Purpose of the Study
Men diagnosed with prostate cancer are greatly influenced by the potential effects on their general and disease-specific health-related quality of life (HRQoL) when selecting treatment. The objective of this study was to identify pre-treatment tumor and patient characteristics that might predict patients' "return" to preoperative continence, potency, and physical and mental health levels one year after radical prostatectomy (RP), and to assess the feasibility of creating a preoperative nomogram to predict HRQoL after RP. We defined “return” as getting close to or exceeding preoperative functioning.

Study Population
The analysis population for this study was 372 men from the Cancer of the Prostate Strategic Urologic Research Endeavor (CaPSURE™). CaPSURE™ is a long-term observational database that collects pre-treatment, treatment, and follow-up information from 34 community-based urology practices, and 6 academic/Veterans Administration clinical sites nationwide. The men in this study all had biopsy-proven localized prostate cancer (cancer did not spread beyond the gland), underwent only RP as treatment, had sufficient pre- and post-RP data for analysis, and were treated according to their physicians’ usual practice. With patients’ consent, physicians submitted medical data and patients provided self-administered questionnaires at the time of enrollment and every 3 to 6 months thereafter.

Results
The primary outcomes examined were disease-specific HRQoL - including urinary and sexual functioning - and general physical and mental HRQoL. Demographic characteristics (age, race, education, income, relationship status, co-existing conditions and pretreatment health rating) and clinical characteristics (pretreatment PSA, clinical T-stage and total Gleason score) were tested for associations with the primary outcomes. Higher HRQoL scores represented better disease-specific and general health outcomes.

Some study findings were:
- 72% of the men described their general pretreatment health rating as excellent or very good, with 63% of men having had none or only one co-existing health condition. Most patients in this sample were Caucasian (8% were African American), 93% of men were in a relationship and 46% were college graduates.
- 86% had low preoperative PSA (<=10ng/ml), 98% low tumor stage (T1 or T2), and 96% low Gleason score (<=7).
- By 12 months after surgery, 63% of subjects returned to pretreatment urinary function, 20% returned to pretreatment sexual function, 80% returned to pretreatment physical function, and 86% to mental function.
- With the exception of lower patient age (less than 65), preoperative patient and tumor characteristics do not appear to predict return to general or disease specific HRQoL.

[1] Health-related quality of life measures how a person’s health affects their ability to carry out normal social and physical activities.
[2] A computerized tool designed to help patients and their physicians decide among the major treatment choices for prostate cancer. A combination of disease factors including stage of the cancer, prostate specific antigen (PSA) level, biopsy pathology, use of hormone therapy, and radiation dosage have been incorporated into the tool.
Results (continued)

- Men younger than 65 years were 1.8 times more likely to return to pretreatment urinary and physical function, and 2.5 times more likely to return to sexual potency. At the same rate (86%) younger and older men returned to their baseline mental scores.
- Pretreatment excellent or very good general health self-ratings predict return to pretreatment mental health and return to pretreatment sexual function. Men with higher pretreatment general health ratings were more than twice as likely to return to pretreatment mental scores compared to men with low pretreatment general health ratings.
- Return to pretreatment physical health was associated with men who were less than 65 years of age, who had fewer or no coexisting conditions, higher income, higher self-rated health, and lower PSA.
- Although in general, education, income, race, & relationship status did not affect return to pretreatment HRQoL, there was a trend for men with any college education to return to pretreatment urinary function, and higher income was associated with return to pretreatment potency and physical health.
- Our findings suggest that a preoperative nomogram to predict postoperative quality of life outcomes based on patient and tumor characteristics is not feasible with this study data. Rather, variables related to surgical technique, specifically nerve sparing RP, may be of more importance in postoperative sexual and urinary function and HRQoL. Therefore, hospital and surgeon volume, and word of mouth, are the primary criteria on which a patient can base choice of provider. Although other quality indicators such as surgeon report cards are now becoming available.

Study Limitations

- We focused on preoperative factors that determined a return to pretreatment HRQoL and did not assess the effect of nerve sparing technique or the postoperative use of erectile aids.
- CaPSURE™ participants are selected by physicians from urology practices to participate and tend to be more affluent, better educated and predominantly Caucasian compared to the general population. This patient group may have been more compliant with prostate cancer screening guidelines and therefore more likely to present with localized, low grade tumors in contrast to underserved populations.
- We did not include serial PSA measurements and disease recurrence status that may affect HRQoL scores, particularly in the physical and mental domains.
- While physical and mental domain scores rebound several months after surgery, urinary and sexual function may improve up to 18 months or longer after RP. Expanding the follow-up interval may result in a greater proportion of subjects demonstrating a return to pretreatment disease-specific HRQoL.

Conclusions

Lower age is associated with greater likelihood of returning to pre-treatment continence, potency and physical health after RP. In addition, patients who underwent RP without co-existing health conditions and those with high self-ratings of health were more likely to return to pretreatment physical and mental health. Preoperative tumor characteristics are not significantly associated with regaining pretreatment HRQoL, suggesting that factors not measured in this study may be important in optimizing quality of life after RP.

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