**Supplemental Table S1. Propensity score–matched demographic and clinic characteristics of very old patients with NCCN high-risk prostate adenocarcinoma.**

| | | RP N = 277 | | IMRT+HT N = 382 | | |
|---|---|---|---|---|---|---|
| Covariates | | n | (%) | n | (%) | p value |
| Age | Mean (SD) | 84.6 | (3.2) | 85.1 | (3.5) | 0.1098 |
| | Median (Q1–Q3) | 84 | (82–86) | 85 | (82–87) | |
| | 80–89 | 256 | (92.4) | 340 | (89.0) | 0.9090 |
| | 90+ | 21 | (7.6) | 42 | (11.0) | |
| Year of diagnosis | 2011–2012 | 47 | (17.0) | 60 | (15.7) | 0.9837 |
| | 2013 | 49 | (17.7) | 72 | (18.8) | |
| | 2014 | 57 | (20.6) | 82 | (21.5) | |
| | 2015 | 62 | (22.4) | 83 | (21.7) | |
| | 2016 | 62 | (22.4) | 85 | (22.3) | |
| CCI scores | 0 | 102 | (36.8) | 145 | (38.0) | 0.7626 |
| | 1 | 77 | (27.8) | 104 | (27.2) | |
| | 2+ | 98 | (35.4) | 133 | (34.8) | |
| Myocardial infarction | | 4 | (1.4) | 7 | (1.8) | 0.8348 |
| Congestive heart failure | | 10 | (3.6) | 13 | (3.4) | 0.7740 |
| Peripheral vascular disease | | 10 | (3.6) | 10 | (2.6) | 0.4913 |
| Cerebrovascular disease | | 31 | (11.2) | 48 | (12.6) | 0.8997 |
| Chronic pulmonary disease | | 41 | (14.8) | 57 | (14.9) | 0.7090 |

| Covariates | | RP N = 277 n | (%) | IMRT+HT N = 382 n | (%) | p value |
|---|---|---|---|---|---|---|
| Diabetes | | 73 | (26.4) | 94 | (24.6) | 0.6732 |
| Hypertension | | 166 | (59.9) | 233 | (61.0) | 0.9782 |
| Income | <NTD 21,000 | 92 | (33.2) | 119 | (31.2) | 0.8053 |
| | NTD 21,000–30,000 | 124 | (44.8) | 170 | (44.5) | |
| | NTD 30,000–45,000 | 29 | (10.5) | 41 | (10.7) | |
| | NTD 45,000+ | 32 | (11.6) | 52 | (13.6) | |
| Hospital area | North | 128 | (46.2) | 169 | (44.2) | 0.9637 |
| | Central | 82 | (29.6) | 115 | (30.1) | |
| | South | 61 | (22.0) | 89 | (23.3) | |
| | East | 6 | (2.2) | 9 | (2.4) | |
| Hospital level | Medical center | 178 | (64.3) | 244 | (63.9) | 0.5094 |
| | Others | 99 | (35.7) | 138 | (36.1) | |
| AJCC T stage | T1 | 96 | (34.7) | 128 | (33.5) | 0.9366 |
| | T2a | 57 | (20.6) | 77 | (20.2) | |
| | T2b | 26 | (9.4) | 44 | (11.5) | |
| | T2c | 89 | (32.1) | 120 | (31.4) | |
| | T3a | 9 | (3.2) | 13 | (3.4) | |
| Gleason score | ≤5 | 0 | | 0 | | 0.9570 |
| | 6 | 19 | (6.9) | 33 | (8.6) | |

| Covariates | | RP N = 277 n | (%) | IMRT+HT N = 382 n | (%) | p value |
|---|---|---|---|---|---|---|
| | 7 | 187 | (67.5) | 253 | (66.2) | |
| | 8 | 44 | (15.9) | 64 | (16.8) | |
| | 9+ | 22 | (7.9) | 23 | (6.0) | |
| | Missing | 5 | (1.8) | 9 | (2.4) | |
| Grade group (max of Gleason grade) | 1–2 | 5 | (1.8) | 9 | (2.4) | 0.9624 |
| | 3 | 19 | (6.9) | 32 | (8.4) | |
| | 4 | 223 | (80.5) | 304 | (79.6) | |
| | 5 | 30 | (10.8) | 37 | (9.7) | |
| PSA, ng/mL | Mean (SD) | 11.7 | (7.6) | 12.7 | (11.6) | 0.1942 |
| | Median (IQR, Q1–Q3) | 10.3 | (6.8–15.1) | 10.5 | (7.2–14.9) | |
| | 0–5 | 22 | (7.9) | 34 | (8.9) | 0.9770 |
| | 5–10 | 95 | (34.3) | 116 | (30.4) | |
| | 10–20 | 109 | (39.4) | 158 | (41.4) | |
| | 20+ | 15 | (5.4) | 28 | (7.3) | |
| | Missing | 36 | (13.0) | 46 | (12.0) | |
| EAU risk classification | Localized—intermediate | 125 | (45.1) | 171 | (44.8) | 0.8521 |
| | Localized—high | 143 | (51.6) | 198 | (51.8) | |
| | Locally advanced | 9 | (3.2) | 13 | (3.4) | |
| Follow-up time, months | Mean (SD) | 61.7 | (18.4) | 58.4 | (18.9) | 0.8742 |

| Covariates | RP N = 277 | | IMRT+HT N = 382 | | p value |
|---|---|---|---|---|---|
| | n | (%) | n | (%) | |
| All-cause death | 26 | (9.4) | 76 | (19.9) | 0.0003 |
| Cancer-specific mortality | 20 | (7.2) | 41 | (10.7) | 0.0356 |
| Biochemical recurrence | 52 | (18.8) | 130 | (34.0) | <0.0001 |
| Locoregional recurrence | 12 | (4.3) | 20 | (5.2) | 0.0468 |
| Distant metastasis | 25 | (9.0) | 43 | (11.3) | 0.3639 |

RP, radical prostatectomy; RT, radiotherapy; IMRT, intensity-modulated radiotherapy; HT, hormone therapy; NCCN, National Comprehensive Cancer Network; PSA, prostate-specific antigen; AJCC, American Joint Committee on Cancer; CCI, Charlson comorbidity index; T, tumor; NTD, New Taiwan Dollars; SD, standard deviation; IQR, interquartile range

**Supplemental Table S2.** Multivariate Cox proportional hazards regression model analysis of cancer-specific mortaliyt of very old patients with high-risk prostate adenocarcinoma.

| **Covariates** | | **Adjusted HR *** | **(95% CI)** | **p value** |
|---|---|---|---|---|
| Curative treatment | Radical prostatectomy | ref | | 0.0411 |
| | IMRT + HT | 1.04 | (1.01–1.21) | |
| Year of diagnosis | 2011-2012 | ref | | 0.7809 |
| | 2013 | 0.91 | (0.51–1.52) | |
| | 2014 | 1.11 | (0.61–1.94) | |
| | 2015 | 1.13 | (0.66–2.00) | |
| | 2016 | 0.91 | (0.50–1.72) | |
| CCI scores | 0 | ref | | 0.2415 |
| | 1 | 0.88 | (0.47–1.27) | |

| Covariates | | Adjusted HR * | (95% CI) | p value |
|---|---|---|---|---|
| | 2+ | 1.11 | (0.70–2.20) | |
| Congestive heart failure | | 0.77 | (0.43–1.40) | 0.2356 |
| Peripheral vascular disease | | 0.70 | (0.36–2.97) | 0.5251 |
| Cerebrovascular disease | | 0.74 | (0.38–1.21) | 0.2391 |
| Chronic pulmonary disease | | 1.05 | (0.64–1.76) | 0.8170 |
| Diabetes | | 0.96 | (0.65–1.74) | 0.7802 |
| Hypertension | | 0.90 | (0.77–1.60) | 0.5931 |
| Income | <NTD 21,000 | ref | | 0.6040 |
| | NTD 21,000–30,000 | 0.96 | (0.73–1.77) | |
| | NTD 30,000–45,000 | 0.90 | (0.77–2.57) | |
| | NTD 45,000+ | 0.86 | (0.70–2.27) | |
| Hospital level | Medical center | ref | | 0.6082 |
| | Others | 1.01 | (0.66–1.41) | |
| Hospital area | North | ref | | 0.5140 |
| | Central | 1.04 | (0.68–1.31) | |
| | South | 1.06 | (0.58–1.33) | |
| | East | 1.22 | (0.69–4.01) | |
| AJCC T stage | T1 | ref | | 0.2741 |
| | T2a | 1.09 | (0.85–1.66) | |
| | T2b | 1.15 | (0.69–1.47) | |
| | T2c | 1.22 | (0.88–2.76) | |
| | T3a | 1.33 | (0.42–5.90) | |
| EAU risk classification | Localized–intermediate | ref | | 0.5817 |
| | Localized–high | 1.29 | (0.70–2.07) | |
| | Locally advanced | 1.87 | (0.59–3.57) | |

RP, radical prostatectomy; RT, radiotherapy; IMRT, intensity-modulated radiotherapy; HT, hormone therapy; aHR, adjusted hazard ratio; HR, hazard ratio; CI, confidence interval; AJCC, American Joint Committee on Cancer; CCI, Charlson comorbidity index; T, tumor; NTD, New Taiwan Dollars.

*adjusted for all covariates mentioned in Table 1.

**Supplemental Figure S1**. Study flow-chart.

