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Researcher discovers new predictor of prostate cancer recurrence

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An Oregon Health & Science University Cancer Institute researcher has found a biomarker that may help improve the ability to predict if a man's prostate cancer is going to come back after surgical removal.

In order to make this discovery, researchers examined prostate cancer tissue samples that had been removed during surgical procedures on cancer patients. The researchers found that men whose tumors showed a silencing of the gene CDH13 had a five-fold increased risk of prostate cancer recurrence compared with men whose tumors showed no silencing of this gene, according to Joshi Alumkal, M.D., OHSU Cancer Institute member and assistant professor of medicine, (hematology/medical oncology), OHSU School of Medicine. In normal cells, this gene is active, but in some cancer cells it may be turned off, which leads to a propensity for metastasis, or spreading.

The research, "DNA Methylation as a Predictor of Prostate Cancer Recurrence," will be presented as a poster on Thursday, Feb. 14 at the 2008 American Society of Clinical Oncology Genitourinary Symposium in San Francisco.

In this study, the largest of its kind examining DNA methylation changes and prostate cancer recurrence, the research team looked at tissue samples from 151 research subjects with localized prostate cancer with at least five years of follow-up after their prostatectomies. During prostate cancer formation, the DNA may be modified through a process called DNA methylation, which turns off many important genes called

tumor suppressor genes that act as the brakes on cancer cell growth or cancer cell spread. CDH13 is a prime example of one of these genes.

Two-thirds of the subjects were free of recurrence; one-third had a recurrence.

“In the clinic, those of us who care for patients with prostate cancer look at the pathology report and PSA blood test to determine how a patient will do after surgery and how aggressive their tumors might be. However, these tools are not perfect. We were searching for a biomarker to identify patients for whom these clinical predictors currently mis-classify as being at low risk for recurrence. Finding such a predictor would improve upon our existing tools and would allow us to make more accurate predictions about tumor behavior down the road,” Alumkal said. “Given that there were approximately 218,890 new cases of prostate cancer diagnosed in 2007 and 27,050 deaths, this work may have far-reaching implications.”

Before this finding can be incorporated into routine clinical practice, it must be confirmed in a separate, larger group of patients.

Source: Oregon Health & Science University

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