

ALK rearrangement found in nearly 10 percent of patients in Lung Cancer Mutation Consortium

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ALK rearrangement has been found in 9.6% of lung cancer patients tested in the Lung Cancer Mutation Consortium, and MET amplification in another 4.1%, reflecting how many patients might benefit from targeted therapies such as crizotinib, according to research presented at the 14th World Conference on Lung Cancer in Amsterdam, hosted by the International Association for the Study of Lung Cancer (IASLC).

The Lung Cancer Mutation Consortium (LCMC), involving 14 U.S. cancer centers, was established to evaluate [genetic alterations](#) in 1,000 patients with advanced [lung adenocarcinoma](#).

CLIA-certified labs at each site are using multiplex assays to profile eight genes previously linked to lung cancer, AKT1, BRAF, EGFR, [HER2](#), KRAS, MEK1, NRAS and PIK3CA. Two other genes, ALK and MET, have been tested by fluorescence in situ hybridization (FISH) for rearrangements or amplifications.

"High quality molecular diagnosis for multiple markers can be achieved in a reasonable period of time to select patients for targeted therapy," said Prof. Marileila Varella Garcia, Ph.D., a professor of [medical oncology](#) at the University of Colorado School of Medicine.

Put simply, ALK rearrangement occurs when the head (promoter) and tail (active domain) of the gene split. Either part may then fuse with another gene. When the active domain of ALK fuses with a hyperactive promoter such as the EML4 promoter, it creates a fusion oncogene that has been associated with non-small cell lung cancer.

[Lung cancer](#) patients with ALK rearrangement have been found in previous studies to respond well to crizotinib, an ALK inhibitor.

In the LCMC study, researchers looked for ALK fusion with EML4 (EML4-ALK) or other partners, and MET amplification. ALK rearrangement was detected in 9.6% of patients and MET amplification in 4.1%.

ALK mutations were associated with younger age, median 52.3 years; ALK negative subjects had a median age of just under 60 years. ALK positive subjects were more likely to be never-smokers than ALK negative subjects (64% vs. 31%), less likely to have smoked in the past (33% vs. 61%) and more likely to have experienced liver metastasis (21% vs. 8%). No association was found between ALK-positive status and sex, gender, stage or brain metastasis.

Provided by International Association for the Study of Lung Cancer

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