PSA velocity screening for prostate cancer may lead to unnecessary biopsies

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Guidelines of several cancer organizations have recommended that men with a rapid rise in PSA have a biopsy for prostate cancer, even if there is no other indication and the PSA is within the "normal" range. But change in PSA - known as PSA velocity -- is a poor predictor of prostate cancer, and may lead to many unnecessary biopsies, according to a study published online February 24 in the *Journal of the National Cancer Institute.*

Researchers have known for many years that PSA velocity is statistically correlated with prostate cancer risk. But little is known about how much PSA velocity adds to the value of other indicators or how useful it is to men and their physicians in making decisions about biopsies. And there has never been a study of PSA velocity in men who have had biopsies in the absence of a high PSA or a positive digital rectal exam.

Andrew Vickers, Ph.D., at Memorial Sloan-Kettering Cancer Center, and colleagues assessed how well PSA velocity predicted cancer (positive biopsy results) in 5,519 men who took part in the Prostate Cancer Prevention Trial. The men in this analysis were all in the group that received a placebo, so their prostate cancer risk was not influenced by the drug finasteride (Proscar), which was tested in that trial. All had a biopsy at the end of the study, regardless of their PSA levels, PSA velocity, or other indicators.

As expected, the authors found a statistical association between PSA velocity and biopsy outcome. But when they adjusted for other risk indicators, such as age, race, PSA levels, and digital rectal exam, there was virtually no association between PSA velocity and biopsy outcome.

"There was little evidence that PSA velocity adds an important level of predictive accuracy to either standard predictors or to PSA alone," they write.

The authors also evaluated guidelines stating that men with a rapid rise in PSA should have a biopsy even if their PSA is low and there are no abnormal findings on a clinical exam. The vast majority of the men who fell into this category (about 80%) did not have cancer, suggesting that use of PSA velocity would lead to many unnecessary biopsies. PSA alone was a better predictor of biopsy outcome in these men than PSA velocity.

"In other words," they write, "if a clinician feels that the current PSA thresholds are insufficiently sensitive, he or she would be better off identifying patients to biopsy by using low PSA thresholds than by adding PSA velocity as a criterion for biopsy."

The authors conclude that PSA velocity should not be included in prostate cancer screening guidelines.

In an accompanying editorial, Siu-Long Yao, M.D., and Grace Lu-Yao, Ph.D., of the Cancer Institute of New Jersey agree that the findings suggest that PSA velocity does not help doctors and patients decide what to do about screening results.

"PSA velocity measurements take time to acquire, and recognizing that such data add relatively little information may help prevent inappropriate postponement of follow-up in affected patients," they write. "Avoiding the wait to acquire subsequent PSA values may also help reduce some of the anxiety associated with testing." They go on to say that the results of this study serve to "remind us that the use of PSA as a screening tool still leaves much to be desired."

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