Table F-8. Biochemical failure (nonrandomized comparative studies)

| **Study Outcomes** | **Treatment Group 1** | **Treatment Group 2** | **Analyses; p-Values** |
| --- | --- | --- | --- |
| Marina et al. 201386 | IGRT: 734 patients | BT: 282 patients | — |
| 5-year biochemical control, % (range) | 92 (89–94) | 93 (89–96) | 0.22 |
| 8-year biochemical control, % (range) | 86 (82–90) | 91 (86–94) |
| 5-year biochemical failure by patient characteristics | Age <60 years: IGRT 87% vs. BT 92%Age 60–69 years: IGRT 92% vs. BT 90%Age ≥70 years: IGRT 92% vs. BT 96%Race, African American: IGRT 100% vs. BT 82%Race, European American: IGRT 91% vs. 95 BT%Race, Other: IGRT 90% vs. BT 90% | — |
| 5-year biochemical failure by tumor characteristics | PSA <10 ng/mL: IGRT 92% vs. BT 93%PSA 10–20 ng/mL: IGRT 91% vs. BT 91%Gleason score ≤6: IGRT 94% vs. BT 95%Gleason score 3+4: IGRT 93% vs. BT 91%Gleason score 4+3: IGRT 90% vs. 93 BT%Stage T1-2a: IGRT 93% vs. BT 92%Stage T2b–2c: IGRT 84% vs. BT 95% | — |
| Rice et al. 201136 | RP: 194 patients | EBRT: 252 patientsWW without secondary treatment: 214 patientsWW with secondary treatment: 110 patients | — |
| Biochemical recurrence with a mean followup of 6.8±4.0 years | EBRT: HR 1.376 (0.878 to 2.158)WW without secondary treatment; 1.927 (1.163 to 3.193)WW with secondary treatment; 1.876 (0.990 to 3.557) | Multivariable cox proportional hazards model predicting overall mortality using pretreatment variables and treatment-related variables with RP as the comparator group.EBRT: p=0.1640WW without secondary treatment: p=0.0109WW with secondary treatment: p=0.0538 |
| Biochemical recurrence with a mean followup of 6.8±4.0 years for age at diagnosis (per year) | HR 1.029 (0.975 to 1.085) | Multivariable cox proportional hazards model predicting overall mortality using pretreatment variables and treatment-related variables, p=0.2948 |
| Biochemical recurrence with a mean followup of 6.8±4.0 years for PSA (per ng/mL) | HR 1.254 (1.163 to 1.354)  | Multivariable cox proportional hazards model predicting overall mortality using pretreatment variables and treatment-related variables, p<0.0001 |
| Biochemical recurrence with a mean followup of 6.8±4.0 years for Race/ethnicity | Black: HR 0.900 (0.505 to 1.606)Other: HR 0.878 (0.407 to 1.892) | Multivariable cox proportional hazards model predicting overall mortality using pretreatment variables and treatment-related variables with White as comparator group.Black p=0.7220Other: p=0.7390 |
| Biochemical recurrence with a mean followup of 6.8±4.0 years for number of comorbidities | 1:HR 0.958 (0.642 to 1.429)2: HR 0.578 (0.357 to 0.937)≥3: 0.798 (0.476 to 1.338) | Multivariable cox proportional hazards model predicting overall mortality using pretreatment variables and treatment-related variables with no comorbidities as comparator group.1: p=0.83262: p=0.0262≥3: 0.3923 |
| Biochemical recurrence with a mean followup of 6.8±4.0 years for clinical T stage | T2a: HR 1.183 (0.845 to 1.656) | Multivariable cox proportional hazards model predicting overall mortality using pretreatment variables and treatment-related variables with clinical T stage T1 as comparator group.T2a: p=0.3272 |
| Magheli et al. 201056 | RRP: 522 patients | LRP: 522 patients | RALRP: 522 patients | Mean (SD) followup time RRP: 2.5 (1.6) yearsLRP: 1.47 (0.7) yearsRALRP: 1.3 (0.6) years |
| Multivariate proportional hazards ratio (HR) of risk of biochemical recurrence | RRP vs. LRP: HR 1.7; 95% CI, 0.69 to 4.42; p= 0.232RRP vs RALRP: HR 1.02; 0.13 to 8.36; p= 0.979 | — |
| Multivariate proportional HR of risk of biochemical recurrence stratified by Gleason score | Gleason score ≤6 vs. 7: HR 3.35; 95% CI, 1.27 to 8.83; p=0.015Gleason score ≤6 vs. 8-10: HR 9.98; 95% CI, 3.07 to 32.42; p<0.001 | — |
| Krambeck et al. 200865 | RRP: 588 patients | RALRP: 294 patients | Median followup time was 1.3 years. |
| PSA progression, number of patients | 32 | 14 | — |
| Clinical local recurrence | RRP: 5 | RALRP: 3 | Median followup time was 1.3 years. Groups were similar on margin positivity. |
| Wong et al. 200788 | 3D-CRT: 270 patients | IMRT: 314 patients | BT: 225 patients | EBRT plus BT: 44 patients | — |
| The 5-year biochemical failure rates.Biochemical failure was defined as an increase in the PSA level ≥2 ng/mL above the nadir with no back-dating. | 74% | 87% | 94% | 94% | — |

**Abbreviations:** 3D-CRT=Three-dimensional conformal radiotherapy; BT=brachytherapy; CI=confidence interval; EBRT=external beam radiation therapy; HR=hazard ratio; IGRT: image-guided radiation therapy; IMRT=intensity-modulated radiation therapy; LRP=laparoscopic radical prostatectomy; PSA=prostate-specific antigen; RALRP=robotic-assisted laparoscopic radical prostatectomy; RP=radical prostatectomy; RRP=radical retropubic prostatectomy; T=tumor stage; WW=watchful waiting.