Screening for Prostate Cancer: A Summary of the U.S. Preventive Services Task Force Review

By Kristine Nally

Prostate-specific antigen (PSA) testing began in the United States in the late 1980s, and millions of men, typically over the age of 40, are tested each year. A high PSA level may indicate the presence of prostate cancer or other benign prostate conditions. Most physicians and medical organizations in the United States recommend annual PSA tests to all men over the age of 50 and to men over the age of 40 with prostate cancer risk factors, for example, a family history.

However, the U.S. Preventative Services Task Force recently released guidelines recommending against all routine PSA testing in men. After reviewing results from studies published since 2002, they concluded that the overall harm of PSA screening outweighs the benefits. While the recommendations are still open for comment and the American Urological Society has officially disagreed, patients may be confused.

The harms and the benefits of both the screening and the treatment of early-stage prostate cancer were evaluated by the task force. The screening itself is a simple blood test, but if the PSA is elevated, a prostate biopsy is usually the next step to determine if cancer is present. A prostate biopsy is an invasive procedure. In the studies reviewed, the reported risk of complications was 0.5-1% and included serious infection and urinary retention. In the largest study included in the review, 76% of prostate biopsies for an elevated PSA level identified no cancer.

If a prostate biopsy does indicate that cancer cells are present, treatment choices are complicated by the fact that some early-stage prostate cancer is aggressive, but the majority is slow-growing and unlikely to progress. Approximately 90% of prostate cancer detected through screening is classified as early-stage, and there is currently no method to determine if an individual patient's prostate cancer is slow-growing or aggressive. Men are given a choice between treatment and watchful waiting. The majority of men in the United States choose treatment, usually prostatectomy (surgery to remove the prostate) or radiation. Both procedures carry a high risk of side effects. In the studies reviewed by the task force, 20% and 33% of men treated with prostatectomy experienced urinary incontinence and erectile dysfunction, respectively. Prostatectomy was also associated with death within 30 days of the operation (0.5%) and cardiovascular events (0.6% to 3%). For radiation treatment, a 14% risk of erectile dysfunction and an association with bowel dysfunction was reported.

The two largest and highest quality studies that guided the task force recommendations reported conflicting results on overall prostate cancer-related mortality. The U.S. Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Screening Trial randomly assigned 76,693 men between the ages of 55 and 74 to either a prostate cancer screening group (annual PSA test and rectal exam) or a control group that

received no screening. After 7 years, the PLCO study reported an increased incidence of prostate cancer in the screened group, but no statistically significant decrease in prostate cancer-related mortality. To put it simply, more men were treated in the screened group but more lives were not saved.

The European Randomized Study of Screening for Prostate Cancer (ERSPC) randomly assigned 182,000 men, from 7 countries, between the ages 50 and 74 to PSA testing every 2 to 7 years. After a median duration of 9 years, the ERSPC study also reported an increased incidence of prostate cancer in the screening group and no significant decrease in prostate cancer-related mortality. However, sub-analysis of 162,243 men between the ages of 55 and 69 did show a statistically significant decrease in prostate cancer-related mortality. An absolute risk reduction of 0.07% was reported with an estimated 48 men treated and 1 life saved for every 1410 men screened. These benefits were highest at one participating center in Sweden and no benefit was seen when data from this center was not included.

The task force review is limited in that it does not include data on newer treatments for prostate cancer or new methods of PSA analysis, for example, the PSA velocity test. In addition, the age group that showed benefit in the ERSPC study (55 to 69 years) was not analyzed in the PLCO study. It does, however, clearly show that the decision to add one more blood test to a routine physical is not as straight forward as it appears. Physicians need to be prepared to discuss the possible benefits and harms of screening for prostate cancer before the blood test is ordered.

About the Author

Kristine Nally is a freelance writer residing in Phoenix, Arizona. She specializes in science, medicine, and health and is an active member of the American Medical Writers Association. She has a strong background in cancer biology and has worked hands-on in several research laboratories including the Max-Planck Institute for Molecular Genetics and the Southwest Biomedical Research Institute. More recently, Kristine worked as a Program Coordinator for research that focused on cancer fatigue, a project joint funded by Scottsdale Healthcare and the University of Arizona.

References:

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