

Factors Associated with Active Surveillance as Initial Management Strategy for Men with Newly Diagnosed Prostate Cancer: Data from the Pennsylvania Urologic Regional Collaborative (PURC)

Adam Reese, Mahesh Botejue, Daniel Abbott, John Danella, Claudette Fonshell, Serge Ginzburg, Thomas J. Guzzo, Thomas Lanchoney, Bret Marlowe, Jay D. Raman, Marc Smaldone, Jeffrey J. Tomaszewski, Edouard Trabulsi, Robert G. Uzzo, on behalf of the Pennsylvania Urologic Regional Collaborative (PURC)

Introduction and Objective

Prior studies have shown significant variation among providers in the use of AS for managing men with low risk prostate cancer. We aimed to characterize factors associated with the use of AS among men with newly diagnosed prostate cancer in a regional collaborative.

Methods

We analyzed the Pennsylvania Urologic Regional Collaborative (PURC), a voluntary collaborative of urology practices in Southeastern Pennsylvania and New Jersey. We identified men with newly diagnosed NCCN very low, low, and intermediate risk prostate cancer, and determined the initial treatment modality used to manage these men. Multivariable logistic regression analysis was used to identify factors associated with the use of AS as initial management strategy.

Results

A total of 1880 men with low/intermediate risk prostate cancer were identified from PURC. Table 1 shows patient demographics and initial management strategy, stratified by disease risk. Table 2 shows the results of multivariable logistic regression of factors associated with the use of AS. Patient age was inversely associated with AS, whereas no associations were observed with race or family history. With the exception of clinical stage, more advanced disease-specific parameters were strongly associated with a decreased use of AS.

Conclusions

Within PURC, AS was the most common treatment modality for men with NCCN low risk prostate cancer. Patient age and measures of disease risk (biopsy grade group, PSA, tumor volume on biopsy) were strongly associated with AS. Studies of large collaborative datasets such as PURC may allow for better understanding of the factors underlying practice and provider-level variation in the use of AS.

Table 1: Patient demographics and initial management strategy, by disease risk

		NCCN Disease Risk			Total
		Very-Low Risk	Low Risk	Intermediate Risk	
Age	< 60	56 (25.9%)	245 (43.1%)	343 (31.3%)	644 (34.3%)
	60 – 65	78 (36.1%)	172 (30.3%)	369 (33.7%)	619 (32.9%)
	> 65	82 (38.0%)	151 (26.6%)	384 (35.0%)	617 (32.8%)
Race/Ethnicity	Caucasian	137 (63.4%)	415 (73.1%)	728 (66.4%)	1280 (68.1%)
	African American	44 (20.4%)	120 (21.1%)	277 (25.3%)	441 (23.5%)
	Hispanic	14 (6.5%)	18 (3.2%)	34 (3.1%)	66 (3.5%)
	Asian and Pacific Islander	7 (3.2%)	4 (0.7%)	18 (1.6%)	29 (1.5%)
	Unknown/ Other	14 (6.5%)	11 (1.9%)	39 (3.6%)	64 (3.4%)
Initial Management Strategy	Active Surveillance	179 (82.9%)	271 (47.7%)	85 (7.8%)	535 (28.4%)
	Radical Prostatectomy	29 (13.4%)	260 (45.8%)	816 (74.4%)	1105 (58.8%)
	External Beam Radiation Therapy	8 (3.7%)	36 (6.3%)	184 (16.8%)	228 (12.1%)
	Brachytherapy	0	1 (0.2%)	10 (0.9%)	11 (0.6%)
	High Intensity Focused Ultrasound	0	0	1 (0.1%)	1 (0.1%)
Total		216 (11.5%)	568 (30.2%)	1096 (58.3%)	1880

Table 2: Multivariable logistic regression analysis of factors associated with AS utilization

		Odds Ratio (95% CI)	p-value
Age	< 60	Reference	Reference
	60 - 65	2.10 (1.44 – 3.06)	<0.001
	> 65	2.43 (1.66 – 3.54)	<0.001
Race/Ethnicity	Caucasian	Reference	Reference
	African American	0.83 (0.57 – 1.21)	0.34
	Hispanic	1.17 (0.53 – 2.59)	0.69
	Asian/Pacific Islander	0.67 (0.23 – 1.94)	0.46
	Other/Unknown	2.19 (0.94 – 5.07)	0.07
Family History of Prostate Cancer	No	Reference	Reference
	Yes	1.05 (0.73 – 1.51)	0.78
Clinical Stage	T1	Reference	Reference
	T2a	0.98 (0.58 – 1.66)	0.94
	T2b/c	0.37 (0.09 – 1.44)	0.15
Biopsy Grade Group	1	Reference	Reference
	2	0.07 (0.05 – 0.11)	<0.001
	3	0.02 (0.01 – 0.06)	<0.001
PSA	< 5	Reference	Reference
	5 – 10	0.74 (0.54 – 1.02)	0.07
	> 10	0.32 (0.19 – 0.55)	<0.001
Percent of Positive Biopsy Cores	< 25	Reference	Reference
	25 - 50	0.38 (0.25 – 0.58)	<0.001
	> 50	0.11 (0.07 – 0.15)	<0.001
Maximum Percent Biopsy Core Positive	< 25	Reference	Reference
	25 - 50	0.47 (0.32 – 0.68)	<0.001
	> 50	0.27 (0.17 – 0.43)	<0.001