

Original article

Health-related quality of life for men with prostate cancer—an evaluation of outcomes 12–24 months after treatment

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Abstract

Objective: To determine the health-related quality of life (HRQoL) impact of prostate cancer interventions at 2 years post-treatment, and between the 12- and 24-month interval, to better characterize this measure.

Materials and methods: Patients treated at the Center for Prostate Disease Research between June 2003 and February 2010 were offered enrollment into a HRQoL study that entailed a baseline evaluation before prostate biopsy and at 3, 6, 9, 12, 18, 24, and 30 months thereafter. The instruments used were the Expanded Prostate Cancer Index Composite (EPIC), EPIC Demographic, and Medical Outcomes Study Short-Form 36 (SF-36). A Student's *t*-test and ANOVA were used to examine the association between HRQoL scores, patient demographic, and disease features. Multivariable regression models were used to analyze change over time. Estimates of risk, corresponding confidence intervals, and *P* values are presented for these longitudinal findings.

Results: The study group was comprised of 595 patients. African Americans (AA) had slightly lower baseline raw scores in all EPIC and SF-36 HRQoL domains, but on bivariate analysis, there was no statistical difference in change of scores over time. Radical prostatectomy (RP) led to the greatest decline in urinary function. Bowel function significantly worsened with the addition of hormone therapy (HT) to external beam radiation therapy (EBRT). Sexual bother and function had a marked decline in all active treatment options. Despite these changes, there were no differences in overall satisfaction. SF-36 domains were not affected by RP, whereas EBRT and EBRT + HT had universal impact. For the 12- to 24-month interval, specifically, patients who underwent EBRT fared worse over this time period, showing continued worsening of urinary bother, hormonal function, physical role, physical component summary, and overall satisfaction. Patients who underwent RP did not show any further decline in the 12- to 24-month interval, but instead showed improvement.

Conclusions: Because of the protracted nature of recovery after surgery, delayed onset of effects from radiation, potential interval decline secondary to age-related symptoms, and longevity of patients with prostate cancer, determination of long-term HRQoL outcomes is integral. Counseling with regard to these outcomes should be balanced with oncologic expectations from treatment. Published by Elsevier Inc.

Keywords: Prostate cancer; Prostate cancer treatment; Radical prostatectomy; External beam radiation therapy; Hormone therapy; Health-related quality of life

1. Introduction

Assessing impact of treatment on patient satisfaction has long been a concern of physicians. Unfortunately, quantitative measures of these outcomes many times lag behind other clinical parameters. Recently, health-related quality of

life (HRQoL) outcomes after prostate cancer (CaP) treatment have taken center stage. As multidisciplinary clinics become the standard of care for comprehensive counseling of newly-diagnosed CaP patients, providers must incorporate HRQoL outcomes into their discussion of available management options. In this way, patients can be made cognizant of not only the oncologic results of each treatment modality, but also their associated health-related side effects. Our goal was to characterize HRQoL outcomes for a variety of treatment choices in patients who had undergone

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standardized multidisciplinary counseling in an equal-access medical center [1]. We are interested in doing so 12 to 24 months after treatment to more accurately assess long-term function after adequate recovery time has elapsed and psychological impact of newly diagnosed cancer has been minimized.

2. Materials and methods

2.1. Study sample

Patients presenting to our institution, an equal-access military medical center, for counseling and management of newly diagnosed CaP between June 2003 and October 2010 were offered enrollment into an institutional review board-approved HRQoL database. Enrollment was offered at the time of primary evaluation to those thought to be at risk for CaP, and who were scheduled for a prostate biopsy. Ninety-five percent of patients offered enrollment accepted. Patients with negative biopsies are followed by annual surveys and not included in this analysis. Patients with positive biopsies then underwent evaluation in our multidisciplinary CaP clinic. This clinic consists of several counseling blocks to include an attending urologic oncologist (60 minutes), radiation oncologist (60 minutes), andrologist (60-minute group lecture), clinical psychologist (30 minutes), nurse educator (30 minutes), research personnel (30 minutes), and a combined session of the patient, spouse, and above providers (15 minutes).

2.2. Outcomes measures

The HRQoL database was established for the prospective collection of patient-reported HRQoL outcomes at regular intervals to trend these dynamic measures over time. The instruments used to measure HRQoL were the Expanded CaP Index Composite (EPIC), EPIC Demographic, and Medical Outcomes Study Short-Form 36 (SF-36). In an attempt to minimize the effect that a cancer diagnosis might have on HRQoL and to obtain a true baseline assessment, patients received their first evaluation before prostate biopsy and at 3, 6, 9, 12, 18, 24, and 30 months thereafter. The percentage of men who completed the surveys at each time point is documented in Table 1. HRQoL questionnaires were mailed to patients to be completed anonymously at home and mailed back to research coordinators at the Center for Prostate Disease Research. The completed forms were then faxed

to a third-party data collection center where results were entered into the HRQoL database. In an effort to improve compliance, if questionnaires were not received in 30 days, the patients were contacted by phone and asked to complete them. χ^2 testing was used to compare treatment frequencies by race, income, and education level. Student's *t*-test was used to compare mean HRQoL outcomes.

2.3. Demographic features

Patients enrolled in the study were asked to complete a survey containing questions regarding their race, highest level of education, marital status, and annual household income. Demographic information, disease characteristics, and results of HRQoL measures from the study sample were examined. With regard to level of education, patients were divided into those having received a college degree or less vs. patients with professional or graduate degrees. Annual household income was used to divide patients into those earning less than \$100,000 vs. those earning more.

2.4. Treatment categories

All RPs were performed by 1 of 3 urologic oncologists with Society of Urologic Oncology (SUO) certification. Nerve sparing was determined by preoperative parameters and intraoperative judgment. None of the patients who underwent radical prostatectomy (RP) received neoadjuvant hormonal treatment (NHT). Patients who received adjuvant or salvage radiation were not included in this analysis. Patients choosing external-beam radiation (EBRT) received 3-dimensional conformal intensity modulated radiotherapy in 2.0 Gray (Gy) daily fractions administered 5 days a week until a total dose of 76 Gy was reached. Patients treated with neoadjuvant hormone therapy before EBRT (EBRT + NHT) were given 10.8 mg goserelin acetate injection at 3-month intervals for a total period of 4 to 28 months determined by pretreatment clinical parameters of their disease state with longer duration being reserved for high-risk disease. For patients choosing brachytherapy, a transperineal approach using transrectal ultrasound guidance was used to deliver a 160 Gy dose by iodine-125 implants. No patients were treated with further boost by EBRT subsequently. Patients who chose hormone therapy (HT) alone received 10.8 mg goserelin acetate injections every 3 months. Patients in the expectant management (EM) group were defined as

Table 1
Percent of men from study sample that completed EPIC and SF surveys at each time point up to 24 months (*n* = 595)

Time point	3 Months	6 Months	9 Months	12 Months	18 Months	24 Months
Capture rate % (<i>n</i>)	70.8 (421)	72.6 (432)	67.6 (402)	77.8 (463)	76.8 (457)	85.2 (507)

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