New blood marker may predict prostate cancer spread

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Researchers report finding a new blood biomarker that enables close to 98 percent accuracy in predicting the spread of prostate cancer to regional lymph nodes. Their study is published in the March 1 issue of *Clinical Cancer Research*, a journal of the American Association for Cancer Research.

When cancer spreads beyond a solid tumor, it often does so at a microscopic level that typically cannot be identified by conventional imaging methods such as CT scans. The new blood test measures levels of endoglin, a plasma biomarker that has been previously shown to predict the spread of colon and breast cancer. In this study, researchers concluded for the first time that endoglin could help predict whether a patient's prostate cancer would spread beyond the solid tumor site into their lymph nodes.

"For prostate cancer, we have hit the limit of our ability to classify risk in these patients before initial surgery. We currently use prostate specific antigen, Gleason grade and a rectal exam, but the predictive value of those three tests is inadequate for predicting what cancers will spread. Conventional imaging modalities used for clinical staging in prostate cancer are inadequate to detect small but clinically significant lymph node metastases." said study author Shahrokh F. Shariat, MD, chief urology resident at the University of Texas Southwestern Medical Center.

"Although it is recognized that pelvic lymphadenectomy can provide

important staging and prognostic information, it is still not clear in whom this procedure should be done. Doing pelvic lymphadenectomy on all patients is not universally practiced, as this procedure could be time consuming and is not without morbidity. As such, it would be of tremendous benefit to have an accurate blood marker that identifies patients in whom pelvic lymphadenectomy should be done," said co-author Claus G. Roehrborn, MD, professor and chairman of Urology at the University of Texas Southwestern Medical Center.

Shariat and his colleagues observed 425 patients who had undergone surgery to remove both their prostates and associated pelvic lymph nodes. Researchers measured the levels of plasma endoglin using a commercially available blood test. Higher plasma endoglin levels were associated with an increased risk of cancer spread to the lymph nodes. Each 1 ng/mL increase of plasma endoglin increased the risk for cancer spread into the lymph nodes by 17 percent.

When researchers added endoglin levels to their usual methods of prediction, the accuracy improved from 89.4 percent without endoglin to 97.8 percent. Blood levels of endoglin may allow doctors to predict the risk of cancer spread at an earlier stage and with higher accuracy than currently available methods.

"Despite strides in the management of prostate cancer, approximately 25 percent to 30 percent fail primary curative treatment such as radical prostatectomy and radiotherapy. This is often due to spread of cancer cells beyond the original tumor site. Use of plasma endoglin could help identify patients at risk for lymph nodes metastasis who should undergo pelvic lymphadenectomy. In addition, it may spare patients at low risk of lymph node metastasis the potential morbidity of an unnecessary lymphadenectomy," Shariat said.

The authors stressed that some limitations of this study should be noted.

The retrospective study, the standard lymph node sampling, and the small number of events support the need for multicenter prospective studies before the clinical use of endoglin as a marker for predicting lymph node metastasis in patients with clinically localized prostate cancer.

“Ultimately endoglin will need to be combined with three of four other markers to predict risk with greater certainty. The problem with biomarkers is that there is a tremendous variability among patients, but this moves us forward from what we were able to do with imaging and with our other commonly used methods,” Shariat said.

Source: American Association for Cancer Research