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# Urologists identify 7 biomarkers that may help pinpoint prostate cancer recurrence

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A simple blood test may help doctors better predict whether prostate cancer will recur or spread in patients who have undergone surgery for the disease, researchers at UT Southwestern Medical Center have found. In a study published in the June 15 issue of *Clinical Cancer Research*, UT Southwestern scientists identified a panel of seven biomarkers that can predict with 86 percent accuracy which prostate cancer patients will experience a recurrence and progression of the disease. Biomarkers are proteins circulating in a patient's blood that are specific to a disease.

Current risk assessment methods, which include stage and grade of cancer and the level of prostate-specific antigen, can predict prostate cancer recurrence with about 70 percent accuracy.

"There are several unresolved issues in the clinical and surgical management of prostate cancer, one of them being the identification of men who have insignificant cancers and can be followed, and another being the identification of men most likely to have spread of disease and early or late recurrence," said Dr. Claus Roehrborn, chairman of urology at UT Southwestern and one of the study's authors. "In the future, once we can reliably identify those patients, we may be able to offer additional treatment to counteract that risk and give those men a better chance for a permanent cure. The panel of biomarkers is an important step in this direction."

For nine years, Dr. Shahrokh Shariat, who is now a resident in urology at UT Southwestern and the study's lead author, has been collaborating with basic-science researchers and clinicians to find a comprehensive group of biomarkers associated with prostate cancer that could more accurately predict the biological behavior of the disease.

Using commonly available blood testing methods, Dr. Shariat and his team measured the levels of seven biomarkers in 423 patients who were subsequently surgically treated with a radical prostatectomy and bilateral lymphadenectomy.

Of the study participants, 75 had a recurrence of their cancer. All 75 had elevated levels of at least several of the seven biomarkers. Dr. Shariat's seven-biomarker model was able to accurately predict the risk for recurrence 86.6 percent of the time.

"We found that a combination of independent yet complementary markers may provide a more accurate prediction outcome compared to single markers," Dr. Shariat said. "This could help physicians provide individualized care and targeted therapy for patients. It will also allow us to design clinical trials to target these individual biomarkers."

Prostate cancer is the most commonly diagnosed cancer and the second leading cause of cancer death in men in the United States. Although prostate-removal surgery and radiation therapy have been successful in controlling the disease, up to 40 percent of patients experience a relapse.

"A prediction tool based on the biomarkers we tested could improve the accuracy of standard models and help doctors counsel patients better about their risk for prostate cancer recurrence and help to determine the course of treatment," Dr. Shariat said. "There is no doubt that we are approaching a time when use of proper biomarkers will help detect, monitor and manage the progression of this disease, as well as assist with therapeutic decisions."

The next step is to explore the role of these biomarkers in patients treated with other therapies, such as radiation, and patients with a different range of disease severity.

Currently, the seven-biomarker panel is being externally validated in a clinical trial at two medical institutions, one in the United States and the other in Europe.

## Source: **UT Southwestern Medical Center**

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