DANGERS OF PROSTATE CANCER SCREENING

Cancer Screening

BY BARNETT S. KRAMER, MD

A-333

Does the evidence always support intuition?

Intuition seems to dictate that any test capable of detecting cancer early, before the onset of symptoms. must be of benefit. Unfortunately, that intuition is wrong. More importantly, it can lead to serious harm.

All available screening tests for cancer can trigger harms; but not all of them are known to be of benefit. The benefits of some cancer screening tests do outweigh the harms (for example. cervical cancer screening; colorectal cancer screening; and mammography, although there is controversy about whether to begin at age 40 or 50), but in many cases we just don't know. In some cases, we even know that harms outweigh benefit.

Because it is very difficult to make healthy people better off than they already are, a guiding principle for cancer screening should be the famous Hippocratic injunction, "First, do no harm." Most people will not die of any specific cancer, whether they are screened or not. Therefore, they can't benefit from the screening test, but they can be harmed. **For example, the lifetime risk of dying of prostate cancer is just over 3 percent. This means about 97 percent of men will not die of prostate cancer; but they can be harmed by screening and subsequent unnecessary therapy.** Likewise, about 1 percent of women will die of ovarian cancer and 99 percent will not, irrespective of screening.

A highly counterintuitive harm of screening is "over diagnosis." Screening tests are nearly always better at detecting slow-growing cancers than fast-growing, more lethal cancers. **It has been estimated that as many as 50 percent of prostate cancers detected by PSA screening are so slow-growing that they never would have caused any medical problems had they not been detected by screening**.

Autopsy studies in men who died of causes unrelated to prostate cancer show that more than half of men over age 65 harbor silent prostate cancers. **The fact is, more men die with prostate cancer than die of prostate cancer.** Nevertheless, screening can detect many of these cancers and trigger unnecessary surgery, radiation, and/or hormonal therapy, resulting in serious adverse health effects such as urinary or stool incontinence, and, in the case of hormonal therapy, bone mineral loss and risk of heart attack. These risks might be worth it if we were confident that prostate cancer screening saves lives—but we are not.

Over diagnosis is not restricted to prostate cancer screening. Studies suggest it occurs with screening for a variety of cancers, including thyroid cancer, melanoma, lung cancer, and even breast cancer. In fact, over diagnosis is probably the rule rather than the exception with cancer screening tests. With over diagnosis, some cancers can be cured that didn't need to be cured in the first place. Accordingly, some screening can produce a net harm that nevertheless looks like a benefit in the eyes of the physician.

Another misleading phenomenon is known as "lead time bias," when screening tests advance the date of diagnosis without necessarily changing the date of death. In the process, they may introduce the false impression of better survival simply because survival is measured from the date of diagnosis. Again, an ineffective, or even harmful, screening test could appear beneficial.

A useful source of information is the National Cancer Institute's PDQ, a free online database that describes what is known about the benefits and harms of all commonly used cancer screening tests (www.cancer.gov/cancertopics/pdq/screening). Armed with that information, you can make an informed decision with your doctor.

—Barnett S. Kramer, MD, is the associate director for disease prevention at the National Institutes of Health. He is also editor-in-chief of the JNCI, *a journal published by Oxford University Press and not affiliated with the NIH. The opinions expressed in this column are those of the author and should not be interpreted as official opinions or positions of the NIH.*

Cure Today.com FALL 2009

A-227B

DOES SCREENING (AND TREATMENT) BENEFIT MEN WITH PROSTATE CANCER

To screen, or not to screen: that is the question. Whether men should get tested for prostate cancer when they have no symptoms is a long-running debate within the medical community.

There is good evidence, according to the Centers for Disease Control and Prevention (CDC), that the current prostate specific antigen (PSA) test approved in 1986 by the Food and Drug Administration to screen for prostate cancer can detect the disease in its early stages. Evidence, however, is mixed and inconclusive about whether early detection actually saves lives. A study published in the Jan. 9, 2006, issue of the Archives of Internal Medicine found that screening with the PSA test does not cut down on deaths from the disease. Moreover, it is not clear whether the benefits of screening outweigh the risks of follow-up testing and cancer treatments.

At the same time, evidence, such as a drop in the prostate cancer death rate (1) which some say could be due to improved treatments--suggests that early PSA testing may be saving lives. There are no definitive answers.

According to the National Cancer Institute (NCI), other than skin cancer, prostate cancer is the most common form of cancer and the second leading cause of cancer-related deaths among men in the United States. But doctors' recommendations on screening for the disease vary. Some encourage annual screenings for men older than age 50; others recommend against routine screening. American Cancer Society (ACS) Screening Director Robert Smith, Ph.D., says that the January Archives of Internal Medicine study "isn't strong enough to say definitively that prostate cancer screening isn't valuable."

The controversy, meanwhile, is contributing to a growing quandary for doctors and their patients: what's a man to do?

Until there is more evidence and, perhaps, a scientific consensus of the screening benefits, most doctors and medical organizations, including the NCI, the ACS, and the CDC, agree that men should learn all they can about what is known and what is not known of the benefits and limitations of early detection and treatment for prostate cancer, so that they can make their own informed decisions.

5-06

---

(1) Increased screening finds huge numbers of men with low grade, non-life threatening prostate cancers. Most of these men will be convinced to be treated, and will survive. These men are now included in the survivorship statistics, thereby greatly skewing the data to "prove the huge decrease in the percent of treated men not dying from prostate cancer." It is a scam.

A-303

NCI Cancer Bulletin 1/23/07 Volume 4, number4

Prostate Cancer Screening May Do More Harm than Good late in Life

The test used to screen for prostate cancer, the PSA (prostate-specific antigen) test, is controversial among many physicians. But even advocates of PSA testing do not recommend it for men who might not live long enough to see a benefit from screening.

The potential benefits of PSA testing are unclear, but experts agree that a man would probably have to live more than a decade to experience them. This is because the forms of prostate cancer that are detected by PSA testing late in life often progress slowly, as opposed to the more aggressive and often fatal forms of the disease that may occur earlier.

The potential harms of PSA testing, on the other hand, can occur immediately and are often substantial. These include additional testing, psychological distress, and side effects from treating a disease that might never have caused any harm.

For these reasons, most prostate cancer screening guidelines recommend against testing elderly men with limited life expectancy. But many men in their 70s and 80s are being screened anyway, and this has raised concerns among some physicians.

"This test can definitely cause more harm than benefit when used in an elderly population with multiple health conditions," says Dr. Louise Walter, a geriatrician and researcher at the San Francisco Veterans Affairs (VA) Medical Center and the University of California, San Francisco.

She led a recent survey of PSA testing in the VA medical system. Many physicians have been ordering PSA tests for men in their 70s and 80s, including some men in poor health, the researchers reported last November in the Journal of the American Medical Association (JAMA).

"I was surprised by how often very elderly men who have other severe diseases are getting prostate cancer screening," says Dr. Walter, who undertook the study after seeing some of her patients being harmed by PSA testing.

The test, she points out, measures blood levels of the PSA protein and is thought to be less informative in older men. Changes associated with aging such as a benign enlarged prostate can cause high PSA levels even when there is no prostate cancer.

And the benefits of testing remain unproven for all men, regardless of age or life expectancy. Two large randomized trials are investigating whether screening reduces prostate cancer deaths. Both have been ongoing for about 12 years and have yet to demonstrate a survival advantage for the men being screened.

Nonetheless, the prospect of having cancer based on the test is "very scary" to many men. "They may not realize that prostate cancer can range from an indolent disease that will never affect anyone to aggressive cancers that will kill them," says Dr. Walter.

Some of her patients became so distracted by looking for a disease they did not have that they neglected the diseases they did have.

She gives the example of an 85-year-old patient with inoperable heart disease. As she was treating him, another doctor tested his PSA and found it to be elevated. The patient grew anxious and requested a biopsy.

The result came back, and the doctor told him he had low-grade prostate cancer, which progresses slowly and kills relatively few people. The doctor told him not to worry, but the man couldn't stop worrying.

He considered himself a cancer patient and flew to Mexico for an alternative treatment. Meanwhile, his heart condition worsened, and he died of a heart attack 6 months later.

"He spent those final months worrying about his cancer, which was the least of his problems," says Dr. Walter. "He should never have been screened."

A-320

THE SOURCE - HARVARD SCHOOL OF PUBLIC HEALTH
FALL-2004

Prostate cancer screening: What do we know?

Any screening test that can find cancer early is a good thing, right? Not exactly when it comes to prostate cancer screening. With every cancer screening test, there is a balance of risks and benefits, with the major benefit being that these tests can find cancer early, when it is usually most treatable. For cancers of the breast, colon, and cervix, this benefit of screening clearly outweighs any risks. For prostate cancer, though, the picture is less clear: the risks and benefits of screening are more evenly weighted, so men need to consider their own values and be fully informed before making any decisions.

Understanding the available tests

Two screening tests are currently available for prostate cancer: the digital rectal exam and the PSA test. With digital rectal exams, the doctor or nurse inserts a lubricated, gloved finger into the rectum to feel the prostate for anything that seems unusual. With PSA tests, a blood sample is taken to measure the amount of prostate-specific antigen (PSA) in the blood. PSA is a protein that is produced by prostate cells and is sometimes elevated in men with prostate cancer.

Like all screening tests, the purpose of the digital rectal exam and PSA test is to find the disease at the earliest possible stage. However, it is not clear whether finding prostate cancer early is necessarily beneficial. For men with aggressive prostate cancer, finding and treating it early may save lives, but for most men with prostate cancer, the disease will never become life threatening. In fact, some men diagnosed with prostate cancer may be receiving treatment for tumors that would have never spread or even caused health problems had they been left untreated. On top of this, the treatments themselves often cause health problems or interfere with quality of life. Recent data from the ongoing Prostate Cancer Outcomes Study suggest that five years after treatment for localized disease, 5 to 15 percent of men experience incontinence, 20 to 30 percent report bowel urgency, and approximately 50 percent are not sexually active.

← UNNEEDED TREATMENT

← SIDE EFFECTS

Despite these limitations and risks, PSA testing remains incredibly popular. Among men age 50 and older in the U.S., 75 percent have had the test at least once, and 57 percent have had it in the past year. Why are so many men getting a test that has unknown benefits and well-documented risks? It's likely a combination of many factors, including the ease of the PSA test and its major media exposure.

Making decisions about screening

Although some organizations promoted PSA testing more freely in the past, most well-regarded organizations, including the American Cancer Society and the U.S. Preventive Services Task Force, do not currently recommend testing for all men. Instead, they recommend that men talk to their doctors about whether prostate cancer screening is right for them. In general, men should start discussing these issues with their doctors around age 50. Because African American men and those with a family history have a higher risk of prostate cancer, they should start these discussions earlier, at age 45. Balancing the risks and benefits of PSA testing is a very personal matter, and each man has to decide what is right for him. The best ways to do this are to be well informed and to talk about the issues in detail with a trusted doctor. — HD ◆