Table F-6. Prostate cancer–specific mortality and cause-specific survival (nonrandomized comparative studies)

| **Study Outcomes** | **Treatment Group 1** | **Treatment Group 2** | | **Treatment Group 3** | **Analyses; p-Values** |
| --- | --- | --- | --- | --- | --- |
| Alemozaffar et al. 201468 | RALP: 282 patients | Open RRP: 621 patients | | NA | — |
| Deaths attributed to prostate cancer | 0 cases | 2 cases | | NA | — |
| Mukherjee et al. 201437 | RP: 5,805 patients | EBRT: 2,183 patients | | BT: 2,936 patients | — |
| Cause of death prostate cancer (median followup 3.05 years) | 23.7% | 28.8% | | 14.2% | — |
| DeGroot et al. 201341 | RP: 494 patients (458 cohort and 36 cases) | EBRT: 596 patients (518 cohort and 78 cases) | | NA | — |
| Prostate cancer–specific mortality at median followup of 51 months | Adjusted HRs for risk of prostate cancer death for EBRT compared to RP for entire study population were 1.62 (95% CI, 1.00 to 2.61) and 2.02 (95% CI 1.19 to 3.43) analyzing by intent-to-treat and treatment received, respectively. | | | | — |
| Intent-to-treat analysis for low-risk group (PSA ≤10, Gleason score ≤6 and T category ≤T2a) (n=386; 371 cohort and 15 cases) | EBRT vs. RP: HR 0.87; 95% CI 0.28 to 2.76 | | | | — |
| Intent-to-treat analysis for intermediate-risk group (patients who were not low risk and had a PSA ≤20, Gleason score ≤7 and T category ≤T2b) (n=698: 599 cohort and 99 cases) | EBRT vs. RP; HR 1.57; 95% 0.95 to 2.61 | | | | — |
| Effect of comorbidity on prostate cancer–specific mortality | Authors only reported that they investigated whether the competing risk of death from comorbid illness could explain their findings and found that none of their results were statistically significant. | | | | — |
| Hoffman et al. 201338 | RP: 1,164 patients | EBRT with or without ADT: 491 patients | | NA | — |
| Prostate cancer–specific mortality after 15 years of followup | HR, 0.35; 95% CI, 0.26 to 0.49 | | | | p<0.0001 |
| Prostate cancer–specific mortality among men aged 55 to 64 years | RP; 2.4% (15 of 628) vs. EBRT: 11.5% (15 of 131), HR, 0.21; 95% CI, 0.13 to 0.36. | | | | — |
| Prostate cancer–specific mortality among men aged 65 to 74 years | RP: 5.6% (30 of 536) vs. EBRT: 12.2% (44 of 360), HR, 0.45; 95% CI, 0.31 to 0.65 | | | | p=0.02. |
| Prostate cancer–specific mortality among men who had no comorbidity | RP: 3.5% (18 of 513) vs. EBRT: 15.1% (24 of 159), HR, 0.19; 95% CI, 0.12 to 0.31 | | | | — |
| Prostate cancer–specific mortality among men who reported any comorbidity | RP: 4.1% (27 of 651) vs. EBRT: 10.5% (35 of 332) men in the EBRT group, HR, 0.49; 95% CI, 0.34 to 0.72 | | | | p=0.001 |
| Prostate cancer–specific mortality among men with high-risk tumors, diagnostic PSA >10 ng/mL or Gleason score ≥8, | RP: 6.6% (25 of 381) vs. EBRT plus ADT: 21.4% (12 of 56), HR, 0.36; 95% CI, 0.20 to 0.64 | | | | — |
| Prostate cancer–specific mortality among men with low-risk tumors, diagnostic PSA <10 ng/mL or Gleason score ≤6 | RP: 1.8% (10 of 558) vs. EBRT: 3.6% (7 of 195), HR, 0.66; 95% CI, 0.35 to 1.25 | | | | p=0.13 |
| Liu et al. 201379 | RP: 1,624 patients | | ADT: 1,624 patients | | — |
| Prostate cancer–specific mortality at median followup of 2.95 years in the RP group and 2.87 years in the ADT group, n (%) | 4 (0.25) | | 60 (3.69) | | HR 12.47 (4.48 to 34.70), p<0.001 |
| Prostate cancer–specific mortality among white men at 2.95 years median followup in the RP group and 2.87 years median followup in the ADT | ADT vs. RP: HR 0.94 (95% CI, 0.49 to 1.82) | | | | p=0.86 |
| Prostate cancer–specific mortality among men with CCI ≤2 at 2.95 years median followup in the RP group and 2.87 years median followup in the ADT group | ADT vs. RP: HR 0.82 (95% CI, 0.40 to 1.68). | | | | p=0.59 |
| Prostate cancer–specific mortality among men with CCI >2 at 2.95 years median followup in the RP group and 2.87 years median followup in the ADT group | ADT vs. RP: HR 1.12 (95% CI, 0.35 to 3.65) | | | | p=0.85 |
| Prostate cancer–specific mortality among men with low PSA at 2.95 years median followup in the RP group and 2.87 years median followup in the ADT group | ADT vs. RP: HR 2.68 (95% CI, 0.58 to 12.27) | | | | p=0.21 |
| Prostate cancer–specific mortality among men with medium PSA at 2.95 years median followup in the RP group and 2.87 years median followup in the ADT group | ADT vs. RP: HR 2.43 (95% CI, 0.71 to 8.38) | | | | p=0.16 |
| Prostate cancer–specific mortality among men with high PSA at 2.95 years median followup in the RP group and 2.87 years median followup in the ADT group | ADT vs. RP: HR 1.23 (95% CI, 0.15 to 9.96) | | | | p=0.84 |
| Prostate cancer–specific mortality among men with unknown PSA at 2.95 years median followup in the RP group and 2.87 years median followup in the ADT group | ADT vs. RP: HR 2.43 (95% CI, 0.79 to 7.49) | | | | p=0.12 |
| Prostate cancer–specific mortality among men with T2 stage at 2.95 years median followup in the RP group and 2.87 years median followup in the ADT group | ADT vs. RP: HR 1.71 (95% CI, 0.86 to 3.42) | | | | p=0.13 |
| Prostate cancer–specific mortality among men with worse Gleason score at 2.95 years median followup in the RP group and 2.87 years median followup in the ADT group | ADT vs. RP: HR 3.16 (95% CI, 1.77 to 5.64) | | | | p<0.001 |
| Marina et al. 201386 | Image-guided radiation therapy (IGRT): 734 patients | BT: 282 patients | | NA | — |
| 5-year overall survival, % (range) | 99 (98–100) | 100 | | — | 0.55 |
| 8-year overall survival, % (range) | 99 (97–100) | 100 | | — |
| 5-year cause-specific survival by patient characteristics  *In this study, the authors defined cause-specific survival as death attributed to prostate cancer at their institutional cancer registry.* | Age <60 years: IGRT 100% vs. BT 100%  Age 60–69 years: IGRT 99% vs. BT 100%  Age ≥70 years: IGRT 99% vs. BT 100%  Race, African American: IGRT 100% vs. BT 100%  Race, European American: IGRT 99% vs. BT 100%  Race, Other: IGRT 100% vs. BT 100% | | | — | — |
| 5-year cause-specific survival by tumor characteristics | PSA <10 ng/mL: IGRT 99% vs. BT 100%  PSA 10–20 ng/mL: IGRT 99% vs. BT 100%  Gleason score ≤6: IGRT 100% vs. BT 100%  Gleason score 3+4: IGRT 99% vs. BT 100%  Gleason score 4+3: IGRT 98% vs. 100 BT%  Stage T1-2a: IGRT 99% vs. BT 100%  Stage T2b–2c: IGRT 99% vs. BT 100% | | | — | — |
| Nepple et al. 201340 | RP: 4,459 patients | EBRT: 1,261 patients | | BT: 972 patients | — |
| Prostate cancer–specific mortality among men after median followup of 7.2 years | EBRT was associated with an increase in prostate cancer–specific mortality compared with RP (HR, 1.66; 95% CI, 1.05 to 2.63), while there was no statistically significant increase with BT (HR, 1.83; 95% CI, 0.88 to 3.82) compared with RP. | | | | — |
| Abdollah et al. 201259 | EBRT: 20,986 patients in propensity score matched cohort | Observation: 20,986 patients in propensity score matched cohort | | NA | For patients with low-intermediate risk prostate cancer, 10 year prostate cancer–specific mortality was 3.7% for patients treated with radiotherapy vs. 4.1% for patients undergoing observation (p=0.1).  For patients with high-risk prostate cancer, 10 year prostate cancer–specific mortality was 8.8% for patients treated with radiotherapy vs. 14.4% for patients undergoing observation (p=0.001).  In the multivariate analysis, radiotherapy was not an independent predictor of prostate cancer–specific mortality in patients with low-intermediate risk prostate cancer (HR 0.91 (0.80 to 1.04), p=0.2). Radiotherapy was an independent risk factor in patients with high-risk PC (HR 0.59 (0.50 to 0.68), p<0.001).  CCI=0: HR 0.81  (0.67–0.98), 0.03  CCI=1: HR 0.87  (0.75–0.99), p=0.04.  CCI ≥2: HR 0.79  (0.65–0.96), p=0.01.  Age 65 to 69 years: HR 0.93 (0.72–1.19) p=0.6  Age 70 to 74 years: HR 0.84 (0.68–1.03) p=0.08  Age 65 to 69 years: HR 0.70 (0.59–0.80) p<0.001 |
| Kibel et al. 201275  Adjusted 10-year prostate cancer–specific mortality | RP: 1.8% (95% CI, 1.6–2.1) | EBRT: 2.9% (95% CI, 2.6–3.3) | | BT: 2.3% (95% CI, 2.0–2.6) | Kaplan-Meier analysis p-value NR. |
| Overall prostate cancer–specific mortality multivariable analysis (treatment group) | 1.0 (referent) | 1.5 (95% CI, 1.0–2.3) | | 1.3 (95% CI, 0.7–2.4) | HR p-value: 0.13 |
| Overall prostate cancer–specific mortality multivariable analysis (patient age) | NA | NA | | NA | HR 0.8 (95% CI, 0.5 to 1.3), p=0.065 |
| Overall prostate cancer–specific mortality multivariable analysis (African-American ethnicity) | NA | NA | | NA | HR 0.7 (95% CI, 0.4 to 1.2), p=0.18 |
| Overall prostate cancer–specific mortality multivariable analysis (comorbidity) | NA | NA | | NA | HR none=1.0 (referent); mild 1.2 (0.8–1.7), moderate 1.4 (0.9–2.3), severe 0.7 (0.2–2.9), p=0.4. |
| Overall prostate cancer–specific mortality multivariable analysis (pretreatment PSA) | NA | NA | | NA | HR 1.7 (95% CI, 1.1–2.5), p=0.017. |
| Overall prostate cancer–specific mortality multivariable analysis (bSG) | NA | NA | | NA | HR 2 to 6=1.0 (referent), 7=2.9 (1.8–4.5), 8 to 10=11.1 (6.5–18.9), p<0.001 |
| Overall prostate cancer–specific mortality multivariable analysis (clinical stage) | NA | NA | | NA | HR T1c=1.0 (referent), T1ab=0.3 (0.1–1.0), T2a=0.4 (0.1–1.5), T2b=0.5 (0.1–1.6), T2c=0.5 (0.1–1.7), T3=0.8 (0.2–2.9), p‑value=0.12. |
| Overall prostate cancer–specific mortality by D’Amico risk classification (low) | NA | NA | | NA | HR for EBRT vs. RP: 1.8 (0.5–6.2), p=0.4.  HR for BT vs. RP: 2.3 (0.8–6.9), p=0.14. |
| Overall prostate cancer–specific mortality by D’Amico risk classification (intermediate) | NA | NA | | NA | HR for EBRT vs. RP: 1.8 (0.8–3.8), p=0.13.  HR for BT vs. RP: 0.6 (0.1–2.7), p=0.5. |
| Overall prostate cancer–specific mortality by D’Amico risk classification (high) | NA | NA | | NA | HR for EBRT vs. RP: 1.3 (0.8–2.1), p=0.2.  HR for BT vs. RP: 1.6 (0.4–6.6), p=0.5. |
| Rosenberg et al. 201276  Prostate cancer–specific mortality | BT plus EBRT: 186 patients | BT plus ADT: 621 patients | | NA | HR Adjusted for age and prostate cancer prognostic factors 4.03 (95% CI, 1.17 to 13.89), p=0.027. Estimates of prostate cancer–specific mortality at 5 years was 3.3% (95% CI, 1.020 to 7.772) in men treated with EBRT and BT compared with 1.1% (95% CI, 0.417 to 2.510) those receiving ADT and brachytherapy. |
| Prostate cancer–specific mortality | NA | NA | | NA | Multivariate HR adjusted for age: 1.086 (95% CI, 0.955–1.235), p=0.21 |
| Prostate cancer–specific mortality | NA | NA | | NA | Multivariate HR adjusted for PSA: 8.029 (95% CI, 2.38–28.8), p=0.0014 |
| Prostate cancer–specific mortality | NA | NA | | NA | Multivariate HR adjusted for AJCC T category:  T1a to c, T2a 1.0 referent, T2b 0.681 (0.092–5.036), p=0.71 |
| Prostate cancer–specific mortality | NA | NA | | NA | Multivariate HR adjusted for Gleason score: ≤6=1.0 referent, 3+4: 7.463 (95% CI, 0.816–68.23), p=0.075  4+3: 8.882 (1.095–72.04), p=0.041 |
| Shen et al. 201284 | BT: 910 patients | BT plus EBRT: 2,466 patients | | EBRT: 9,369 patients | A Log rank test was performed for unadjusted comparisons. For multivariate analysis an adjusted HR using the Cox model was created controlling for diagnosis, age, race, urban residence, income, prior malignancy, stage and PSA. |
| Prostate cancer–specific mortality- univariate analysis | NA | NA | | NA | Log rank test: Prostate cancer–specific mortality after BT alone or BT plus EBRT was significantly different from EBRT (p<0.001) but there was no difference between BT and BT plus EBRT (p=0.18). |
| Prostate cancer–specific mortality– multivariate model (year of diagnosis 5 years later) | NA | NA | | NA | HR 0.70 (95% CI, 0.63–0.78), p<0.01 |
| Prostate cancer–specific mortality – multivariate model (per year older age) | NA | NA | | NA | HR 1.02 (95% CI, 1.01–1.04), p=0.01 |
| Prostate cancer–specific mortality – multivariate model (Asian vs. white) | NA | NA | | NA | HR 0.62 (95% CI, 0.49–0.76), p<0.01 |
| Prostate cancer–specific mortality – multivariate model (Black vs. white) | NA | NA | | NA | HR 0.93 (95% CI, 0.78–1.10), p=0.38 |
| Prostate cancer–specific mortality – multivariate model (Hispanic) | NA | NA | | NA | HR 1.18 (95% CI, 0.95–1.44), p=0.13 |
| Prostate cancer–specific mortality – multivariate model (Urban) | NA | NA | | NA | HR 0.99 (95% CI, 0.82–1.20), p=0.93 |
| Prostate cancer–specific mortality – multivariate model (lowest quartile vs. highest quartile income) | NA | NA | | NA | HR 1.09 (95% CI, 0.93–1.27), p=0.29 |
| Prostate cancer–specific mortality – multivariate model (low‑middle quartile vs. highest quartile income) | NA | NA | | NA | HR 0.90 (95% CI, 0.78–1.05), p=0.17 |
| Prostate cancer–specific mortality – multivariate model (low‑middle quartile vs. highest quartile income) | NA | NA | | NA | HR 0.90 (95% CI, 0.78–1.05), p=0.17 |
| Prostate cancer–specific mortality – multivariate model (high-middle quartile vs. highest quartile income) | NA | NA | | NA | HR 1.02 (95% CI, 0.89–1.18), p=0.79 |
| Prostate cancer–specific mortality – multivariate model (prior malignancy vs. prostate only primary) | NA | NA | | NA | HR 0.99 (95% CI, 0.82–1.19), p=0.93 |
| Prostate cancer–specific mortality – multivariate model (other malignancy after prostate cancer diagnosis vs. none) | NA | NA | | NA | HR 0.73 (95% CI, 0.63–0.86), p<0.01 |
| Prostate cancer–specific mortality – multivariate model (T2 vs. T1) | NA | NA | | NA | HR 1.62 (95% CI, 1.39–1.90), p<0.01 |
| Prostate cancer–specific mortality – multivariate model (T3 vs. T1) | NA | NA | | NA | HR 2.75 (95% CI, 2.27–3.34), p<0.01 |
| Prostate cancer–specific mortality – multivariate model (PSA elevated) | NA | NA | | NA | HR 0.85 (95% CI, 0.63–1.17), p=0.28 |
| Prostate cancer–specific mortality – multivariate model (BT alone vs. EBRT) | NA | NA | | NA | HR 0.66 (95% CI, 0.49–0.86), p<0.01 |
| Prostate cancer–specific mortality – multivariate model (BT plus EBRT vs. EBRT) | NA | NA | | NA | HR 0.77 (95% CI, 0.66–0.90), p<0.01 |
| Abdollah et al. 201172 | RP: 5,760 (matched cohort) | Observation: 5,909 patients | | NA | Based on the propensity score matched cohort only two estimates were developed: the development cohort (cumulative incidence plots were used) and the external validation cohort (this tested the calibration and discrimination of the multivariate analysis’ competing risks nomogram). |
| Prostate cancer–specific mortality rate at 5 years of followup | 0.6% (0.3–0.8) | 1.8% (1.4–2.2) | | NA | p<0.001 |
| Prostate cancer–specific mortality rate at 10 years of followup | 2.8% (2.3–3.4) | 5.8% (5.0–6.6) | | NA | p<0.001 |
| Prostate cancer–specific mortality multivariate analyses (treatment type) | NA | NA | | NA | HR: Observation=1 (reference), RP 0.48 (95% CI, 0.38–0.59), p<0.001 |
| Prostate cancer–specific mortality multivariate analyses (age in years) | NA | NA | | NA | HR: 1.04 (95% CI, 1.01–1.07), p=0.006 |
| Prostate cancer–specific mortality multivariate analyses (race Black) | NA | NA | | NA | HR: white 1 reference, Black 1.19 (95% CI, 0.84–1.67), p=0.3 |
| Prostate cancer–specific mortality multivariate analyses (race Other) | NA | NA | | NA | HR: white 1 reference, Other 0.88 (95% CI, 0.54–1.45), p=0.6 |
| Prostate cancer–specific mortality multivariate analyses (CCI 1) | NA | NA | | NA | HR: 0 reference, 1 1.04 (95% CI, 0.82–1.31), p=0.7 |
| Prostate cancer–specific mortality multivariate analyses (CCI 2) | NA | NA | | NA | HR: 0 reference, 2 0.93 (95% CI, 0.67–1.28), p=0.6 |
| Prostate cancer–specific mortality multivariate analyses (CCI ≥3) | NA | NA | | NA | HR: 0 reference, 3 0.81 (95% CI, 0.57–1.16), p=0.2 |
| Cooperberg et al. 201039 | RP: 5,066 patients | EBRT: 1,143 patients | | ADT: 1,329 patients | — |
| Prostate cancer–specific mortality at median followup 3.9 years, 4.5 years, and 3.6 years for RP, EBRT, and ADT, respectively. | Relative to RP, the adjusted HRs were 1.58 (95% CI, 1.32 to 1.89) for EBRT and 2.25 (95% CI, 1.86 to 2.72) for ADT.  The HR for ADT relative to EBRT was 1.43 (95% CI, 1.21 to 1.69) | | | | — |
| Prostate cancer–specific mortality multivariate analyses (clinical stage T2a/b) | NA | NA | | NA | HR: T1 reference, T2a/b 1.00 (95% CI, 0.80–1.25), p=0.9 |
| Prostate cancer–specific mortality multivariate analyses (clinical stage T2c) | NA | NA | | NA | HR: T1 reference, T2c 1.34 (95% CI, 0.99–1.83), p=0.06 |
| Prostate cancer–specific mortality multivariate analyses (Gleason 6–7) | NA | NA | | NA | HR: Gleason score 2 to 5 reference, Gleason score 6–7 2.07 (95% CI, 1.30–3.30), p=0.001 |
| Prostate cancer–specific mortality multivariate analyses (Gleason 8–10) | NA | NA | | NA | HR: Gleason score 2–5 reference, Gleason score 8–10 5.89 (95% CI, 3.64–9.54), p<0.001 |
| Hadley et al. 201073 | Observation: 5,879 patients | RP: 11,936 patients | | NA | Cox proportional hazards model using three approaches: traditional multivariable survival analysis, propensity score adjustment, and instrumental variable analysis |
| Multivariable survival analysis | 0.036 (0.030–0.041) | 0.025 (0.022–0.028 | | NA | HR 1.59, (1.27–2.00) |
| Propensity score adjustments (inverse probability of treatment weights) | 0.035 (0.029–0.040) | 0.026 (0.023–0.030) | | NA | HR 1.60, (1.40–1.83) |
| Propensity score adjustments (standardized mortality ratio weights) | 0.036 (0.030–0.041) | 0.030 (0.026–0.033) | | NA | HR 1.39 (1.10–1.76) |
| Instrumental variable approach | 0.030 (0.026–0.034) | 0.027 (0.023–0.031) | | NA | HR 0.73 (0.08–6.73) |
| Krambeck et al. 200865  Death from prostate cancer | RRP: 0 | RALRP: 0 | | NA | Median followup time was 1.3 years. |
| Lu-Yao et al. 200878  Prostate specific mortality – all cancer grades combined | ADT: 867/32,744 events/person-year, rate per 100=2.6 | Observation:  693/55,424 events/person-year, rate per 100=1.3 | | NA | Adjusted HR (95% CI,) 1.76 (1.59–1.95) p<0.05 |
| Albertsen et al. 200742  Prostate cancer specific survival at 13‑years followup | Surgery: 596 patients | Radiation: 642 patients | | Observation: 114 patients | Cause specific survival curve for the 3 treatment groups by  D’Amico risk category and cause specific survival with standardization via proportional hazards model to average covariate profile in each D’Amico risk group.  Competing risk analysis of percent of patients dead of prostate cancer, dead of other causes, and alive in each treatment group 5, 10, and 15 years after diagnosis standardized to age 65 years at diagnosis, average pretreatment comorbidity, Gleason score, PSA and tumor distribution for entire sample. |
| D’Amico risk category low: Prostate cancer–specific survival at 13‑years followup | 96% | 90% | | 83% | — |
| D’Amico risk category intermediate: Prostate cancer–specific survival at 13‑years followup | 92% | 80% | | 89% | — |
| D’Amico risk category high: Prostate cancer–specific survival at 13‑years followup | 90% | 70% | | 60% | — |
| D’Amico risk category low: Prostate cancer–specific survival at 13‑years followup with standardization | 96% | 90% | | 83% | — |
| D’Amico risk category intermediate: Prostate cancer–specific survival at 13‑years followup with standardization | 90% | 80% | | 70% | — |
| D’Amico risk category high: Prostate cancer–specific survival at 13‑years followup with standardization | 85% | 70% | | 55% | — |
| 5‑year followup competing risk analysis | Died of prostate cancer:  2%  Died of other causes: 6%  Alive: 92% | Died of prostate cancer: 4%  Died of other causes: 5%  Alive: 91% | | Died of prostate cancer: 6%  Died of other causes: 4%  Alive: 90% | — |
| 10‑year followup competing risk analysis | Died of prostate cancer:  3%  Died of other causes:  14%  Alive: 83% | Died of prostate cancer: 9%  Died of other causes: 13%  Alive: 78% | | Died of prostate cancer: 14%  Died of other causes: 13%  Alive: 73% | — |
| 15‑year followup competing risk analysis | Died of prostate cancer:  8%  Died of other causes:  24%  Alive: 68% | Died of prostate cancer: 17%  Died of other causes: 23%  Alive: 60% | | Died of prostate cancer: 25%  Died of other causes: 20%  Alive: 55% | — |
| D’Amico et al. 200787 | RRP: 660 patients | 3D-CRT: 288 patients | | — | — |
| Prostate cancer specific mortality, n (%) at median followup of 5.5 years in the RRP group and 4.0 years in the 3D-CRT group. | 29 of 660 patients (4.4) | 32 of 288 patients (11.1) | | — | RR 0.4 (0.24–0.64) |
| % of patients who died of prostate cancer with PSA level ≤4 ng/mL  % of patients who died of prostate cancer with PSA level >4–10 ng/mL  % of patients who died of prostate cancer with PSA level >10–20 ng/mL  % of patients who died of prostate cancer with PSA level >20 ng/mL | 3 of 29 patients (10)  15 of 29 patients (52)  3 of 29 patients (10)  8 of 29 patients (28) | 0 of 32 patients (0)  7 of 32 patients (22)  8 of 32 patients (25)  17 of 32 patients (53) | | — | RR 7.7 (0.42–143)  RR 2.37 (1.13–4.97)  RR 0.41 (0.12–1.41)  RR 0.52 (0.27–1.02) |
| % of patients who died of prostate cancer with biopsy Gleason score ≤7  % of patients who died of prostate cancer with biopsy Gleason score ≤7  % of patients who died of prostate cancer with biopsy Gleason score ≤7 | 11 of 29 patients (38)  9 of 29 patients (31)  9 of 29 patients (31) | 8 of 32 patients (25)  13 of 32 patients (41)  11 of 32 patients (34) | | — | RR 1.52 (0.71–3.24)  RR 0.9 (0.17–0.86)  RR 0.44 (0.44–1.86) |
| % of patients who died of prostate cancer withT1c  % of patients who died of prostate cancer withT2a  % of patients who died of prostate cancer withT2b  % of patients who died of prostate cancer withT2c  % of patients who died of prostate cancer withT3a or T3b | 7 of 29 patients (24)  17 of 29 patients (59)  54 of 29 patients (19)  27 of 29 patients (9)  12 of 29 patients (4) | 8 of 32 patients (25)  9 of 32 patients (28)  5 of 32 patients (16)  6 of 32 patients (19)  4 of 32 patients (13) | | — | RR 0.97 (0.4–2.33)  RR 2.08 (1.11–3.92)  RR 0.88 (0.26–2.98)  RR 0.18 (0.02–1.44)  RR 0.12 (0.01–2.18) |
| % of patients who died of prostate cancer with any 1 high-risk factor  % of patients who died of prostate cancer with any 2 high-risk factors  % of patients who died of prostate cancer with any 3 high-risk factors  % of patients who died of prostate cancer with any 4 high-risk factors | 8 of 29 patients (28)  11 of 29 patients (38)  8 of 29 patients (28)  2 of 29 patients (7) | 5 of 32 patients (34)  3 of 32 patients (34)  14 of 32 patients (34)  10 of 32 patients (34) | | — | RR 1.77 (0.65–4.79)  RR 4.05 (1.25–13.08)  RR 0.63 (0.31–1.28)  RR 0.22 (0.05–0.93) |

**Abbreviations:** 3D-CRT=Three-dimensional conformal radiotherapy; ADT=androgen-deprivation therapy; AJCC=American Joint Committee on Cancer; BT=brachytherapy; CCI=Charlson Comorbidity Index; CI=confidence interval; EBRT=external beam radiation therapy; HR=hazard ratio; IGRT: image-guided radiation therapy; NA=not applicable; PSA=prostate-specific antigen; RALP=robotic-assisted laparoscopic prostatectomy; RALRP=robotic-assisted laparoscopic radical prostatectomy; RP=radical prostatectomy; RR=relative risk; RRP=radical retropubic prostatectomy; T=tumor stage**.**