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Will lung cancer recur? A genetic test may provide the answer

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The goal of developing reliable genetic tests to guide lung cancer treatment has taken a step forward. Researchers at Columbia University recently evaluated the ability of five high-risk genetic profiles, or signatures, to predict the likelihood that cancer would recur in patients whose non-small cell lung cancer was caught early and surgically removed. They will present their findings at the American Thoracic Society's 2008 International Conference in Toronto on Tuesday, May 20.

"Non-small cell lung cancer, which accounts for about 80 percent of all lung cancers, has a high rate of recurrence even when treated early," said lead researcher William Bulman, M.D. "If we knew specifically in which patients the cancer was likely to come back, we could recommend more aggressive therapy to those patients." Dr. Bulman noted that genetic signatures for breast cancer are already commercially available and are used by physicians to guide treatment recommendations.

Dr. Bulman and his colleagues, Drs. Charles Powell and Alain Borczuk, tested five survival gene signatures in 21 patients, with squamous or adenocarinoma tumors who were followed for up to two years after their surgery. The accuracy of the tested signatures ranged from 40 to 80 percent and varied with the type of tumor. A 42-gene signature, for instance, was 82 percent accurate in predicting survival with lung adenocarcinoma, but only 70 percent accurate in predicting survival with squamous cell carcinoma.

"Lung cancer is a heterogeneous disease, and information captured in

these tests helps to distinguish tumors in terms of clinical outcomes." explained Dr. Bulman. "Our findings not only indicate that genetic signatures have clinical utility in personalizing the treatment of lung cancer, but also that it may be necessary to use different gene-based risk predictors with different tumor subtypes."

Dr. Bulman noted that this research is part of a larger effort to understand the biological basis for why some early stage lung cancers progress and metastasize and why some do not. He added that he and his colleagues are planning to test these genetic signatures in new cohorts of patients for the purposes of targeting patients at high risk for recurrence.

Source: American Thoracic Society