Prostate Cancer: Current Evidence Weighs Against Population Screening

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Prostate–specific antigen (PSA) measurement, obtained from a simple blood sample, has been widely proposed as a screening tool for prostate cancer, which is currently the leading cancer diagnosis in men in several developing countries. In many parts of the world, the PSA test is now widely used, and is frequently used indiscriminately.

The PSA test was first approved by the US Food and Drug Administration in 1986 for monitoring progression in patients with prostate cancer. It was later approved for the detection of disease in symptomatic men and has not been approved for screening asymptomatic men.

If one is to accept the finding that screening decreases the risk of prostate cancer death by 20%, forty-eight additional men were diagnosed in the screening group to save 1 life. This means an average man who gets screened is 48 times more likely to be harmed by screening than he is to be saved by screening at 9 years after diagnosis. The harms include that he may be diagnosed, undergo needless treatment, and suffer the side effects of prostate cancer treatment, which can include impotence, incontinence, mental anguish, and even death.

The real impact and tragedy of prostate cancer screening is the doubling of the lifetime risk of a diagnosis of prostate cancer with little if any decrease in the risk of dying from this disease. In 1985, before PSA screening was available, an American man had an 8.7% lifetime risk of being diagnosed with prostate cancer and a 2.5% lifetime risk of dying from the disease. Twenty years later, an American man had a 17% lifetime risk of being diagnosed with prostate cancer and a 3% risk of dying from prostate cancer.

In the best case scenario, a 20% reduction in the risk of death means the average man who chooses screening decreases his risk of prostate cancer death from a lifetime risk of 3% to a lifetime risk of 2.4%. In exchange, he increases his risk of diagnosis from between 6% and 9% to at least 17%. In a heavily screened population, the risk of diagnosis is likely more than doubled to >20%.

Is more than doubling one's risk of diagnosis worth the absolute decrease in prostate cancer death risk from 3% to 2.4%, if indeed there is this 20% decrease in risk? Men should discuss the now quantifiable risks and benefits of having a PSA test with their physician and then share in making an informed decision.

Trial results for and against testing have always been contentious among supporters and opponents of screening. With few trials available for evaluating prostate cancer screening, and with contamination rates in the control group likely to be very high, questions will undoubtedly be posed regarding the reliability of the findings. However, there is currently weak to no evidence available from these trials indicating that PSA testing reduces the risk of death from prostate cancer.

Widespread prostate cancer testing is commonly practiced. Testing has been based on blind faith in early detection as opposed to being based on evidence of a decrease in mortality as observed in well–designed clinical trials. Prostate cancer screening and the treatment of early stage disease is also a profitable industry. Despite discouraging findings from now 4 randomized trials of prostate cancer screening, much of the controversy surrounding the use of PSA as a population screening test remains unresolved. The high prevalence of PSA testing will be difficult to reverse. If we are to stem the spiraling costs of health care, we must move toward the use of evidence–based rather than the faith–based or profit–based practice of medicine.

The collective data clearly cannot justify mass screening and indeed appear to justify support for a recommendation against mass screening. Given all the information available, the best that can be deduced is that guidelines such as those of the American Cancer Society appear to remain valid. Shared decisions to use or not use PSA testing for the early detection of prostate cancer should remain within the physician–patient relationship, and should include discussion of the quantified risks and benefits. The patient and physician should make a shared decision about screening, taking into account the patient's concerns regarding prostate cancer and its treatment. Shared decision making, compared with simple "informed consent," should become standard. We use the term "shared decision making" to stress that the weight of the decision should not be thrown into the patient's lap.