



Treatment patterns for older veterans with localized prostate cancer



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ABSTRACT

Objective: Concerns about over-treatment have led to practice guidelines discouraging active treatment of prostate cancer (PCa) in men with limited life expectancies and/or low-risk tumors. We evaluated treatment patterns for older veterans with localized PCa, particularly those with low-risk features.

Methods: We used VA Cancer Registry data to identify men aged 65+ diagnosed with clinically localized PCa between January 1st, 2003 and December 31st, 2008. We obtained baseline data on demographics, tumor characteristics, comorbidities, and initial treatment within 6 months of diagnosis: radical prostatectomy, radiotherapy, primary androgen-deprivation therapy (PADT), or no active treatment. National VA surveys provided facility data, including academic affiliation, availability of oncologic specialists, and distance to radiotherapy facilities. Multinomial regression analyses determined associations between patient and facility characteristics and cancer treatment for men with localized (stage < III) and low-risk PCa (stage ≤ IIa, PSA < 10 ng/mL, Gleason ≤ 6).

Results: 17,206 veterans had localized PCa, 32% age 75+, 12% had comorbidity scores ≥ 3, and 33% had low-risk tumors. Overall, 39% received radiotherapy, 6% surgery, 20% PADT, and 35% no active treatment. For those with low-risk cancers, older men (RR = 0.36, 95% CI 0.30–0.43) and sicker men (RR = 0.75, 95% CI 0.62–0.90) were less likely to receive surgery or radiotherapy versus no active treatment. Over time, more of these men received no active treatment (from 41% to 57%, $P < 0.001$) while fewer received PADT (from 11% to 4%, $P < 0.001$).

Conclusion: VA treatment patterns followed evidence-based guidelines against treating older and sicker men with surgery or radiotherapy, for decreasing use of PADT, and for increasingly withholding active treatment, particularly for men with low-risk PCa.

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1. Introduction

Prostate-specific antigen (PSA) testing has dramatically increased the observed incidence of localized prostate cancer [1]. Most men with these cancers undergo surgery or radiotherapy [2], even though a high proportion of screen-detected cancers are not likely to benefit from treatment [3]. Furthermore, the optimal treatment for localized prostate cancer is uncertain because no randomized trials have published results comparing surgery

versus radiotherapy. Treatment options are even more uncertain for older men because they have been excluded from randomized treatment trials [4–6]. Accordingly, treatment guidelines recommend observation – either watchful waiting or active surveillance – as an appropriate option for older men with a localized cancer, particularly those with low-risk tumor characteristics (based on clinical stage, PSA levels, Gleason scores, and biopsy tumor burden) [7,8]. Nonetheless, data from Surveillance, Epidemiology, and End Results (SEER)–Medicare [9–11] and the Cancer of the Prostate Strategic Urological Research Endeavor (CaPSURE) [2] document that over 70% of older men with a low-risk cancer undergo surgery or radiotherapy.

Nambudiri et al. previously used Veterans Affairs (VA) Central Tumor Registry and national VA facility survey data to characterize variation in prostate cancer treatment for veterans of all ages

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Table 1
Baseline patient and facility characteristics and unadjusted rates of primary treatments for men with localized prostate cancers.

Baseline characteristics	All (n, %) N = 17,206 (100.0)	RP (%) N = 991 (5.8)	Radiation (%) N = 6648 (38.8)	PADT (%) N = 3486 (20.3)	No active treatment (%) N = 6061 (35.2)	P-value
Age						<0.0001
65–69	5821 (33.8)	10.3	44.5	10.5	34.7	
70–74	5821 (33.8)	5.1	44.9	15.6	34.4	
75+	5564 (32.4)	1.7	26.3	35.3	36.7	
Race ^a						<0.0001
White	12,987 (75.9)	6.4	38.9	19.2	35.5	
Black	3503 (20.5)	3.5	39.7	21.3	35.5	
Other	611 (3.6)	4.9	31.1	33.9	30.1	
Married ^a						<0.0001
No	6,935 (40.7)	4.8	37.9	21.5	35.8	
Yes	10,112 (59.3)	6.5	39.4	19.3	34.8	
Lived in an area in which ≥25% of adults had a college education ^a						<0.0001
No	11,876 (71.6)	5.9	39.1	17.1	37.9	
Yes	4702 (28.4)	5.7	38.6	21.6	34.1	
Census region ^b						<0.0001
Midwest	3676 (21.4)	6.0	39.0	18.3	36.7	
Northeast	2437 (14.2)	5.5	40.3	16.7	37.5	
South	8017 (46.5)	4.9	38.9	23.9	32.3	
West	3076 (17.9)	7.9	36.7	16.1	39.3	
Charlson comorbidity score						<0.0001
0	9952 (57.8)	6.8	39.8	19.1	34.3	
1–2	5148 (29.9)	4.7	38.5	20.9	35.9	
≥3	2106 (12.3)	3.3	34.3	24.4	38.0	
Clinical stage ^c						<0.001
T1c	10,988 (63.9)	5.4	39.7	17.6	37.3	
T2	872 (5.1)	10.6	30.5	24.2	34.7	
T2a/b/c	5346 (31.0)	5.6	38.2	25.1	31.1	
PSA (ng/mL, before cancer diagnosis)						<0.0001
<4	2062 (12.0)	7.6	35.6	16.0	40.8	
4 to <10	9849 (57.2)	6.6	42.9	13.3	37.2	
≥10	5295 (30.8)	3.5	32.2	35.0	29.3	
Gleason score (biopsy) ^a						<0.0001
2–6	8808 (51.7)	8.4	47.7	15.5	28.4	
7–10	8215 (48.3)	8.2	53.9	26.7	11.2	
Distance to diagnosing VA facility (miles) ^a						0.02
0 to <10	9257 (53.8)	5.3	38.8	19.8	36.1	
10 to <50	7642 (44.5)	6.1	38.8	20.9	34.2	
50+	290 (1.7)	7.9	40.3	19.0	32.8	
Seen at community-based outpatient clinic within 1 year before/after cancer diagnosis						<0.0001
No	11,497 (66.8)	6.5	38.9	20.2	34.4	
Yes	5709 (33.2)	4.2	38.6	20.3	36.9	
Academic affiliation ^a						0.39
No	507 (3.0)	6.9	51.7	22.5	18.9	
Yes	16,145 (97.0)	8.2	50.3	20.9	20.6	
Availability of urologists						<0.001
No	880 (5.1)	6.5	37.5	22.6	33.4	
Urologists but no urology residents	5002 (29.1)	5.6	41.6	22.9	29.9	
Urologists and urology residents	11,324 (65.8)	5.8	37.6	18.9	37.7	
Availability of radiation oncologists						<0.001
No	7749 (45.0)	7.0	39.2	20.3	33.5	
Yes	9457 (55.0)	4.8	38.4	20.2	36.6	
Year of cancer diagnosis						<0.001
2003	2286 (13.3)	6.3	39.2	22.0	32.5	
2004	2929 (17.0)	6.3	38.9	22.4	32.4	
2005	2735 (15.9)	5.1	40.3	20.1	34.5	
2006	2885 (16.8)	4.3	41.2	20.3	34.2	
2007	3309 (19.2)	5.4	36.1	21.4	37.1	
2008	3062 (17.8)	7.1	37.5	15.8	39.6	

RP, radical prostatectomy; PADT, primary androgen deprivation; PSA, prostate-specific antigen; VA, Veterans Affairs.

^a Missing values: race, 105; marital status, 159; college education, 628; VA distance, 17; Gleason score, 183; academic affiliation, 554.

^b States comprising census regions. Midwest: IA, IL, IN, KS, MI, MN, MO, ND, NE, OH, SD, WI; Northeast: CT, MA, ME, NJ, NY, PA, RI, VT; South: AR, AL, D.C., DE, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV; West: AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, WY.

^c Clinical tumor stage definitions: 1C, tumor identified by needle biopsy (e.g., because of elevated PSA); 2, tumor confined within prostate; 2A, tumor involves one half of one lobe or less; 2B, tumor involves more than one half of one lobe but not both lobes; 2C, tumor involves both lobes.

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