PSA Testing: Is There An Answer?

PSA Testing: Is There an Answer?

Eric Klein, MD

I. Randomized Screening Trials

PLCO and ERSPC were large-scale, randomized trials, one in the United States, and one in many countries in Europe. Both had a similar design although they weren't identical. They took men and basically flipped a coin. Half were followed for a number of years without getting PSA screening. Half got PSA screening. The end result for both trials was death due to prostate cancer. The question they asked was if you get screened yearly with PSA are you less likely to die of prostate cancer? That is a key issue.

The Kaplan-Meier curves showing the cumulative risk of dying of prostate cancer demonstrate that in the PLCO there was no difference after six or seven years. In the European trial there was no difference in the curves. At ten years, the curves started to separate, and the European trial showed a 20% benefit in terms of reducing the risk of prostate cancer. There has been a lot of debate about why the two trials came to different conclusions and what they mean.

1. Caveats

The PSA cutoff that was used in PLCO was probably too high, and about 40% of the men who entered the trial had been screened previously. We know that if you've been screened previously with multiple PSAs you're unlikely to be diagnosed with a lethal prostate cancer. Another big problem was that half of the men who weren't supposed to get a PSA got one. The other problem with the PLCO was that most of the men who were recommended to have a biopsy didn't actually have one.

The numbers in the European trial showed that the mortality risk was reduced by 20%, but in order to attain that, you had to screen about 1,400 men and operate on 50.

2. Conclusion

The conclusion is that PSA is still important. The problems with PLCO make it non-interpretable, and the European trial is the one that should be paid attention to showing that in a population of men who aren't heavily screened being screened for PSA reduces the risk of prostate cancer. That being said, we do have to screen many men to save one life, and so we need to be smarter about how PSA is used.

II. Screening Guidelines

1. AUA Best Practice Statement

The AUA best practice statement indicates that getting a PSA is an individual decision for men with a 10-year life expectancy. They also suggest that men get a PSA in their forties as a baseline. Finally, men should get a PSA at subsequent intervals based on PSA level and risk factors.

2. American Cancer Society

The American Cancer Society advises against routine screening but suggests that PSA be offered as an option.

3. USPHTF

The U.S. Preventative Health Task Force does not feel that the PSA is useful as a routine screen in men over 75.

III. Best Screening Method

Simply using a PSA cutoff is not the way to go. PSA velocity is a useful tool for men in their forties, and there is the risk calculator or nomogram. Using PSA alone, however, is not the smartest way to screen in the post-randomized trial era.

IV. Summary

PSA still has a role in the post-clinical trial era, but we need to use it smarter than we have in the past.

PSA Testing: Is There An Answer?

Questions

I. As a patient it is very confusing to decide which guidelines to follow. What recommendation would you make as a single caveat?

Eric Klein, MD

Offering an uncomplicated sound bite does the complexity of the decision making a disservice, and what I try to do in determining with a patient whether they should go to biopsy is explore with a patient his risk and his concern over his risk of cancer and explore as well his concerns about some of the potential side effects of treatment. Patients can then make a relatively informed decision. The challenge is that a lot of physicians don't have the information to have that discussion.

Angelo DeMarzo, MD

Whether we should screen all men with a PSA is a controversial issue, but I have had a baseline test and most urologists I ask say that they have had one. Again, you have to look at other risk factors.

II. Do you think active surveillance is safe in a high-risk African American male with Gleason 6 and a strong family history of prostate cancer?

Angelo DeMarzo, MD

The patient would need to be counseled that his risk is going to be higher than the average for progression, but it would be the patient's decision to make. Today we serial biopsy every year with pretty good sampling, and I feel relatively comfortable with that approach. If he wanted to undergo watchful waiting, I don't think that is unreasonable.