Comparison of Recommendations by Urologists and Radiation Oncologists for Treatment of Clinically Localized Prostate Cancer

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About 180,000 men will be diagnosed as having prostate cancer in the United States this year, most with clinically localized disease. The majority of these men will choose among three primary therapies: radical prostatectomy, external beam radiotherapy, or brachytherapy.

The choice among these therapies is not easy. Because most prostate cancers are found in men in their 60s and 70s, and because these cancers generally grow slowly, many prostate cancer patients are destined to die of competing medical problems. For others, especially men with poorly differentiated tumors or high prostate-specific antigen (PSA) levels, these therapies may not be curative. Moreover, while cohort studies following surgery and external beam radiotherapy patients for 10 to 15 years have been done, patients receiving contemporary brachytherapy have not been followed up for that long. Meanwhile, all of these therapies have the potential to create adverse effects or complications.

Context Multiple treatment options are available for men with prostate cancer, but therapeutic recommendations may differ depending on the type of specialist they consult.

Objective To define and contrast the distribution of management recommendations by urologists and radiation oncologists for a spectrum of men with prostate cancer.

Design, Setting, and Participants Mail survey sent in 1998 to a random sample of physicians in the United States, who were listed as urologists (response rate 64%, n = 504) and radiation oncologists (response rate 76%, n = 559) in the American Medical Association Registry of Physicians and practicing at least 20 hours per week.

Main Outcome Measure Questionnaire addressing beliefs and practices regarding prostate cancer management.

Results Forty-three percent of radiation oncologists vs 16% of urologists would recommend routine prostate-specific antigen testing for men aged 80 years and older. For men with moderately differentiated, clinically localized cancers, and a more than 10-year life expectancy, 93% of urologists chose radical prostatectomy as the preferred treatment option, while 72% of radiation oncologists believed surgery and external beam radiotherapy were equivalent treatments. For most tumor grades and prostate-specific antigen levels, both specialty groups were significantly more likely to recommend the treatment in their specialty than the other treatment. Both groups reported giving patients similar estimates of the risks of complications due to surgery and radiation. Neither group favored watchful waiting in their treatment management except for a subset of men with life expectancies of less than 10 years and cancers with very favorable prognoses (Gleason score of 3 or 4 and prostate-specific antigen level ≤ 5 ng/mL).

Conclusions Based on this study, while urologists and radiation oncologists do agree on a variety of issues regarding detection and treatment of prostate cancer, specialists overwhelmingly recommend the therapy that they themselves deliver.

The clinical judgment of the physicians who counsel patients can play a critical role in the treatments chosen. In a 1988 survey, urologists and radiation oncologists were asked what they personally would do if they were diagnosed as having clinically localized prostate cancer. In that survey, 79% of US urologists said they would choose a radical prostatectomy, while 92% of radiation oncologists said they would choose external beam radiotherapy.
PROSTATE CANCER TREATMENT BY SPECIALTY

Table 1. Selected Respondent Characteristics

<table>
<thead>
<tr>
<th>Radiation Oncologists, % (n = 559)</th>
<th>Urologists, % (n = 504)</th>
<th>P Value</th>
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</thead>
<tbody>
<tr>
<td>Age, y</td>
<td></td>
<td></td>
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<tr>
<td>&lt;40</td>
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<tr>
<td>≥60</td>
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<td>19</td>
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</tr>
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<td>Men</td>
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<td>99</td>
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<td>Women</td>
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<td>94</td>
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<td>74</td>
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<td>21</td>
</tr>
<tr>
<td>No</td>
<td>83</td>
<td>79</td>
</tr>
</tbody>
</table>

*Indicates the percentage of total professional time spent in clinical practice.

Figure 1. Recommendation of Routine Prostate-Specific Antigen (PSA) Testing for Men by Age

Radiation oncologists and urologists were asked: “Do you recommend that primary care physicians include PSA testing as a part of the routine physical examination for men who are at average risk of prostate cancer, who are (each age group)?”

Obviously, depending on which physicians they consult, patients might well expect to get different counsel about optimal management.

We were interested in extending our understanding of the differences between specialties beyond simply their preferences for treatment. We also wanted to see whether the different specialties continued to have such polar views regarding treatment 10 years later, well into the era of PSA testing.

To these ends, in 1998, we surveyed a nationwide random sample of practicing US urologists and radiation oncologists.

METHODS

A random sample of physicians who listed their specialty as either urology or radiation oncology were selected from the American Medical Association Master List of Physicians. Subsequently, the offices of the sampled physicians were contacted by telephone to verify the address and specialty, that they were not in residency training, and that they were in clinical practice for at least 20 hours weekly.

Physicians then were sent a pretested questionnaire, a cover letter, and $10. A reminder postcard was sent to all sampled individuals; another survey instrument and cover letter were sent to nonrespondents after about 3 weeks. Finally, for those physicians who had not responded to the questionnaire, follow-up telephone calls were made to the physicians’ offices to encourage response and to identify subjects who needed another questionnaire.

The survey instrument for urologists contained questions about the diagnosis and treatment of benign prostatic hyperplasia and prostatitis, as well as prostate cancer. The instrument for radiation oncologists focused almost exclusively on prostate cancer. Whenever it made sense, comparable questions were asked of both specialties.

RESULTS

Questionnaires were returned by 76% of eligible radiation oncologists (n = 559) and 64% of eligible urologists (n = 504). Table 1 compares the characteristics of the respondents in the 2 specialties. Responding urologists were older, more often male, more likely to be in solo practice, and less likely to be salaried. When respondents and nonrespondents were compared, using data from the file from which the sample was drawn, no significant differences were noted in terms of age or region of the country. Urologists who graduated from medical school less than 20 years previously were more likely to respond than earlier graduates. Physicians in multispecialty groups were also more likely to respond than physicians in solo practice in both specialties.

Figure 1 compares both groups of specialists’ answers to questions about their recommendations for routine PSA testing. For men up through age 70 years, members of the 2 specialties made similar recommendations. Urologists are slightly more aggressive about screening than radiation oncologists but significantly more aggressive when patients are men in their 50s. The clearer trend, however, is the much more aggressive stance of radiation oncologists regarding PSA testing for men 70 years and older, and particularly for men older than 74 years. For example, while only 16% of urologists recommend routine PSA testing for men older than 80 years, 43% of the radiation oncologists do so.
When deciding among treatment options, prostate cancer patients need to consider not only the effectiveness of the options at extending life, but also their adverse effects. Sexual dysfunction and incontinence are 2 potential adverse effects of aggressive therapy for prostate cancer. How are the likelihoods of these adverse effects presented to patients by urologists and radiation oncologists? Table 3 presents the risks of these complications that the respondents said they quote to their patients. Table 3 is most striking in how similarly the 2 groups estimate the probability of complications associated with surgery and radiation.

Respondents were also asked to choose their preferred treatment for patients with tumors of varying Gleason scores and PSA levels. In Figure 3 and Figure 4, the patient profiles are ordered based on the decreasing likelihood that such a cancer would be organ-confined at surgical staging. Subjects were given the options of expectant management (watchful waiting) and androgen deprivation (as primary therapy) in addition to the potentially curative therapies. For this analysis, both forms of radiotherapy were considered together.

Both groups of specialists have some members (10%-20%) who are willing to consider watchful waiting for patients with cancers with Gleason scores...
of 3 or 4 and PSA levels no higher than 5 ng/mL. Beyond that low-risk subset, essentially no one in either group is willing to recommend watchful waiting (Figure 3).

As one would expect from the preceding data, the majority of both groups of specialists would recommend for most patients the therapy that they themselves deliver. However, there is a subset of radiation oncologists who indicated a preference for surgery for low-grade, low-PSA tumors. There are very few urologists who prefer radiation for such tumors (Figure 4).

As Gleason scores reach 7 or 8, both groups start to consider androgen deprivation as a primary therapy (Figure 3). Urologists also begin to recommend radiation more often in relationship to surgery as Gleason scores and PSA levels increase (Figure 4).

As the probability of organ-confined disease decreases, urologists become divided about the value of surgery. For tumors with Gleason scores of 8 or higher, or a Gleason score of 7 with a high PSA level, they become as likely to recommend androgen deprivation or radiation as they do surgery. However, there is a substantial minority who continue to recommend surgery even when tumors are likely to be extracapsular. Radiation oncologists, on the other hand, continue to recommend radiation for higher-risk tumors.

Finally, physicians were asked whether they believed that the 3 main potentially curative prostate cancer therapies are overused or underused in the United States (TABLE 4). A majority of radiation oncologists believe that radical prostatectomy is overused (82%), and about half think that radiation and brachytherapy are underused. In contrast, 51% of urologists think that radical prostatectomy is used at about the right rate and 37% think that external beam radiation is overused. Substantial percentages of both radiation oncologists and urologists believe that brachytherapy is both overused and underused, and a higher proportion express no opinion than for the other 2 primary therapies.

**COMMENT**

Although urologists and radiation oncologists differed in many of their beliefs regarding prostate cancer treatment, they also demonstrated agreement on a variety of issues. First, despite controversy over the value of PSA screening, responding physicians in both of these specialties are virtually unanimous in their recommendation that PSA testing be done routinely at least until around age 75 years. For men older than 75 years, the 2 specialties differ, with radiation oncologists being considerably more positive about testing older men. This position is consistent with radiation oncologists’ perceptions that they have a therapy to offer that (according to nearly a majority) is beneficial to men even with less than a 10-year life expectancy.

Second, despite the lack of published supporting evidence from randomized clinical trials, the vast majority of physicians in both specialties believe that all 3 therapies offer a sur-
Figure 4. Recommendations of Radical Prostatectomy and Radiation Therapy for Men With Clinically Localized Prostate Cancer

The left side of the figure shows the responses recommending radical prostatectomy when asked. *A prostate cancer patient of yours is 65, in good health, and has a negative digital rectal examination result and no evidence of extraprostatic spread. Which primary treatment would you most likely recommend for localized prostate cancer if this patient has the following biopsy results [list of Gleason/PSA profiles]?* The right side of the figure shows the responses recommending external beam radiation.

3 treatments. Both groups perceive surgery as being more likely to produce incontinence and sexual dysfunction than radiotherapy. Both urologists and radiation oncologists are generally convinced that nerve-sparing surgery substantially reduces the rate at which patients experience sexual dysfunction. Disagreements about probabilities of adverse effects, then, do not account for the differences in treatment recommendations noted between the specialties. Some recent studies actually suggest, however, that these estimated risks of complications for all 3 treatments may be low, and particularly low for nerve-sparing radical prostatectomy.9,13

Fifth, physicians from the 2 specialties are remarkably similar in the extent to which they would recommend either watchful waiting or androgen deprivation as primary therapies for particular subsets of men based on Gleason scores and PSA levels. Less than 25% of members of either specialty would recommend watchful waiting to men with a tumor with a Gleason score of 3, despite the fact that these patients appear to have an essentially normal life expectancy without aggressive treatment.19 Members of both specialties feel much more comfortable if patients with any degree of prostate cancer receive one of the major primary therapies. When the Gleason scores (7-8) and PSA levels (>10 ng/mL) are higher, increasing numbers in both specialties, eventually nearing half, would recommend androgen deprivation as the primary therapy. Radiation oncologists continue to recommend radiation for tumors with a higher likelihood of capsular penetration, while urologists appear more dubious about the value of surgery. This finding may reflect a difference in perspectives about when the 2 local therapies are likely to be still curative; that is, radiation oncologists may believe tumors with some degree of capsular penetration may still be effectively treated with radiation, while urologists may doubt that surgery will cure such tumors.

Sixth, despite a relative shortage of long-term follow-up data, members of both specialties generally seem to accept brachytherapy as being at least as effective as external beam radiotherapy. Urologists seem to be slightly more positive about brachytherapy than about external beam radiation therapy.

Of course, the most dramatic difference between these 2 groups of specialists is that members of each specialty tend to believe in the therapy that they themselves deliver. Radiation oncologists (72%) tend to believe that their therapy is just as good as radical prostatectomy for men with moderately differentiated, clinically localized cancer while urologists (93%) are overwhelmingly convinced that radical prostatectomy is better. This difference is critical in understanding what treatment recommendations patients are likely to hear. Presumably, the radiation therapists can justify their preference for recommending external beam radiotherapy on the basis that they believe it works just as well as surgery. In contrast, urologists believe that while men who have surgery do indeed have higher risks of sexual dysfunction and incontinence, cancer control is better with surgery, and thus radical prostatectomy is preferred.
While clinical trials have not proven that patient outcomes are improved by aggressive treatment with surgery or radiation, neither have they proven these treatments ineffective. Given our findings, it is also important to point out that the descriptions of the effectiveness of surgery and radiation therapy that patients receive from urologists and radiation oncologists would be expected to be quite different. Although some patients might find it confusing to hear quite different treatment recommendations from experienced physicians with access to the same medical literature, scheduling consultations with a member of each specialty may be the best approach to ensure that patients get a balanced picture regarding aggressive treatment options before making a decision.

Neither group of specialists studied was supportive of expectant management for any but a limited subset of men; primary care physicians appear no more enthusiastic.13 Interestingly, however, when patients hear comprehensive presentations regarding the risks and benefits of all potential treatments, a substantial minority appears to choose expectant management.16,17 Given that many more men are now being diagnosed as having prostate cancer than will ever die of it, expectant management would appear to be appropriate for some men. More research is needed to define those subgroups of men for whom an expectant approach is a reasonable, or even optimal, management strategy. An added challenge will be to ensure any such insights are effectively communicated to patients facing a treatment decision for prostate cancer.

**Funding/Support:** This study was funded by grant HS 08397 from the Agency for Healthcare Research and Quality (formerly the Agency for Health Care Policy and Research) to the Patient Outcomes Research Team.

**REFERENCES**