PSA Screening for Prostate Cancer

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Opponents to screening offer up a number of reasons for their position: patient anxiety, incontinence and/or impotence caused by treatment, and the lack of a complete, proven cure for prostate cancer. And certainly, the cost. All of these are valid comments. But at best, they are only dealing with the elephant's tail or trunk; in other words, they are not looking at the whole picture. As a prostate cancer survivor, patient advocate, and patient counselor, I start with the question, How can we identify as many men as possible who require treatment without causing unnecessary anxiety, pain, and cost to the people who do not need treatment? The answer demands a balanced three-part system: effective screening, doctors who know how to interpret the results, and appropriate treatment options.

The flip-flop in positions on prostate cancer screening taken by the American Cancer Society and other national groups has caused considerable confusion for the male population and the health care community, and it throws the baby out with the bath water. If men are directed away from screening, we have lost a huge opportunity to make the same inroads we have made in cervical cancer, are currently making in breast cancer, and could be making in colorectal cancer. When health care bodies offer conflicting recommendations, confusion deters patients from being screened.

First, regarding screening. Screening should be mandatory, because if men are diagnosed early and receive appropriate treatment they have the opportunity for many additional years of productivity and excellent quality of life. Hankey and colleagues, in a 1999 study, reported that the "decline in the incidence of distant stage disease holds the promise that testing for prostate-specific antigen may lead to sustained decline in prostate cancer mortality."[1] The Education Center for Prostate Cancer Patients often

interacts with patients who were diagnosed with metastasized diseases on screening as early as 1991 and are still alive. Without screening, many of these patients would not be with us today. Many men would readily submit to a blood test for a PSA determination but shrink from the thought of a digital rectal exam. Others say, "What I don't know won't hurt me." These men feel validated in not being screened when an authoritative group recommends against it.

Many clinicians and health care professionals argue that we will never really know if screening will lengthen lives or has any other benefits unless there is a randomized trial. Such a trial was done. The 1999 report of Labrie amd colleagues, often overlooked, describes a randomized trial of 46,193 men in the Quebec metropolitan area conducted in 1988 to assess the impact of prostate cancer screening on cause-specific death. The authors found that "137 deaths due to prostate cancer occurred between 1989 and 1996 inclusively in the 38,056 unscreened men, while only five deaths were observed among the 8,137 screened individuals. The prostate cancer deaths during the eight-year period were 48.7 per 100,000 man-years in the unscreened compared to only 15 in the screened group. That is a 3.25 odds ratio in favor of screening and early treatment." This leads Labrie et al to conclude that "coupled with treatment of localized disease...early diagnosis and treatment permits a dramatic decrease in deaths from prostate cancer."[2-4]

A 2002 article presents a statistical analysis of all patients with prostate cancer diagnosed between 1988 and 1998, who were registered at the Walter Reed Army Medical Center. The researchers reported, "Prostate cancer was the cause of death for 37.5% of the patients in 1988-1989 compared with 15.4% in 1999-2000...Patients presenting with metastatic disease decreased from 14.1% to 3.3%" between the two periods. The researchers conclude, "A statistically significant improved five-year disease-specific survival and a decreased chance of dying from prostate cancer has occurred after the widespread implementation of PSA. We suspect that PSA testing has resulted in fewer patients presenting with metastatic disease and more patients presenting with localized disease amenable to a curative treatment. However, randomized trials are needed to confirm the improvements in survival and mortality."[5] Except for the Labrie study that began in 1988, we know of no randomized trial. However, the indicators are present in terms of the decline in prostate cancer mortality. There is also the factor of improved quality of life for many patients who are satisfactorily treated.

The argument used by some screening critics with an economic bent is that costs for screening and subsequent treatment dictate against a health policy directive for screening. A 1994 study by Benoit and Naslund noted that prostate screening was about 22% of the cost of breast cancer screening.[6] It may be assumed that it is much less today. As to treatment costs, the development of therapy alternatives over the past four years permits appropriate customized treatment. With the growing emphasis on prostate cancer research, treatment options will increase and costs will decrease. Moreover, treating men with prostate cancer who present with advanced disease requires years of ongoing therapy with androgen deprivation (ADT), chemotherapy, radiation therapy for treating complications of pain and neurologic compromise, and supportive care measures. This is far more expensive than the cost of earlier and more definitive therapy that resolves the patient's problems. In general, health care costs for advanced and terminal cancer far exceed those for cancer diagnosed earlier and eradicated. This issue does not even address the value of years of life lost prematurely to a late diagnosis and the impact on the patient's family.

In response to those who complain that screening will detect a higher number of latent cancer cases that will unnecessarily lead to treatment and drive up health care costs,

Benoit and Naslund wrote in 1995 that “prostate cancer screening does not appear to increase the rate of latent cancer detection over traditional methods of detection. In contrast, breast cancer screening does appear to increase the rate of latent cancer detection substantially when compared with traditional methods of detection.”[7]

The second part of the screening system demands clinicians who understand that screening is accompanied by evaluation. The most recent recommendations, stating that screening should be an issue between a man and his doctor, are fair. However, they overlook the point that many clinicians—even urologists—are not sufficiently versed in the complexity of the disease and available treatments.

Most clinicians use two basic inputs as the basis for doing a biopsy to establish the diagnosis of prostate cancer—the prostate specific antigen (PSA) test and/or the digital rectal exam (DRE). The PSA result and/or findings of the DRE may indicate the presence of prostate cancer. In contemporary times, the frequency of men presenting with definite findings of an abnormal DRE who are worried about having prostate cancer has dramatically dropped. Even if the PSA exceeds the so-called normal limits, even adjusted for age and race, we cannot be sure if this is due to prostatitis and/or benign prostatic hyperplasia, or a result of prostate cancer. A more evolved approach to evaluating a biomarker such as PSA involves the use of concepts such as PSA dynamics and PSA derivatives. Therefore, students of this discipline advise the use of the following:

- PSA density (nanograms of PSA per milliliter of prostate gland volume),
- free PSA percentage (a subset of PSA),
- PSA velocity (the rate of change in nanograms per milliliter per year),
- PSA doubling time, and
- free PSA percentage halving time.

Such a protocol has been advocated by Stephen Strum, MD, a medical oncologist specializing in prostate cancer since 1983. In A Primer on Prostate Cancer: The Empowered Patient’s Guide, Dr. Strum and co-author Donna Pogliano present an organized approach that involves using a complement of biologic clues easily available to the clinician faced with the issues involving a diagnosis of prostate cancer.[8] Such an approach frequently enables a clinician to establish with a high degree of probability whether a patient has prostate cancer before the man is ever subjected to a biopsy. Moreover, it yields clues as to aggressive versus non-aggressive cancer as well as low volume versus high volume cancer. These are two basic issues that are intimately tied to the decision-making issues involved with prostate cancer.

Unfortunately, doctors use the PSA 4.0 threshold as a binary measure, when in fact it is a marker that must be viewed in the context of other patient factors. At one conference, a patient said his doctor told him that he did not have prostate cancer because his result was under 4.0. The patient then asked for the result, which turned out to be 3.9. The patient became angry and asked for a biopsy, which showed the presence of prostate cancer.

Once a diagnosis of prostate cancer has been established, a full appreciation of the context of the patient must be a major part of the equation regarding the treatment options presented to the patient and his family. Too often, the recommended therapy is economically biased, resulting in grossly inappropriate treatment. An example of this involved an 85-year-old man with a PSA of 8.6 who was also afflicted with Alzheimer’s disease. His family was advised that he should undergo radical prostatectomy. Post-operatively, when his PSA still remained significantly elevated, he was then directed to receive radiation therapy. As preposterous as this case history may sound, it is true and

reflects a recent occurrence.

Therefore, physician competency is a critical issue that must be dealt with in the context of the current controversy about screening for prostate cancer. For screening to be the best choice for men and their health care providers, it must have two effects: men's lives must be lengthened, and they must have an improved quality of life. Therefore, the medical community must take up the obligation to fully understand the disease and the range of therapies appropriate to the individual patient based on his biological profile. Most importantly, we must develop methods to grade the skill of the physician treating the patient. This should be part of the natural evolution of medicine. While we strive to attain such goals, we must not throw away any opportunity to establish an earlier diagnosis of a common malignancy like prostate cancer. Forty thousand lives each year in the United States alone are lost to this disease. The case is overwhelming that men should be screened with the proviso that doctors know what to do. Human life is too precious to do otherwise.

At this point, the payoff on my screening is eight years of a high quality of life and helping many other prostate cancer patients. Society's return on investment is high.

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