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PDF generated on July 22, 2016 from

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[Epidermal Growth Factor Receptor \(EGFR\) Testing for Advanced Non-Small Cell Lung Cancer \[1\]](#)

April 11, 2011

Introduction

The American Society of Clinical Oncology (ASCO) has issued a [provisional clinical opinion](#) [2] on using epidermal growth factor receptor (EGFR) testing to help predict the benefit of treating patients with advanced non-small cell lung cancer with an EGFR tyrosine kinase inhibitor. A provisional clinical opinion offers direction to doctors and others who treat people with cancer after the publication or presentation of information that could change testing or treatment decisions.

Background

Cancer begins when normal cells begin to change and grow uncontrollably, forming a mass of cells called a tumor. In a cancer cell, genes mutate (change) in ways that are harmful. In a healthy cell, EGFR allows cells to grow and divide. When there are too many receptors caused by a mutation, as happens in cancer, the cancer cells continue to grow and divide. In the United States, about 15% of patients with non-small cell lung cancer have mutations to the EGFR. Some research studies have shown that mutations to the EGFR may predict whether certain types of drugs, called tyrosine kinase inhibitors (TKIs), can help treat lung cancer.

TKIs are a type of targeted therapy. Targeted therapy is a treatment that targets specific genes, proteins, or the tissue environment that help cancer cells grow and survive. Specifically, some

TKIs block EGFR from working, which can help stop or slow tumor growth. These include the drugs erlotinib (Tarceva) and gefitinib (Iressa). Currently, these drugs are not approved by the U.S. Food and Drug Administration as an initial treatment for patients with lung cancer.

Recommendation

In the provisional clinical opinion, ASCO recommends that if a doctor is thinking about giving an EGFR TKI to a patient with advanced non-small cell lung cancer who has not previously had chemotherapy or an EGFR TKI, the doctor should test the tumor EGFR mutations to determine the most appropriate treatment. Testing for EGFR is done on the sample of tumor removed during a biopsy.

What this Means for Patients

“EGFR testing helps us move toward our goal of tailoring treatments for the patient,” said lead author Vicki Keedy, MD, Assistant Professor of Medicine at Vanderbilt-Ingram Cancer Center in Nashville, TN. “We've learned over the years that non-small cell lung cancer is many different diseases. We want to find the different molecular changes of these individual diseases in order to develop specific therapies, rather than just take something off the shelf in a one-size-fits-all approach.”

The provisional clinical opinion co-author Giuseppe Giaccone, MD, PhD, Chief of the Medical Oncology Branch at the National Cancer Institute, added, “For patients who do not have the mutation, giving erlotinib first is not the right thing to do. It does not work as well for those patients, and we may be losing the opportunity to give chemotherapy, which could be more effective.”

It's important to talk with your doctor about the type of lung cancer you have and if EGFR mutation testing is recommended for you. If your doctor recommends one of these drugs, it's important to discuss the risks and benefits, as well as the expected outcome, of treatment.

Questions to Ask Your Doctor

- What type of lung cancer do I have?
- What are my treatment options?
- Which treatment do you recommend? Why?
- Will my tumor be tested for an EGFR mutation? If not, why?
- If an EGFR TKI is recommended, what are the side effects of treatment?
- How can you help me manage any side effects?

For More Information

[Guide to Lung Cancer](#) [3]

[Understanding Targeted Treatments](#) [4]

[Facts About Personalized Cancer Medicine](#) [5]

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Links

- [1] <http://www.cancer.net/research-and-advocacy/asco-care-and-treatment-recommendations-patients/epidermal-growth-factor-receptor-egfr-testing-advanced-non-small-cell-lung-cancer>
- [2] <http://www.asco.org/practice-guidelines/quality-guidelines/guidelines/lung-cancer#/9986>
- [3] <http://www.cancer.net/node/19148>
- [4] <http://www.cancer.net/node/24729>
- [5] <http://www.cancer.net/node/24522>