

Genetic Changes in Tumor Can Predict Treatment Benefit for Patients With Non-Small Cell Lung Cancer

This study showed that for some people who have non-small cell lung cancer (NSCLC) with a mutation (change) to the *epidermal growth factor receptor (EGFR)* gene in the tumor, treatment with the drug gefitinib (Iressa) slowed cancer growth. The *EGFR* gene produces a protein that helps lung cancer cells grow and spread. Gefitinib is a type of targeted therapy that targets faulty genes and proteins that contribute to cancer growth and development.

For patients with NSCLC with *EGFR* gene mutations in the tumor who received gefitinib, the time it took for the cancer to grow and spread was three months longer than for those who received conventional chemotherapy with the drugs carboplatin (Paraplat, Paraplatin) and paclitaxel (Taxol). Treatment with conventional chemotherapy worked better to slow cancer growth and spread for patients with NSCLC without *EGFR* mutations. For these patients, the time it took for the cancer to grow and spread was about four months longer with carboplatin and paclitaxel than with gefitinib.

What this means for patients

This study shows that the genetics of a person's tumor can affect which treatment will best slow the growth and spread of NSCLC. "Doctors should consider testing patients similar to those in this study for the *EGFR* mutation," said lead author Masahiro Fukuoka, MD, PhD, Professor of Medicine at Kinki University School of Medicine in Osaka, Japan. "These findings are also good news for patients because gefitinib tends to have fewer side effects than conventional chemotherapy, and is given by mouth instead of in a vein, which could provide a higher quality of life for patients."

Because this study was done only in Asian countries, all patients who participated in the study were Asian. The patients who benefited from gefitinib were also nonsmokers or light smokers. Researchers do not know if the benefits would be the same for patients of other races or for patients who smoke more heavily.

What to Ask Your Doctor

- What type of lung cancer do I have?
- Is *EGFR* gene testing recommended?
- What treatment options are available?
- What clinical trials are open to me?

For More Information

[Listen \[1\]](#) to Dr. Masahiro Fukuoka discuss this study during the May 14, 2009 presscast

[Cancer.Net Guide to Lung Cancer \[2\]](#)

[Understanding Targeted Treatments \[3\]](#)

Links:

[1] http://www.asco.org/ASCOv2/Department%20Content/Communications/Downloads/May14Presscast%20Dr_Fukuoka.mp3

[2] <http://www.cancer.net/patient/Cancer+Types/Lung+Cancer>

[3] <http://www.cancer.net/patient/All+About+Cancer/Cancer.Net+Feature+Articles/Treatments%2C+Tests%2C+and+Procedures/Understanding+Targeted+Treatments>