

Patient Preferences for Management of Localized Prostate Cancer

DENNIS J. MAZUR, MD, PhD, and DAVID H. HICKAM, MD, MPH, *Portland, Oregon*

We designed this study to determine whether patients with early localized prostate cancer prefer surgical intervention over watchful waiting, which aspects of the 2 management strategies influence patient preferences, and whether there are patient characteristics that predict their preferences for 1 strategy over the other. Structured interviews were used with 140 male patients seen consecutively at a university-based Department of Veterans Affairs Medical Center outpatient clinic. The mean age of the patients was 66.3 years. Of the 140 patients, 53% preferred surgical treatment, 42% preferred observation, 4% preferred that their physician make the decision, and 1% preferred radiotherapy. Of 74 patients selecting surgical intervention, 92% (68) reported that the possibility of complete tumor removal was the strongest factor influencing their decision. Of those selecting observation, 80% (47/59) reported being most influenced by the complications of an operation. Older patients were significantly ($P < .002$) more likely to prefer expectant management. We conclude that tumor excision is an important factor influencing patient preferences for treatment, irrespective of survival benefits. This factor should be considered when designing approaches to providing information to patients about alternative treatments.

(Mazur DJ, Hickam DH: Patient preferences for management of localized prostate cancer. *West J Med* 1996; 165:26-30)

When considering the management of patients with cancer, it must be decided how aggressively to pursue the surgical excision of the primary tumor. In patients with obvious metastatic spread, the benefits of excision may be limited and often do not outweigh the risks of a surgical procedure. In patients with apparent early-stage disease, however, the decision is influenced by many factors, including the rapidity of tumor growth if not excised, the likelihood of tumor recurrence after excision, disfigurement caused by an operation, the risks of complications or death after an operation, and patient attitudes about facing uncertain outcomes.

Previous research about treatment options has focused primarily on choices between alternative treatments that differ in their short-term and long-term survival benefits.¹⁻⁶ For example, in the case of lung carcinoma,⁷⁻⁹ surgical intervention has a higher short-term probability of death and a better long-term (5-year) survival than the alternative treatment, radiation therapy. We previously did a study in which patients were asked to consider their treatment preferences based on graphic data displays (5-year-survival curve comparisons) derived from research on stage IIB prostate cancer. We found that patients were willing to forgo better five-year survival when offered a treatment option with a lower chance of short-term complications (urinary incontinence and impotence).¹⁰

In early-stage, low-grade, clinically localized prostate cancer, the issues that have most influenced the discussion of treatment options are the rate of tumor growth in the absence of treatment and the morbid complications associated with surgical treatment. Radical surgical excision for this disease has not had a clinically important effect on long-term survival for older men.¹¹ Efforts to increase early detection and intervention for prostate cancer have not decreased morbidity and mortality rates compared with expectant management (watchful waiting).¹²⁻¹⁴ Some researchers have argued that a randomized clinical trial of alternative treatments is needed,¹⁵ whereas others have concluded that differences in management strategies are important only if a patient has a life expectancy of longer than ten years.¹⁶

Patients' preferences for active intervention probably influence their choice of treatment. In an attempt to learn about patients' preferences relevant to treatment choices, we studied patients' attitudes regarding the choice of surgical intervention or observation (expectant management or watchful waiting) for early localized prostate cancer. We sought to answer three questions:

- Would patients prefer one strategy over the other; specifically, would they prefer surgical intervention or "expectant management" if they had been diagnosed as having the earliest detectable form of prostate cancer?

From the Medical Service and Health Services Research and Development, Department of Veterans Affairs Medical Center, Portland, Oregon.

During the research on this article, the authors were government employees. Therefore, the article fits the description in the US Copyright Act of 1976 of a "US government work" and cannot be copyrighted.

Reprint requests to Dennis J. Mazur, MD, PhD, Medical Service (111-P), Dept of Veterans Affairs Medical Center, 3710 SW US Veterans Hospital Rd, Portland, OR 97201.

- What are aspects of the two management strategies that patients report most influence their preferences?
- Do demographic characteristics of patients influence their preference for one management strategy over the other?

Patients and Methods

This study was approved by the Subcommittee on Human Studies of the Department of Veterans Affairs Medical Center, Portland, Oregon. Consecutive patients being seen for continuity of care in the general medicine clinic were asked before their scheduled clinic visit to participate in a structured interview about decision making. One of us (D.J.M.) conducted the interviews. All patients whose medical records indicated cognitive problems were excluded from the study. Patients who presented to the general medicine clinic in moderate or severe pain or who were in moderate or severe emotional distress were also excluded from the study.

The study was designed to compare two treatment management alternatives for localized prostate cancer: surgical treatment and expectant management (no intervention until symptoms were detected either locally, regionally, or metastatically). The descriptions provided to subjects tended to be biased against surgical treatment. For surgical treatment, we used the verbal probability expression "possible" to describe the likelihood that an operation could remove the tumor completely. We did not specify that surgical treatment "cured" the tumor. We listed the complications of an operation using numerical probability terms represented in percentages. For expectant management, we used the verbal probability term "not possible" to describe the likelihood that the tumor could be removed in its entirety from the body. We specified that in expectant management, the tumor most likely would have extended—either locally (that is, within the prostate), regionally (for example, in an organ adjacent to the prostate, such as the bladder), or through metastasis (spread) elsewhere in the body (such as to bone)—by the time symptoms developed.

Questionnaire Format

Patients were first given a written scenario. All descriptions of the procedures were derived from the current literature on surgical treatment and expectant management in major medical centers where the treatments are studied.¹¹⁻¹⁵ All risks related to surgical intervention for early prostate cancer were derived from the published literature regarding prostate cancer.¹¹⁻¹⁵ To bias the study against surgical treatment, we selected the rates that were on the high end of the ranges published in the surgical literature. To ensure that the patients read through the entire scenario before formulating their preference for treatment and to solicit any questions the patients may have about the scenario, the scenario was read aloud to each patient.

Patients were asked to imagine that they had been diagnosed as having the earliest detectable stage of prostate cancer. They were told that prostate cancer is usually slow growing and that there are two management strategies

available: surgical intervention and expectant management (watchful waiting). Patients were also told to assume that scientific studies completed to date have not demonstrated a survival difference between surgical therapy and watchful waiting for early prostate cancer at one, two, three, four, and five years and beyond. Patients were then given the following descriptions of each management strategy.

Surgery.

- The operation can be done right away, without delay.
- It is possible that all the cancer will be removed.
- Surgery has a set of complications associated with it:

<i>Rate of Possibility, %</i>	<i>Complication</i>
1 to 2	Chance of death
8 to 14	Chance of strictures (narrowing) of the bladder and urethra that may require dilatation or opening by a surgical procedure
6 to 10	Chance of total loss of bladder control that requires wearing a pad or plastic appliance strapped to the leg to collect urine; this pad must be changed 3 to 4 ×/day, or the appliance must be cleaned regularly and emptied 3 to 4 ×/day
10 to 25	Chance of partial loss of bladder control requiring changing the pad or appliance less frequently than with total loss of bladder control
30 to 50	Chance of total impotence (loss of erection of the penis)

Expectant management.

- It is not possible that all the cancer will be removed because nothing is done to the tumor right away, and the tumor is allowed to grow.
- Initially there are no complications because no treatment is undertaken.
- Treatment is delayed, and when symptoms of the tumor occur, one of three management strategies can be undertaken: surgical therapy, radiation therapy, or no further treatment. Symptoms could be due to tumor growth locally within the prostate gland or regionally to organs around the prostate (such as the bladder). Symptoms could also result from the tumor that has metastasized (spread) to another part of the body away from the prostate, such as bone.

Surgical therapy for a more advanced prostate cancer was described as having urologic complications at or above the rates of complication of surgical therapy for early localized prostate cancer: stricture, urinary incontinence, total impotence, and death. Radiation therapy for more advanced prostate cancer was described as having similar urologic complications as surgical therapy—stricture, urinary incontinence, total impotence, and death—with a chance of bowel ulceration and bleeding and a lower chance of immediate death of 0.5% to 1%. Patients were told that with expectant management they would be carefully observed for the development of symptoms

from their prostate cancer with appropriate history, physical examination, blood tests, and studies. Patients were not told explicitly about hormonal therapy as an option in expectant management.

Patients were then asked which treatment (operation or observation) they would prefer if they were the patient in question. They were also asked whether they based their treatment preference on an aspect of the explanation of the two management strategies or on some other information not contained in the questionnaire. Patients who indicated that they based their decision on an aspect of the explanation of either surgical or expectant management were asked to circle those aspects of the explanations that most influenced their decision. Patients who indicated that they based their preference on some other information not contained in the questionnaire were asked to describe the source of the other information. All patients were then given two additional questionnaires: one on sociodemographic items and one on urologic symptoms.

The sociodemographic questionnaire contained the following variables: patient age, level of formal education, and current health status—excellent, very good, good, fair, or poor. The urologic symptoms questionnaire asked a set of “yes” or “no” questions about the following list of urologic symptoms: current ability to achieve and maintain an erection, current difficulty with urination, current urinary dribbling, and current getting up at night to urinate. Patients were also asked (“yes” or “no”) whether they had a history of a transurethral resection of the prostate, prostate biopsy, or other prostate-related surgical procedure. To study the influence of these variables on patients’ preferences, Fisher’s exact test, the *t* test for independent samples, and multiple logistic regression were done.

Results

A total of 140 male patients participated in this study. No patient refused to participate. The mean age of the patients was 66.3 years (standard deviation [SD], 10.35; range, 30 to 82), and the mean level of formal education completed was 12.7 years (SD, 2.73; range, 6 to 22). On the basis of our exclusion criteria, 10 patients were excluded from participating in the study.

TABLE 1.—Reported Influences on Patient Preferences for Choice of Treatment in Early Prostate Cancer*

Influence	Surgical Excision n = 74, No. (%)	Watchful Waiting n = 59, No. (%)
Possibility of complete tumor removal	68 (92)	--
Patient experience with previous prostate surgery		
Personal	1 (1)	5 (8)
Family, relative, or friends	4 (5)	5 (8)
Patient's age	1 (1)	1 (2)
Surgical complications	--	47 (80)
Patient's own reading about the 2 treatments	--	1 (2)

*All information obtained from patient self-reports.

Of the 140 patients, 53% (n = 74) preferred surgical therapy; 42% (n = 59) preferred expectant management; 4% (n = 6) reported the desire that their physician make the decision about treatment on their behalf; and 1 patient created his own option and reported that he wanted immediate radiotherapy.

Of the 74 patients who preferred surgical therapy, 68 (92%) reported that their choice was most influenced by the statement in the surgical explanation that “It is possible that all the cancer will be removed.” Of the 59 patients who preferred expectant management, 47 (80%) reported that the described surgical complications most influenced their decision in favor of expectant management (Table 1).

Age was significantly (*P* < .004) associated with management choice. Of the 74 patients who selected surgical treatment, 43% (32) were older than 70 years; of the 59 patients who selected watchful waiting, 59% (35) were older than 70 years. The mean age of patients preferring an operation was 63.8 (SD, 11.0) years; the mean age of patients preferring watchful waiting was 69.3 (SD, 8.4) years.

TABLE 2.—Regression Results in Patients (n = 133) Who Reported Preferring Expectant Management Over Surgical Therapy for Localized Prostate Cancer*

Criterion	Multiple Logistic Regression	
	Parameter Estimate	P Value
Age, yr† . . . . .	.074	.002
Formal education, yr . . . . .	.063	.389
Patient's general health status—excellent, very good, good vs fair or poor . . . . .	.776	.079
Whether the patient could achieve and maintain an erection . . . . .	.893	.820
Whether the patient currently had difficulty with urination . . . . .	.606	.272
Whether the patient currently had urinary dribbling‡ . . . . .	.961	.036
Whether the patient currently had to get up at night to urinate . . . . .	.276	.245
Whether the patient had ever had a TURP, prostatic biopsy, or other operation on the prostate . . . . .	.143	.756

TURP = transurethral resection of the prostate

*All information obtained from patient self-reports.
†Both increasing age of patients and patients' reports of urinary dribbling were associated with the preferences of expectant management for localized prostate cancer.

Of the urologic symptoms we assessed, only urinary dribbling was significantly (*P* < .034) associated with management choice. Of the 74 patients preferring surgical excision, 16 (22%) reported the presence of urinary dribbling; of the 59 patients preferring watchful waiting, 23 (39%) reported the presence of urinary dribbling.

To study whether patient characteristics were independently related to their expressed preferences, we did an exploratory multiple logistic regression analysis (Table 2). The dependent variable was the patient’s preference for surgical therapy or expectant management. Both patient age (*P* < .002) and the presence of urinary dribbling (*P* < .036) had significant independent effects on treatment

choice. The overall relationship of these two variables to treatment choice was modest (estimated $R^2 = .115$, $P = .0002$). Treatment choice was not associated with level of formal education, current health status, or the other urologic symptoms we assessed.

Discussion

Most previous work on patients' preferences has been based on assessing patients' willingness to trade off short-term for long-term survival benefits at five years. In this study, we told patients that research studies on early-stage, low-grade, localized prostate cancer did not indicate any difference in survival at five years or beyond. In this setting of equivalent survival and early localized cancer, we found that most patients still preferred surgical therapy. This majority of patients who preferred an operation reported basing their decision on a phrase used in the study questionnaire: that surgical therapy offered the possibility of complete tumor removal. In our study, we did not ask our patients whether they had a preference for surgery versus expectant management for localized prostate cancer before presenting them with the written scenario and questionnaire. Thus, we cannot say whether patients had preexisting preferences for surgical treatment or expectant management.

The finding of predetermined preferences of patients in favor of surgical intervention for cancer has been reported in studies of women with breast cancer. In one study, 153 women with T1, T2, N1, and N0 breast tumors were asked to choose mastectomy or conservation treatment (excision of the lump, external radiotherapy, and iridium Ir 192 wire implant to tumor bed). Mastectomy was chosen by 99 women.¹⁷ The authors concluded that

Most women came to their first appointment at the breast clinic already convinced that they had breast cancer, and presumably they had already considered the possibility of mastectomy. When their suspicions were confirmed, one third immediately said that they would have a mastectomy and one third that they would have anything but a mastectomy.^{17(p1168)}

The authors point out that one of the salient features of patients' preference for surgical therapy was the fact that the possibility existed that they might still have to have a mastectomy in the future, despite conservative management at the time of their initial decision. Thus, they speculate that what seems to be a simple decision between aggressive and conservative interventions may be influenced by a belief that treatment would be necessary eventually for the disease. Similarly, in our study we cannot say to what extent patients' preferences were influenced by the fact that surgical excision would still be a consideration in the expectant management arm.

Our study is consistent with previous work with breast cancer patients.¹⁷ A substantial number of patients—about a third in the breast cancer study and about half in our localized prostate cancer study—seemed to have a preference for radical surgical treatment of cancer, that is, to have aggressive therapy for breast or prostate cancer right away. In our population of men, however, we cannot say whether this preference existed before their participation

in our study. Thus, in comparing these two studies, it appears that a number of older men and younger women may share similar tendencies to favor radical surgery for at least these two types of cancer studied. Future research needs to be done on whether patients have these beliefs about aggressive therapies for cancers in general or whether the beliefs hold only for specific types of cancers.

We found also that older patients and those who reported having urinary dribbling were more likely to prefer expectant management than surgical therapy for localized prostate cancer. We speculate that patients who are already having problems with urinary dribbling were drawn away from the consideration of surgical therapy because of the high rate of occurrence of urinary incontinence as a side effect. Physicians who are eliciting patients' preferences in actual decision making may need to take these factors into account in their discussions with patients.

In summary, our study indicates that patients hold strong beliefs about cancer treatment. Even though we presented patients with information that tended to be biased against prostate surgery (high rates of surgical complications), half of these older male veteran patients still preferred an operation. We did not address the issue of what treatment is most effective for early-stage, low-grade, localized prostate cancer. Rather, our study focused on discovering the preferences patients have that influence their consideration of treatment options. Even though we attempted to bias patients against surgical therapy with the explicit naming of surgical complications and although we gave patients rates of complication occurrence higher than those quoted in the literature, many still preferred surgical treatment of localized prostate cancer. Thus, both urologists and primary care physicians must realize that a substantial number of patients will be coming into such discussions with a tendency to favor an operation. This tendency to favor operative management must be recognized in all studies of how best to discuss treatment choices for localized prostate cancer.

REFERENCES

1. McNeil BJ, Weichselbaum R, Pauker SG: Fallacy of the five-year survival in lung cancer. *N Engl J Med* 1978; 299:1397-1401
2. McNeil BJ, Weichselbaum R, Pauker SG: Speech and survival: Tradeoffs between quality and quantity of life in laryngeal cancer. *N Engl J Med* 1981; 305:982-987
3. McNeil BJ, Pauker SG, Sox HC, Tversky A: On the elicitation of preferences for alternative therapies. *N Engl J Med* 1982; 306:1259-1262
4. Mazur DJ, Merz JF: How the manner of presentation of data influences older patients in determining their treatment preferences. *J Am Geriatr Soc* 1993; 41:223-228
5. Mazur DJ, Hickam DH: Treatment preferences of patients and physicians: Influences of summary data when framing effects are controlled. *Med Decis Making* 1990; 10:2-5
6. Mazur DJ, Hickam DH: Interpretation of graphic data by patients in a general medicine clinic. *J Gen Intern Med* 1990; 5:402-405
7. Mountain CF: The relationship of prognosis to morphology and the anatomic extent of disease: Studies of a new clinical staging system. *In* Israel L, Chahinian AP (Eds): *Lung Cancer: Natural History, Prognosis and Therapy*. New York, NY, Academic Press, 1976, pp 107-140
8. Mountain CF, Carr DT, Anderson WAD: A system for clinical staging of lung cancer. *AJR Am J Roentgenol* 1974; 120:130-138
9. Hilton G: Present position relating to cancer of the lung: Results with radiotherapy alone. *Thorax* 1960; 15:17-18

10. Mazur DJ, Hickam DH: Patient preferences: Survival vs quality-of-life considerations. *J Gen Intern Med* 1993; 8:374-377
11. Middleton RG, Thompson IM, Austenfeld MS, et al: Prostate Cancer Clinical Guidelines Panel summary report on the management of clinically localized prostate cancer. *J Urol* 1995; 154:2144-2148
12. Catalona WJ: Management of cancer of the prostate. *N Engl J Med* 1994; 331:996-1004
13. Chodak GW, Thisted RA, Gerber GS, et al: Results of conservative management of clinically localized prostatic cancer. *N Engl J Med* 1994; 330:242-248
14. Johansson JE, Adami HO, Andersson SO, Bergström R, Holmberg L, Krusemo UB: High 10-year survival rate in patients with early, untreated prostatic cancer. *JAMA* 1992; 267:2191-2196
15. Wilt TJ, Brawer MK: The Prostate Cancer Intervention Versus Observation Trial: A randomized trial comparing radical prostatectomy versus expectant management for the treatment of clinically localized prostate cancer. *J Urol* 1994; 152:1910-1914
16. Catalona WJ: Expectant management and the natural history of localized prostate cancer (Editorial). *J Urol* 1994; 152:1751-1752
17. Wilson RG, Hart A, Dawes PJ: Mastectomy or conservation: The patient's choice. *BMJ* 1988; 297:1167-1169