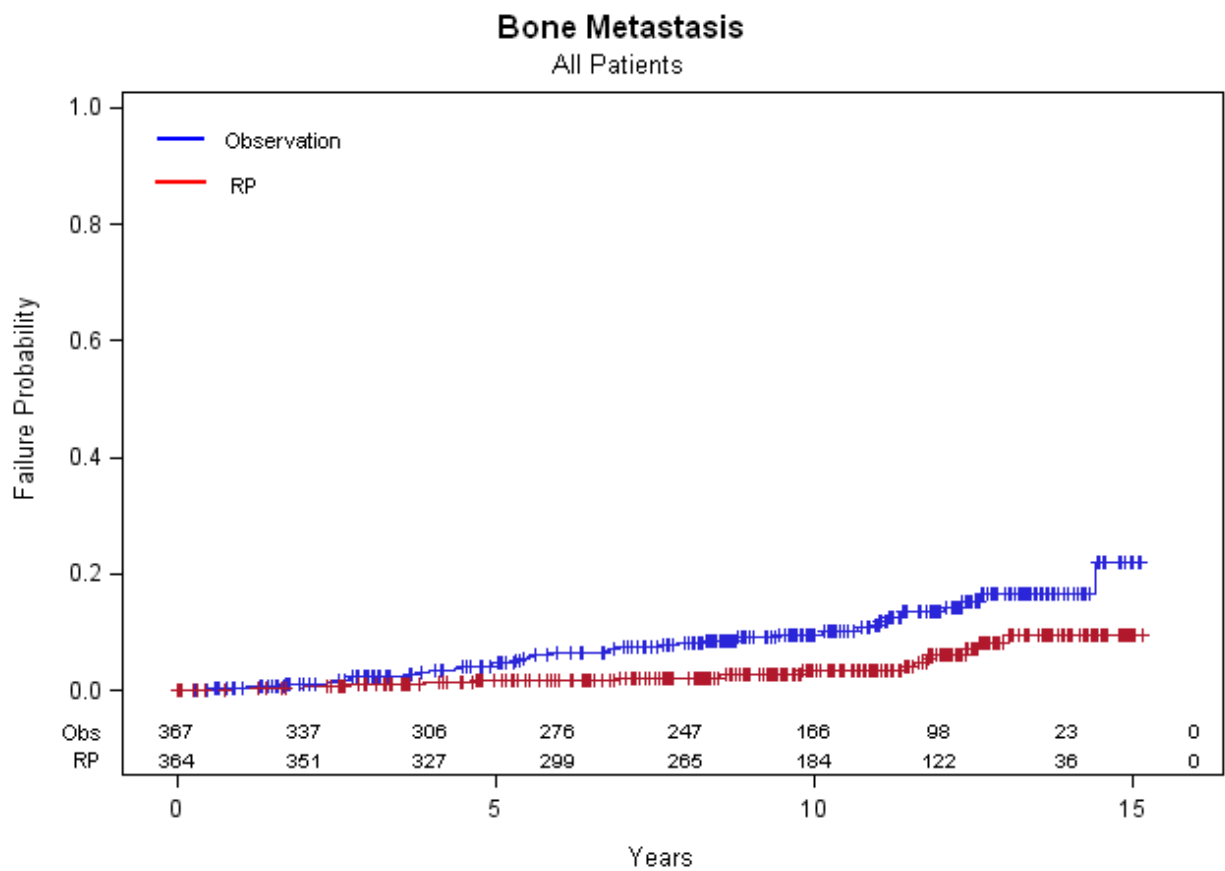


Figure S2a: All cause mortality: PSA <= 10 ng/mL

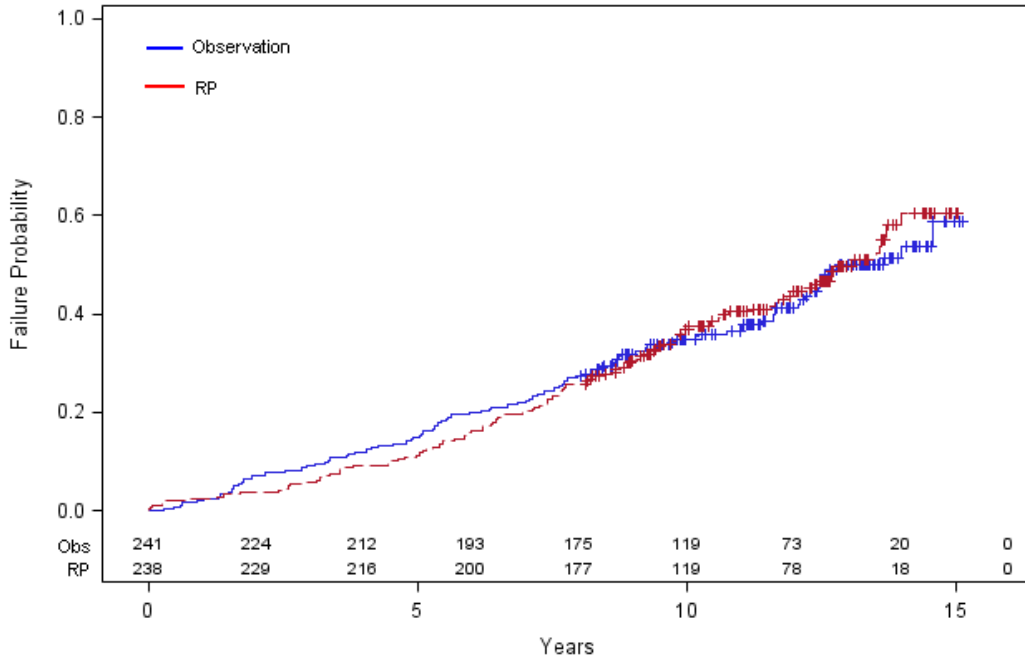


Figure S2b: All cause mortality: PSA > 10 ng/mL

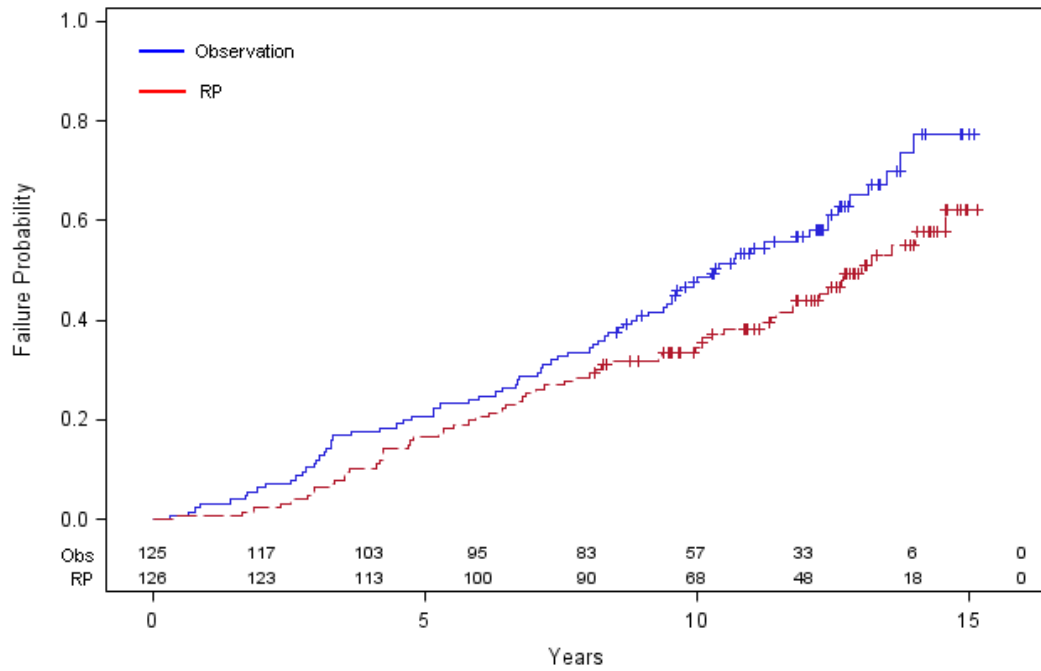


Figure S2c-e. All-cause Mortality By Risk Category: c: Low Risk; d: Intermediate Risk; e: High Risk

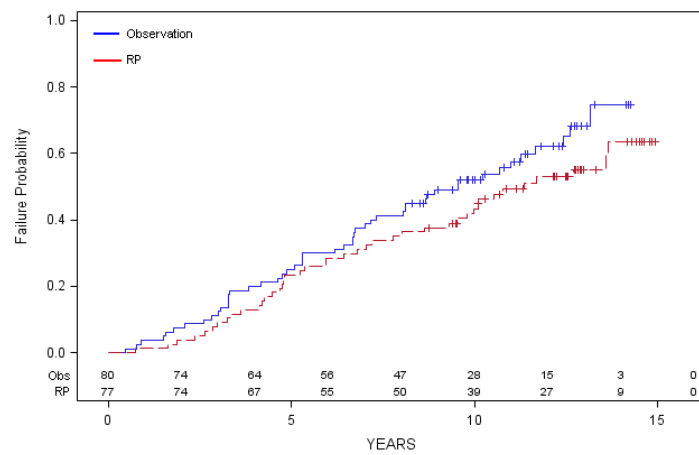
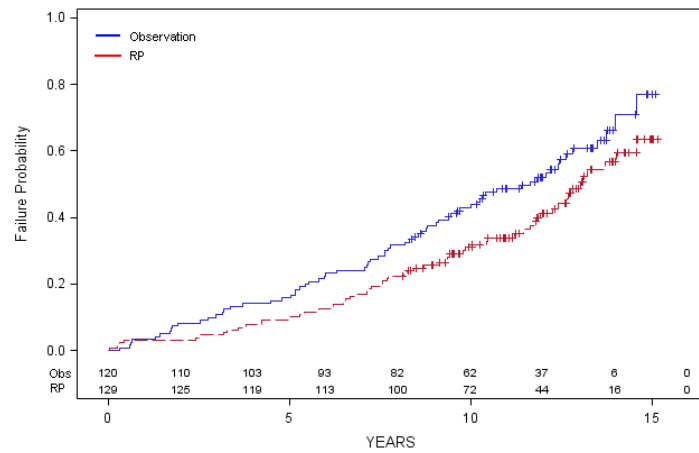
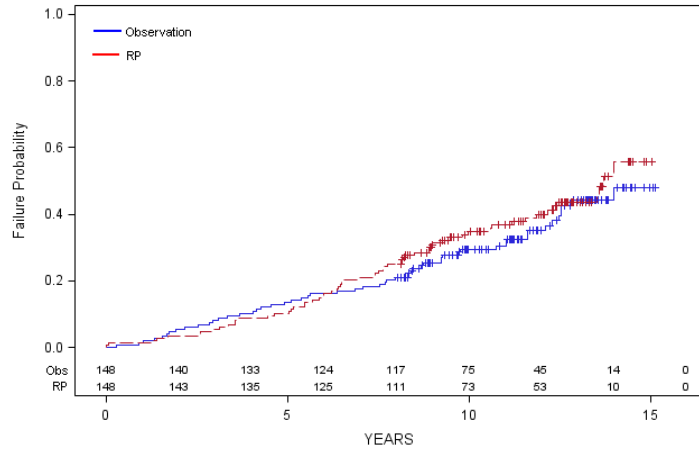


Figure S3a: Prostate cancer mortality: PSA \leq 10 ng/mL

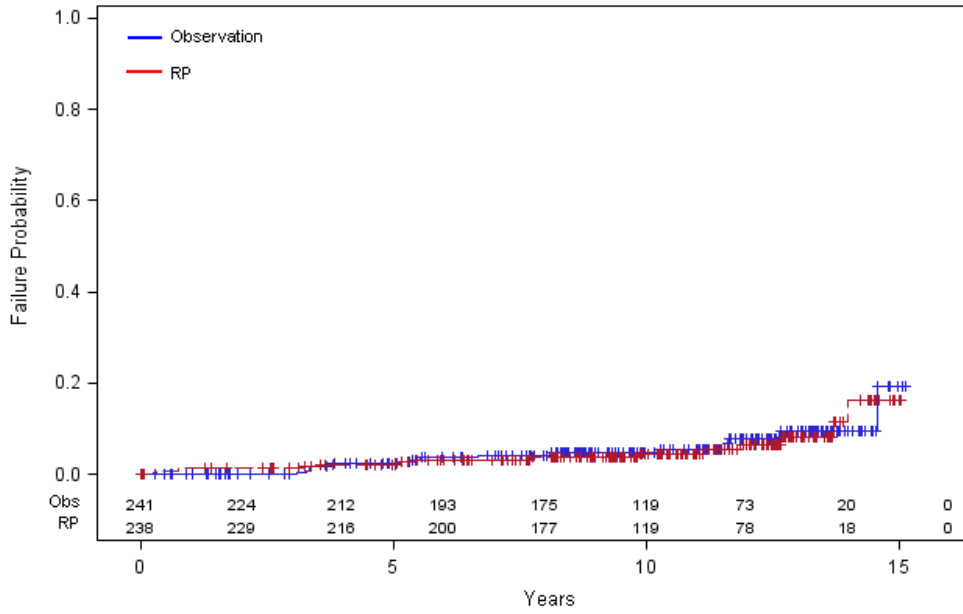


Figure S3b: Prostate cancer mortality: PSA >10 ng/mL

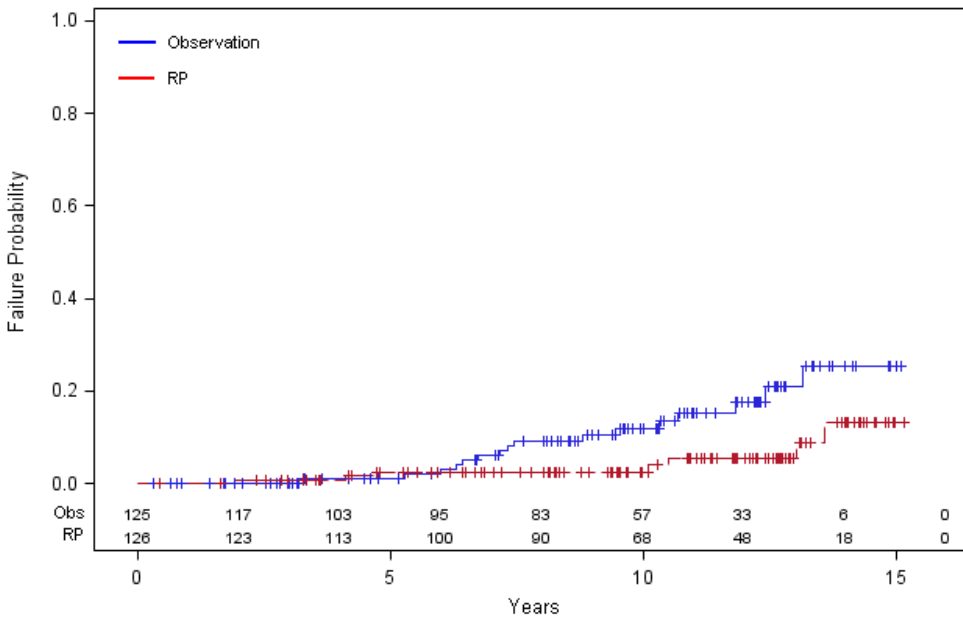
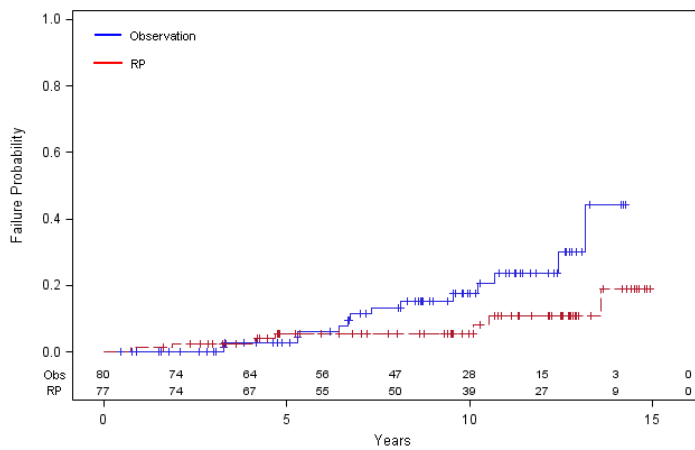
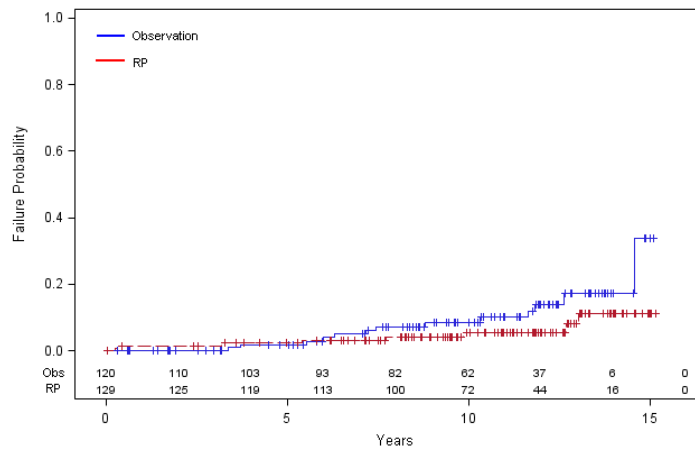
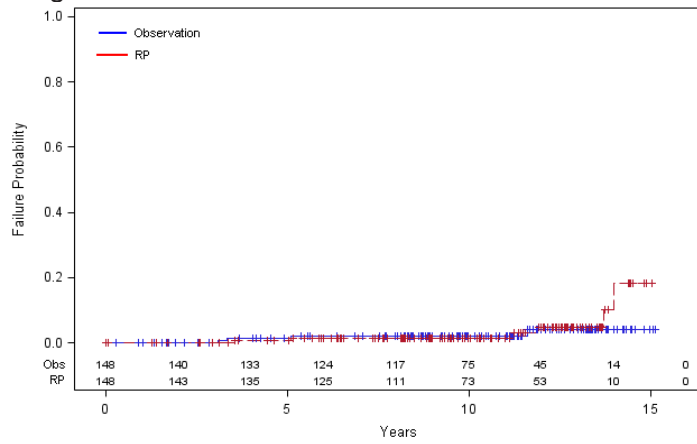


Figure S3c-e: Prostate Cancer Mortality By Risk Category: c: Low Risk; d: Intermediate Risk; e = High Risk



Legends:

Figure 1: Screening, Randomization, and Follow-up. *: EBRT=External Beam Radiation Therapy

Figure 2a: Cumulative incidence of death in the two study groups overall: Hazard Ratio = 0.88; (95%CI= 0.71 to 1.08); p = 0.22; absolute risk reduction = 2.9%; (95%CI= -4.1 to 10.3)

Figure 2b: Cumulative incidence of prostate cancer death in the two groups overall: Hazard Ratio = 0.63; (95%CI= 0.36 to 1.09); p = 0.09; Absolute risk reduction = 2.7%; (95%CI= -1.3 to 6.2).

Figure 3a-b: Subgroup analysis for the Primary (all-cause mortality) (Panel A) and Secondary outcome (prostate cancer mortality) (Panel B). The size of the squares are proportional to the size of the subgroups. Horizontal bars represent 95% confidence intervals.

Appendix Figure 1: Bone Metastases: Cumulative incidence of bone metastases in the two study groups. Hazard ratio = 0.39; (95%CI=0.22 to 0.70); p = 0.0009; Absolute risk reduction = 6.0% (95%CI=2.1 to 9.9).

Appendix Figure 2a-e: Cumulative incidence of all-cause mortality in the two study groups according to tumor subgroups: Panel A: PSA \leq 10; Panel B: PSA > 10; Panel C: Low D'Amico Tumor Risk Category; Panel D: Intermediate D'Amico Tumor Risk Category; Panel E: High D'Amico Tumor Risk Category.

Appendix Figure 3a-e: Cumulative incidence of prostate cancer mortality in the two study groups according to tumor subgroups: Panel A: PSA \leq 10; Panel B: PSA > 10; Panel C: Low D'Amico Tumor Risk Category; Panel D: Intermediate D'Amico Tumor Risk Category; Panel E: High D'Amico Tumor Risk Category.

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