Making the Move to EHR: What to Know, When to Start, How to Get Beyond the Challenges

BY HEATHER LINDSEY

A peek at what other centers and practices are doing (Part I of a series)

See Page 16
Specific Metabolite Found Related to Aggressive Prostate Cancer

Researchers from the University of Michigan Comprehensive Cancer Center have identified a panel of small molecules—i.e., metabolites—that appear to indicate the presence of aggressive prostate cancer.

"One of the biggest challenges we face in prostate cancer is determining if the cancer is aggressive. With this research, we have identified a potential marker for the aggressive tumors," senior study author Arul Chinnaiyan, MD, PhD, Howard Hughes Medical Institute investigator and Director of the Michigan Center for Translational Pathology and the S.P. Hicks Endowed Professor of Pathology, said in a news release.

In the study, published in the February 12th issue of *Nature* (2009;457:910–915), he and his coresearchers looked at 1,126 metabolites across 262 samples of tissue, blood, and urine associated with benign prostate tissue, early-stage prostate cancer, and metastatic prostate cancer. Alterations in metabolites were mapped, and 10 were identified that were present more often in prostate cancer than in the benign cells and that were present most often in the advanced cancer samples.

"When we’re looking at metabolites, we’re looking several steps beyond genes and proteins. It allows us to look very deeply at some of the functions of the cells and the biochemistry that occurs during cancer development," Dr. Chinnaiyan said.

One metabolite in particular, the amino acid sarcosine, appeared to be one of the strongest indicators of advanced disease: Levels were elevated in 79% of the metastatic prostate cancer samples, in 42% of the early-stage cancer samples; and were not found at all in the cancer-free samples.

Sarcosine was found to be a better indicator of advancing disease than PSA testing and was detected in urine, meaning that there is hope that a simple urine test might be feasible, Dr. Chinnaiyan said.

In addition, the researchers found that sarcosine is involved in the same pathways that are linked to cancer invasiveness, suggesting that sarcosine could be a potential target for future drug development.

The news release noted the disclosure that the University of Michigan has exclusively licensed all pending patents covering the technology involved to Metabolon, a company with expertise in discovering biomarkers using metabolomics; and that Dr. Chinnaiyan is on the company’s Advisory Board, and along with three of the other coauthors of the study owns equity in Metabolon.

ARUL CHINNAIYAN, MD, PhD (the winner of AACR’s 2008 Award for Outstanding Achievement in Cancer Research): “When we’re looking at metabolites, we’re looking several steps beyond genes and proteins. It allows us to look very deeply at some of the functions of the cells and the biochemistry that occurs during cancer development.”