Genetic study stirs hope for lung cancer patients

The first large and comprehensive study of the genetics of a common lung cancer finds that more than half the tumors from the cancer have mutations that might be treated by new drugs already in the pipeline or that could be easily developed. For the tens of thousands of patients with that cancer — squamous cell lung cancer — the results are promising because they could foretell a new type of treatment in which drugs are tailored to match the genetic abnormality in each patient, researchers say.

“This is a disease where there are no targeted therapies,’’ said Dr. Matthew Meyerson of the Dana-Farber Cancer Institute in Boston, referring to modern drugs that attack genetic abnormalities. He is a lead author of the paper, with more than 300 authors, published online in the journal Nature on Sunday. ‘‘What we found will change the landscape for squamous cell carcinoma.’’

The study is part of the Cancer Genome Atlas, a large project by the National Institutes of Health to examine genetic abnormalities in cancer. The study of squamous cell lung cancer is the second genetic analysis of a common cancer, following a study of colon cancer. The work became feasible only in the past few years because of enormous advances in DNA sequencing that allow researchers to scan all the DNA in a cell instead of looking at its 21,000 genes one at a time. The result has been a new appreciation of cancer as a genetic disease, defined by DNA alterations that drive a cancer cell’s growth, instead of a disease of a particular tissue or organ.

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