EGFR gene signature predicts non-small cell lung cancer prognosis

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Epidermal growth factor receptor (EGFR) is a validated therapeutic target for non-small cell lung cancer. Researchers have now discovered a 93-gene signature that is associated with the presence of EGFR mutations in tumors from lung cancer patients and is a favorable prognostic marker in patients with early stage lung cancer.

"We hope this mutation signature will be able to define patients with these tumor types who will then respond to EGFR inhibition," said Pierre Saintigny, M.D., Ph.D., a research scientist at the University of Texas M. D. Anderson Cancer Center.

Data presented at the AACR-IASLC Joint Conference on Molecular Origins of Lung Cancer have immediate clinical implications. The EGFR-mutation signature will be evaluated as a predictor of response in the BATTLE (Biomarker-integrated Approaches of Targeted Therapy for Lung Cancer Elimination) I trial, which will be presented later this year.

For the current study, the researchers conducted messenger RNA expression profiling on 195 human lung adenocarcinoma samples. They found a 93-gene signature that identified the presence of EGFR mutation and was validated in multiple cohorts of lung cancer patients. Furthermore, the presence of this gene signature was significantly correlated with drug sensitivity to erlotinib and gefitinib in non-small cell lung cancer cell lines.

Saintigny said the EGFR-mutation signature may help guide medical treatment decisions, may provide prognosis information beyond EGFR-mutation status and may give some biological insights in EGFR-mutant tumors.

Provided by American Association for Cancer Research

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