

To Screen or Not to Screen: Ongoing Debate in the Early Detection of Prostate Cancer

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Debate about the use of prostate-specific antigen (PSA) tests to screen prostate cancer in men is ongoing. Prostate cancer is the most common cancer after skin cancer in men and the second most deadly after lung cancer. An elevated PSA level can lead to this cancer's diagnosis and treatment even before the onset of symptoms. However, other causes also can create a high PSA level, which may lead to men being unnecessarily treated for prostate cancer. This article will shed some light on the issue and discuss prostate cancer screening.

For most Americans, simply saying or hearing the word *cancer* brings about terrible images and thoughts. Losing hair, undergoing chemotherapy treatment or surgery, and becoming frail or possibly dying all are common associations. A prostate cancer diagnosis leads many individuals down a path that includes numerous painful procedures, incontinence and impotency issues, and a label of *cancer patient* for the rest of their lives (National Cancer Institute [NCI], 2010) (see Figure 1). However, for some men, diagnosis and treatment are unnecessary and avoidable. Published studies have shown that mass screening for prostate cancer with the prostate-specific antigen (PSA) blood test has led to overdiagnosis and subsequent overtreatment because of a high percentage of false-positive results (Albertsen, 2005).

Results from two large trials have contributed to this debate. Andriole et al. (2009) looked at 77,000 men randomized to annual screening (PSA testing plus annual digital rectal examination) or to no screening for six years. The results showed that no difference was noted in prostate cancer-related deaths. Unfortunately, many of the men in the control group received PSA testing outside of the trial. The second trial, conducted by Schröder et al. (2009), examined 182,000 men randomized to PSA screening or to no screening. During the nine-year follow-up period, fewer prostate cancer-related deaths occurred in the screened group than in the control group. How-

ever, both of these studies were widely considered flawed, either theoretically or methodologically.

Problems With Prostate-Specific Antigen Testing

PSA tests frequently are performed in numerous settings as a screening for prostate cancer, but the guidelines vary among experts. The American Cancer Society (2010) recommends that men older than age 50 have a discussion with their doctor about the pros and cons of PSA screening, and then make an informed decision concerning the risks and benefits of undergoing the screen. The American Urological Association (2009) suggests PSA screening for all men beginning at age 40, whereas the U.S. Preventive Services Task Force ([USPSTF], 2008) does not recommend the screening.

An effective test to detect cancer for asymptomatic screening purposes should be able to find a cancer when it is present (high sensitivity) and not miss it when it is present (high specificity). When used, the test should contribute to a reduction in mortality from the disease. PSA levels

can be elevated because of a number of different noncancerous causes, including benign prostatic hypertrophy, prostatitis, inflammation, or prostatic infection, which can lead to a false-positive diagnosis (Lin, Lipsitz, Miller, & Janakiraman, 2008). When an elevated PSA is found, the next step is to perform a biopsy to determine whether the elevation is the result of prostate cancer. Because so many false-positive test results occur, many men have biopsies only to find out they do not have prostate cancer. Situations also exist in which the biopsy result is positive but, based on factors such as the natural history of prostate cancer, aggressiveness and extent of disease, and the patient's age and overall health status, treatment would provide more harm than benefit. In this scenario, whether this earlier detection and consequent earlier treatment affect overall mortality from prostate cancer is unclear (NCI, 2010).

PSA testing cannot be used to determine stage of cancer. Stages are determined with a prostate biopsy or other tests as indicated. Based on the stage, treatment options can range from watchful waiting or active surveillance to surgery and radiation. PSA testing may

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Digital Object Identifier: 10.1188/11.CJON.97-98