Association Between Radiation Therapy, Surgery, or Observation for Localized Prostate Cancer and Patient-Reported Outcomes After 3 Years.


Abstract

IMPORTANCE: Understanding the adverse effects of contemporary approaches to localized prostate cancer treatment could inform shared decision making.

OBJECTIVE: To compare functional outcomes and adverse effects associated with radical prostatectomy, external beam radiation therapy (EBRT), and active surveillance.

DESIGN, SETTING, AND PARTICIPANTS: Prospective, population-based, cohort study involving 2550 men (≤80 years) diagnosed in 2011-2012 with clinical stage cT1-2, localized prostate cancer, with prostate-specific antigen levels less than 50 ng/mL, and enrolled within 6 months of diagnosis.

EXPOSURES: Treatment with radical prostatectomy, EBRT, or active surveillance was ascertained within 1 year of diagnosis.

MAIN OUTCOMES AND MEASURES: Patient-reported function on the 26-item Expanded Prostate Cancer Index Composite (EPIC) 36 months after enrollment. Higher domain scores (range, 0-100) indicate better function. Minimum clinically important difference was defined as 10 to 12 points for sexual function, 6 for urinary incontinence, 5 for urinary irritative symptoms, 5 for bowel function, and 4 for hormonal function.

RESULTS: The cohort included 2550 men (mean age, 63.8 years; 74% white, 55% had intermediate- or high-risk disease), of whom 1523 (59.7%) underwent radical prostatectomy, 598 (23.5%) EBRT, and 429 (16.8%) active surveillance. Men in the EBRT group were older (mean age, 68.1 years vs 61.5 years, P < .001) and had worse baseline sexual function (mean score, 52.3 vs 65.2, P < .001) than men in the radical prostatectomy group. At 3 years, the adjusted mean sexual domain score for radical prostatectomy decreased more than for EBRT (mean difference, -11.9 points; 95% CI, -15.1 to -8.7). The decline in sexual domain scores between EBRT and active surveillance was not clinically significant (-4.3 points; 95% CI, -9.2 to 0.7). Radical prostatectomy was associated with worse urinary incontinence than EBRT (-18.0 points; 95% CI, -20.5 to -15.4) and active surveillance (-12.7 points; 95% CI, -16.0 to -9.3) but was associated with better urinary irritative symptoms than active surveillance (5.2 points; 95%
CI, 3.2 to 7.2). No clinically significant differences for bowel or hormone function were noted beyond 12 months. No differences in health-related quality of life or disease-specific survival (3 deaths) were noted (99.7%-100%).

CONCLUSIONS AND RELEVANCE: In this cohort of men with localized prostate cancer, radical prostatectomy was associated with a greater decrease in sexual function and urinary incontinence than either EBRT or active surveillance after 3 years and was associated with fewer urinary irritative symptoms than active surveillance; however, no meaningful differences existed in either bowel or hormonal function beyond 12 months or in other domains of health-related quality-of-life measures. These findings may facilitate counseling regarding the comparative harms of contemporary treatments for prostate cancer.

Comment in
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