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**Title:**

Who is the average patient presenting with prostate cancer?

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**Abstract:**

Prostate cancer screening, diagnosis, and treatment have changed dramatically in the last 20 years. Patients with newly diagnosed prostate cancer have many treatment options available. We attempted to determine how patient demographics and quality of life (QOL) have changed, and we describe the average patient with newly diagnosed prostate cancer in the early 21st century. From the Cancer of the Prostate Strategic Urologic Research Endeavor (CaPSURE) we identified 3003 men with prostate cancer diagnosed between 1997 and 2003 for whom pretreatment demographic



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and QOL data were available. All patients completed both the University of California-Los Angeles Prostate Cancer Index (UCLA-PCI) and the Rand Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36) as self-administered questionnaires at the time of diagnosis. We compared demographic variables (age at diagnosis, race/ethnicity, education, number of comorbidities, body mass index [BMI], and insurance type), treatment choice, and pretreatment QOL scores on the SF-36 and UCLA-PCI scales for the periods 1997 to 1999 or 2000 to 2003. Stratified analysis by risk category was performed for demographic and QOL data for the 2 periods. Race/ethnicity and insurance demographics were statistically different for the 2 periods. Low-risk patients also showed a statistically increased BMI in the 2000 to 2003 period. Risk category predicted performance on both inventories, with low-risk patients having better function than intermediate-risk patients and high-risk patients in the areas of urinary bother, bowel function and bother, and sexual function and bother, as well as in many general well-being and emotional health scales on the SF-36. We conclude that the "average" prostate cancer patient is white, 65 years of age, overweight, educated at a college level, and has 1 to 2 comorbidities. Patients report average or above-average pretreatment health-related QOL for all scales based on 2 validated instruments. In this cohort, more patients chose radical prostatectomy than any other form of treatment. © 2005 Elsevier Inc. All rights reserved.

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## WHO IS THE AVERAGE PATIENT PRESENTING WITH PROSTATE CANCER?

KIRSTEN L. GREENE, JANET E. COWAN, MATTHEW R. COOPERBERG, MAXWELL V. MENG, JANEEN DUCHANE, AND PETER R. CARROLL, FOR THE CANCER OF THE PROSTATE STRATEGIC UROLOGIC RESEARCH ENDEAVOR (CaPSURE) INVESTIGATORS

### ABSTRACT

Prostate cancer screening, diagnosis, and treatment have changed dramatically in the last 20 years. Patients with newly diagnosed prostate cancer have many treatment options available. We attempted to determine how patient demographics and quality of life (QOL) have changed, and we describe the average patient with newly diagnosed prostate cancer in the early 21st century. From the Cancer of the Prostate Strategic Urologic Research Endeavor (CaPSURE) we identified 3003 men with prostate cancer diagnosed between 1997 and 2003 for whom pretreatment demographic and QOL data were available. All patients completed both the University of California–Los Angeles Prostate Cancer Index (UCLA-PCI) and the Rand Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36) as self-administered questionnaires at the time of diagnosis. We compared demographic variables (age at diagnosis, race/ethnicity, education, number of comorbidities, body mass index [BMI], and insurance type), treatment choice, and pretreatment QOL scores on the SF-36 and UCLA-PCI scales for the periods 1997 to 1999 or 2000 to 2003. Stratified analysis by risk category was performed for demographic and QOL data for the 2 periods. Race/ethnicity and insurance demographics were statistically different for the 2 periods. Low-risk patients also showed a statistically increased BMI in the 2000 to 2003 period. Risk category predicted performance on both inventories, with low-risk patients having better function than intermediate-risk patients and high-risk patients in the areas of urinary bother, bowel function and bother, and sexual function and bother, as well as in many general well-being and emotional health scales on the SF-36. We conclude that the “average” prostate cancer patient is white, 65 years of age, overweight, educated at a college level, and has 1 to 2 comorbidities. Patients report average or above-average pretreatment health-related QOL for all scales based on 2 validated instruments. In this cohort, more patients chose radical prostatectomy than any other form of treatment. *UROLOGY* **66** (Suppl 5A): 76–82, 2005. © 2005 Elsevier Inc.

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Prostate cancer is the most common noncutaneous malignancy in men, with an anticipated 232,090 new cases predicted for 2005 in the United States. With the advent of widespread prostate-specific antigen (PSA) screening, disease incidence has increased in the last 10 years.<sup>1</sup> Despite this increase in incidence, however, rates of death due to prostate cancer have declined, and there has been a corresponding stage migration resulting in the diagnosis of men at lower risk and at an earlier clinical stage.<sup>2</sup> Because early-stage prostate cancer may follow a prolonged and indolent clinical course for up to 15 years after diagnosis, newly diagnosed patients are living with prostate cancer, as well as the effects of treatment, for longer periods with attendant implications for health-related

ment quality of life (QOL) and ongoing HRQOL measurements for patients with prostate cancer are of increasing importance as patients are faced with treatment options that may affect physical, sexual, and emotional health and well-being.<sup>5,6</sup> Although much of the literature has focused on treatment choices and outcomes for men with newly diagnosed prostate cancer, we sought to describe the HRQOL, demographic, and socioeconomic status of men already diagnosed with prostate cancer and to determine how these factors have changed over time.

## METHODS

The Cancer of the Prostate Strategic Urologic Research Endeavor (CaPSURE) is a longitudinal, observational disease registry of men with biopsy-proven adenocarcinoma of the prostate. The CaPSURE database contains demographic, clinical, treatment, and outcomes data for >11,000 patients from 40 urology practices across the United States (34 community based, 3 Veterans' Administration, and 3 academic practices). Patients are enrolled in CaPSURE regardless of age, stage of disease, or intended treatment plan. They are treated according to the usual practices of their physicians, and are followed until they die or withdraw from the study. Additional details of the CaPSURE database methodology have been previously reported.<sup>7</sup>

We identified 3003 men from the CaPSURE database who were diagnosed between 1997 and 2003 with prostate cancer and had available pretreatment demographic and QOL data. All patients with newly diagnosed prostate cancer were included regardless of stage or type of treatment.

QOL data were compiled from self-administered questionnaires including the University of California–Los Angeles Prostate Cancer Index (UCLA-PCI) and the Rand Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36).<sup>8,9</sup> The UCLA-PCI is a widely validated scale that measures 6 domains of prostate cancer–related QOL including urinary function, urinary bother, bowel function, bowel bother, sexual function, and sexual bother. Each item is scored from 0 to 100, with higher scores representing better HRQOL. The SF-36 evaluates 8 domains of general QOL and well-being, with summary scales for physical function, role limitations due to physical problems, bodily pain, general health, vitality, social functioning, role limitations due to emotional problems, mental health, physical health composite, and mental health composite. Again, each item is scored from 0 to 100, with higher scores indicating better outcomes. Reliability coefficients for patients with prostate cancer range from 0.8 to 0.95 for the UCLA-PCI and from 0.68 to 0.91 for the SF-36.<sup>10,11</sup>

We compared demographic variables (age at diagnosis, race/ethnicity, level of education, number of comorbidities, body mass index [BMI], and insurance type) and pretreatment QOL scores on the SF-36 and UCLA-PCI scales for the periods 1997 to 1999 and 2000 to 2003 and provided populations means for each scale as a reference.<sup>12,13</sup> Patients were categorized as normal weight (BMI <25), overweight (BMI 25 to 29.9) or obese (BMI ≥30). Clinical information and treatment choice was gathered for all patients.

Demographics and QOL scores were then analyzed by treatment choice and risk group (low, intermediate, or high) based on modified D'Amico risk categories.<sup>14</sup> High-risk patients are those with PSA >20 ng/mL or Gleason total grade 8 to 10 or

son total grade 7 or Gleason secondary grade 4 to 5 or clinical stage T2b to T2c. Low-risk patients are those with PSA ≤10 ng/mL and Gleason total grade <7 with no 4 to 5 pattern and clinical stage T1 to T2a.

Patients' pretreatment clinical and sociodemographic data were grouped by time category and compared using the  $\chi^2$  test. The Student *t* test was used to compare mean pretreatment scores on the SF-36 and UCLA-PCI scales in the 2 time categories. This was done for the entire sample within risk groups.

## RESULTS

### DEMOGRAPHICS

There were few demographic differences among patients diagnosed from 1997 to 1999 and those diagnosed from 2000 to 2003. Most patients in both periods were white, overweight, and aged 60 to 70 years. Furthermore, the majority of patients in both periods had 1 to 2 comorbidities, had achieved a college-level education, and were covered by private insurance. The percentage of patients in other racial or ethnic groups decreased from 17% in 1997 to 1999 to 9% in 2000 to 2003, with a corresponding increase in white patients. This change in ethnic composition between the 2 periods was statistically significant ( $P < 0.0001$ ). The percentage of patients aged <60 years increased from 23% in 1997 to 1999 to 28% in 2000 to 2003, although this difference was not statistically significant. Approximately 33% of all patients had ≥3 comorbidities in both periods, with only 15% reporting no comorbidity. Only 25% of men diagnosed in 2000 to 2003 were of normal weight compared with 29% diagnosed in 1997 to 1999. Of patients with newly diagnosed prostate cancer, >60% report some level of college education, a mean that is higher than the national average of 52% based on the 2000 US Census.<sup>15</sup> In 2000 to 2003, there were fewer patients with Medicare insurance compared with the 1997 to 1999 period ( $P < 0.03$ ) (Table I).

### CLINICAL CHARACTERISTICS AND TREATMENT

When clinical characteristics and treatment choices were analyzed, PSA and clinical T stage were both significantly lower in patients diagnosed in 2000 to 2003 compared with 1997 to 1999 ( $P < 0.01$ ). In contrast, Gleason total score ≤7 was increased in patients diagnosed in 2000 to 2003 ( $P < 0.01$ ). Most patients diagnosed from 2000 to 2003 were at low risk (48%), with PSA ≤10 ng/mL (83%), clinical stage T1 (58%), and Gleason total score 5 to 6 (66%). Significantly more patients in 2000 to 2003 chose radical prostatectomy and fewer chose radiation therapy ( $P < 0.05$ ) as initial treatment for prostate cancer. Rates of hormonal therapy, watchful

**TABLE I. Pretreatment demographics by period**

Demographics	1997–1999, n (%)	2000–2003, n (%)	P Value
Age at diagnosis (yr)			0.2261
<60	76 (23)	590 (28)	
60–70	149 (46)	893 (42)	
>70	102 (31)	659 (31)	
Race/ethnicity			<0.0001
Native American	0 (0)	7 (<1)	
Asian American	5 (2)	16 (1)	
Latino	11 (3)	27 (1)	
African American	36 (11)	117 (5)	
White	271 (83)	1957 (91)	
Other	3 (1)	18 (1)	
Education level			0.9096
High school or less	47 (15)	279 (13)	
High school graduate	80 (25)	538 (26)	
Some college	61 (19)	413 (20)	
College graduate	136 (42)	866 (41)	
Comorbidities			0.4552
0	54 (17)	308 (15)	
1–2	169 (52)	1163 (56)	
≥3	102 (31)	623 (30)	
BMI category			0.1169
Normal (<25)	93 (29)	518 (25)	
Overweight (25–29)	167 (52)	1062 (51)	
Obese (≥30)	62 (19)	496 (24)	
Insurance			0.0031
Medicare supplement	94 (30)	657 (32)	
Medicare	54 (17)	252 (12)	
Private	162 (52)	1064 (52)	
Other	1 (<1)	68 (3)	

BMI = body mass index.

### HRQOL

A significant difference in mean pretreatment urinary bother score ( $P < 0.05$ ) was identified in the group of patients diagnosed in the 1997 to 1999 period compared with those diagnosed in the 2000 to 2003 period, with patients in the later period reporting less bother. Mean pretreatment SF-36 scores did not differ significantly between the 2 periods. When pretreatment scores on the UCLA-PCI and SF-36 were compared with published means, all patients across both time intervals were within 1 standard deviation of the mean on all scales. Cohort means were lower than population means on only 2 scales, sexual function and urinary bother on the UCLA-PCI (Tables III and IV).

### RISK STRATIFICATION

There was no significant difference in risk between the 2 periods. In 1997 to 1999, 42% of patients were low risk, 30% were intermediate risk,

low risk, 33% were intermediate risk, and 18% were high risk (Table II).

When pretreatment demographic and QOL data were stratified by risk category, the low-risk group had significant differences between the 2 periods for race/ethnicity and BMI. For low-risk patients, there were significantly more white patients and fewer African American patients in 2000 to 2003 compared with 1997 to 1999 ( $P < 0.05$ ). There were fewer normal-weight patients and more obese patients in 2000 to 2003, although the percentage of overweight patients was unchanged between the periods ( $P < 0.01$ ). There were no significant differences in the SF-36 or UCLA-PCI scores among low-risk patients in the 2 periods.

For patients in the intermediate-risk group, pretreatment demographics show significant differences between the 2 periods for race/ethnicity and insurance status. Again, there were more white patients and fewer African American patients in 2000 to 2003 ( $P < 0.01$ ). Additionally, fewer patients in 2000 to 2003 had Medicare insurance ( $P < 0.05$ ).

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