Study Shows Molecular Testing of Non-Small Cell Lung Cancer Is Possible at Community Hospitals

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A study in Germany showed that it is possible for local community hospitals to test non-small cell lung cancer (NSCLC) for molecular factors involved in the cancer. This means that a greater number of patients will have access to these tests. These molecular factors can be genes, proteins, or features of the tissue environment that contribute to cancer growth and survival. The results of tests for molecular factors often determine whether targeted therapy is a treatment option. Targeted therapy is a treatment that targets the molecular factors involved in cancer growth.

For NSCLC, targeted therapies include erlotinib (Tarceva), which targets epidermal growth factor receptor-1 (EGFR1), and crizotinib (Xalkori), which targets changes in the *ALK* gene. In addition, there are other molecular factors associated with NSCLC, including the *KRAS* and *BRAF* genes. Until recently, testing for these factors was still being studied and only available in academic medical centers, making it challenging for patients at community treatment centers to have access to these tests.

For this study, researchers set up a molecular screening network that included non-academic community hospitals in Germany. In these hospitals, 77% of the lung tumor samples removed during a biopsy (removal of a small amount of tissue for examination under a microscope) were sent to a central laboratory to look for the molecular factors involved in NSCLC growth. Overall, 40% of these samples had molecular changes that could be treated with the targeted therapies discussed above. For the patients with NSCLC, all of those with an *ALK* mutation (change) who were able to take crizotinib received the drug, and three-quarters of those with EGFR changes received drugs targeting EGFR, such as erlotinib.

What this means for patients

"Several of the most effective drugs used to treat advanced non-small cell lung cancer are only effective for patients whose tumors have specific molecular features," explained lead author Thomas Zander, MD, of the University Hospital in Cologne, Germany. "Because of advances in molecular testing and the ease of doing this testing in many laboratories, our research shows that state-of-the-art personalized medicine is possible in community hospitals and not just in advanced academic medical centers." According to Dr. Zander, testing helps identify the patients most likely to benefit from certain drugs and those that may not be helped by the drug so that these patients can be spared the cost and side effects of drugs that are unlikely to be effective.

Questions to Ask Your Doctor

- What type of lung cancer do I have? What does this mean?
- Will testing be done to determine the molecular factors involved in my cancer? Where will testing be done?
- How will the results affect my treatment options?
- What are my treatment options?
- What treatment plan do you recommend? Why?

For More Information

Guide to Lung Cancer [1]

EGFR Testing For Advanced NSCLC [2]

Understanding Targeted Treatments [3]

Facts About Personalized Cancer Medicine [4]

Links:
[1] http://www.cancer.net/patient/Cancer+Types/Lung+Cancer
[2] http://www.cancer.net/patient/Cancer+News+and+Meetings/Expert+Perspective+on+Cancer+News/Epidermal+Growth+Factor+Receptor+%28EGFR%29+Testing+for+Advanced+Non-Small+Cell+Lung+Cancer
[3] http://www.cancer.net/patient/All+About+Cancer/Cancer.Net+Feature+Articles/Treatments%2C+Tests%2C+and+Procedures/Understanding+Targeted+Treatments
[4] http://www.cancer.net/patient/All+About+Cancer/Cancer.Net+Feature+Articles/Treatments%2C+Tests%2C+and+Procedures/Facts+About+Personalized+Cancer+Medicine