Medical Xpress

MicroRNA profiling identifies chemoresistance in small cell lung cancer

January 12 2010

At least three tumor microRNAs appear to predict when first-line chemotherapy will prove ineffective in some patients with small cell lung cancer, according to data presented at the AACR-IASLC Joint Conference on Molecular Origins of Lung Cancer.

"For patients with small cell lung cancer, there are really only about two chemotherapy options. We need to be more precise with our treatments and identify earlier who is going to be resistant in order to design better clinical trials that will identify effective therapies for these at-risk patients," said Glen J. Weiss, M.D., director of thoracic oncology at the Virginia G. Piper Cancer Center at Scottsdale Healthcare and co-head of the Lung Cancer Unit at the Translational Genomics Research Institute (TGen).

Weiss said of the approximately 32,000 new cases of small cell lung cancer diagnosed every year, between 15 and 30 percent will be chemoresistant to first-line therapy.

For the current study, Weiss and colleagues evaluated 34 patients with small cell lung cancer of varying stages. Patients were seen at the Virginia G. Piper Cancer Center at Scottsdale Healthcare. Median age of the patient group was 69.1 years; half of them were men. All 34 patients received systemic chemotherapy, and there were two complete responses and 13 partial responses. Two patients had stable disease and four had progressive disease.

Three microRNAs were identified as being closely linked with chemoresistance: miR-92a-2*, miR-147 and miR-574-5p. Although 47 percent of the patients presented with hypertension and 32 percent presented with emphysema or chronic obstructive pulmonary disease, neither of these co-morbidities were linked with chemoresistance.

Provided by American Association for Cancer Research