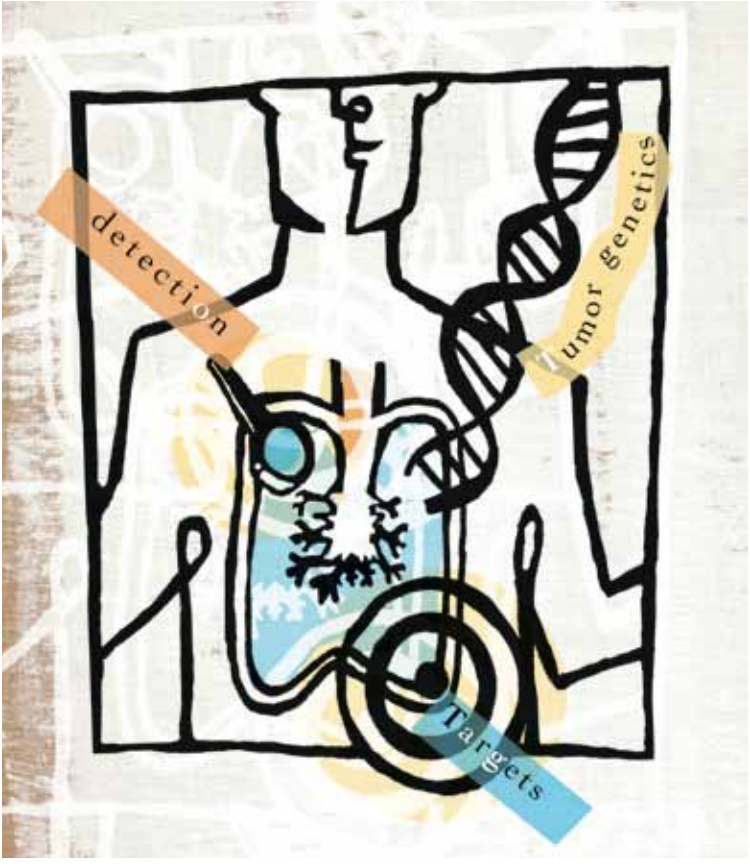
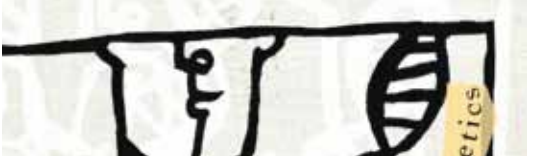
A Patient's Guide to Advances in Lung Cancer



The Biology of Lung Cancer ■ New Methods for Detection ■ **The Latest Treatment Options** ■ Questions to Ask Your Doctor ■ **Resources**

cure
CANCER UPDATES, RESEARCH & EDUCATION

Based on science, but filled with humanity, *CURE* makes cancer understandable.



A Patient's Guide to Advances in Lung Cancer

EACH YEAR, about 220,000 people are diagnosed with lung cancer in the United States. The good news is this number is beginning to decrease.

THE DISEASE'S IMPACT escalated steadily for decades since the 1930s, due mainly to the popularity of smoking during much of the 20th century. Lung cancer has been the leading cancer killer among U.S. men since the 1950s and women since the late 1980s. However, due to declines in smoking in more recent decades, death rates among American men have been dropping since the early '90s and have just leveled off among women.

In a substantial portion of new cases, the disease has already spread. It can be difficult to diagnose in its early stages when few, if any, symptoms are apparent.

Many symptoms of lung cancer, such as a persistent or worsening cough, shortness of breath, wheezing, hoarseness, and chest pain, are also symptoms of other conditions or diseases, so they can be difficult to link to the cancer. Other symptoms more likely to raise suspicion of lung cancer include frequent lung infections, coughing up blood, persistent fatigue, and unexplained weight loss.

While smoking is by far the biggest risk factor for lung cancer, people who are exposed to secondhand smoke are also at risk. Other risk factors include exposure to radon (a radioactive gas that is released from soil and rocks); exposure (frequently in the construction or chemical industries) to substances such as asbestos, arsenic, chromium, nickel, soot, or tar; radiation of the chest or breast; and a family history of lung cancer.

However, many people who have no currently known risk factors are diagnosed with lung cancer. Researchers are working to understand whether certain genetic characteristics are more likely to lead to lung cancer development. Some research indicates that women who have never smoked may be at higher risk for lung cancer than men who have never smoked, although there is still debate on this issue.

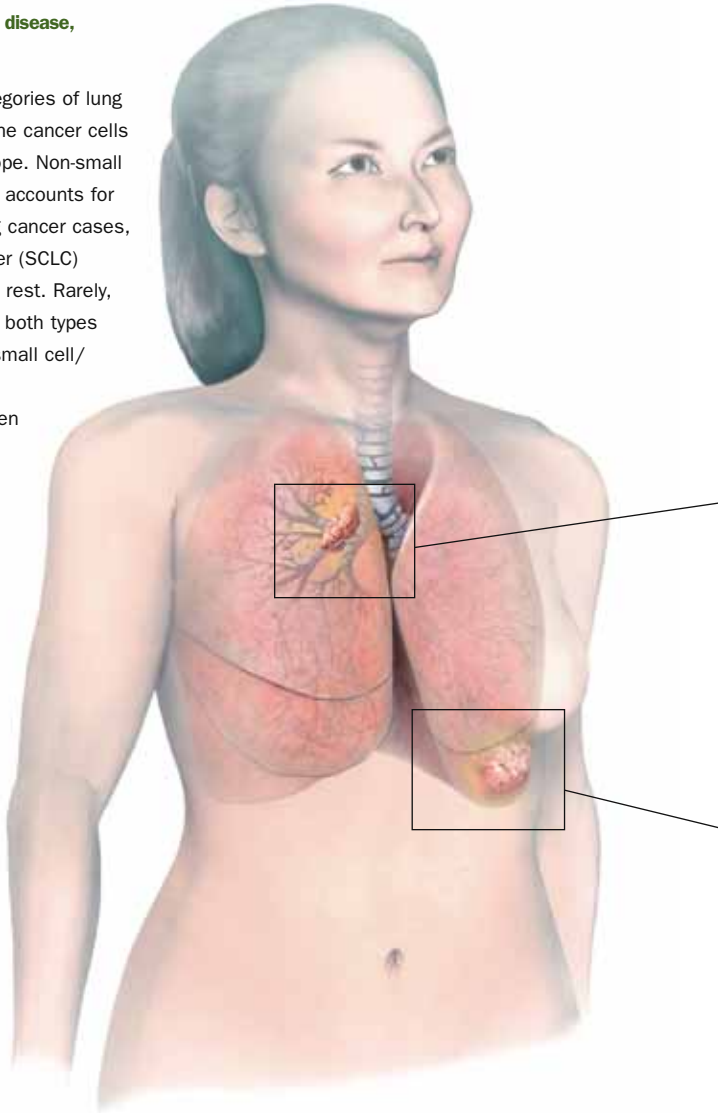
The good news is that research is beginning to reveal some of lung cancer's vulnerabilities, providing hope that lung cancer can be detected earlier and treated more effectively. Scientists are investigating ways to detect lung tumors early in people who are at high risk, so treatments can better contain the cancer. Research is also revealing many biological subtypes of lung cancer, each with specific traits that make them more susceptible to certain "targeted" treatments. Each day, researchers and doctors learn more about how use of such targeted therapies and known chemotherapy agents can be better matched to the right patient based on characteristics of the individual tumor. New insight into cancer biology, including how tumors develop a necessary blood supply, is also leading to additional therapies.

Types of Lung Cancer

LUNG CANCER is not one disease, but many.

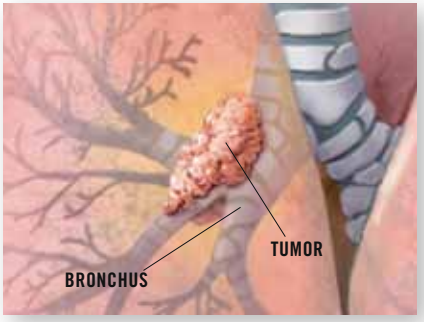
There are two major categories of lung cancer, named for how the cancer cells appear under a microscope. Non-small cell lung cancer (NSCLC) accounts for about 85 percent of lung cancer cases, and small cell lung cancer (SCLC) accounts for most of the rest. Rarely, a cancer has features of both types and is known as mixed small cell/large cell cancer.

NSCLC is further broken down into three main subtypes, based on the size, shape, and origin of the cancer cells. Adenocarcinoma, which accounts for about 40 percent of NSCLCs, is usually found in the outer part of the lung. Squamous cell carcinoma, which accounts for up to 25 percent of NSCLCs, is usually found in the middle of the lungs. Large cell carcinoma, about 10 percent of NSCLCs, can start



LOCATING THE TUMOR

BECAUSE NON-SMALL CELL LUNG CANCER isn't one disease, it can be categorized based on certain characteristics of the tumor, including where it originates in the lung. The most common subtypes of NSCLC are adenocarcinoma and squamous cell carcinoma.



Squamous cell carcinomas are usually found centrally in the lung near the bronchi.

Adenocarcinomas are found near the edge of the lung.

ILLUSTRATIONS BY PAM CURRY

anywhere in the lung and tends to grow aggressively. There are other, less common subtypes of NSCLC. While smoking is the single biggest risk factor for developing NSCLC, people who quit smoking decades ago, and those who have never smoked at all, can develop NSCLC.

SCLC often starts in the bronchi, the large air passages leading from the trachea to the lungs, near the center of the chest. It is also sometimes called oat cell cancer, oat cell carcinoma, or high-grade neuroendocrine carcinoma. SCLC almost always occurs in people with a history of smoking.

In recent years, medical science has grown increasingly able to further classify lung cancers, based on how a host of genes, proteins, and other molecules influence tumor cells. This evolving grasp of molecular factors is shedding light on what makes some lung cancers grow—and respond to treatment—differently than others. These genetic differences are becoming more important because an increasing number of targeted therapies are being developed and tested for the different biological subtypes.

Diagnosis & Early Detection

BECAUSE SYMPTOMS of lung cancer may not occur until the disease is advanced, most lung cancers are diagnosed after they have spread beyond the lungs. Right now, early-stage disease is usually found incidentally during tests for other medical conditions.

Actual diagnosis is made by microscopic examination of lung cells, which can be collected in several ways, including from mucus coughed up from the lungs (a test known as sputum cytology); bronchoscopy (where a tube for viewing, and possibly collecting samples, is inserted into the trachea and large airways); and biopsy (where cells are extracted from the lung during surgery or using a carefully placed needle). Doctors are likely to perform any of a variety of procedures, including various types of diagnostic surgery, PET or CT scans, or other tests, to learn more about the cancer and to determine whether it has spread.

EARLY DETECTION

While early detection methods exist for other cancers—such as the colonoscopy for colon cancer, or the Pap smear for cervical cancer—there currently is no widely accepted screening method to detect lung cancer in people without symptoms. Researchers are testing various methods to see whether they would be effective for early screening. This effort stands to benefit the 90 million Americans who currently smoke or have smoked in the past and are especially at risk for lung cancer.

■ Imaging Techniques

An imaging method, known as a spiral CT scan, is being studied as a possible screening tool for lung cancer. In spiral CT scans, an X-ray machine moving in a spiral motion captures images of the lungs and surrounding area, and a computer compiles the images into a detailed three-dimensional view.

At this point in time, it is unclear whether CT scans will be an effective screening tool for lung cancer and reduce deaths due to the disease. Multiple studies of CT screening have yielded results showing promise, as well as concern.

One study found that even though CT screening increased lung cancer diagnoses and surgeries to treat the disease, no additional lives were saved. Another study reported a dramatically high 10-year survival rate for patients who were screened and found to have early-stage lung cancer. But experts note this might be a misleading measure of CT screening's effectiveness because survival is measured from the date a cancer is first identified. By detecting the cancers earlier than they would be detected without the screening, it starts the 10-year survival "clock" earlier. In other words, just by detecting the cancer 10 years earlier, the survival of those patients is improved 10 years, even if they ultimately didn't live longer than they would have without the early detection.

Research has also shown when CT scans are used to screen people with a smoking history, a proportion of the scans—at least 25 percent or more—reveal abnormalities, the overwhelming majority of which are not lung cancer. Detection of such abnormalities can lead to more invasive and sometimes unnecessary procedures, including biopsy or major surgery, which put patients at risk of serious complications.

A massive research study, known as the National Lung Screening Trial, is comparing

chest X-rays to spiral CT scans in more than 50,000 people with a substantial history of smoking at more than 30 study sites across the country. The goal of the study, launched in 2002 and sponsored by the National Cancer Institute, is to see whether either method can reduce lung cancer deaths by detecting the disease early. Participants were randomly assigned to receive one type of scan annually for three years, with scientists monitoring their health regularly for several more years.

Spiral CT scans can find tumors less than 1 centimeter across, while chest X-rays can detect tumors 1 to 2 centimeters or greater across. Scientists hope to learn whether detecting small abnormalities and treating them will reduce the odds of a patient dying of lung cancer.

Although it seems intuitive that finding cancers while they are still small would reduce deaths from the disease, it is possible that even small cancers might have already spread. Conversely, it is also possible that CT scans may be detecting very slow-growing cancers, which may never harm the person. If either or both of these scenarios occur, screening may not reduce deaths.

Investigators for the National Lung Screening Trial also hope to answer other questions, including at what stage lung cancers are diagnosed when screening is used and whether a screening program influences patients' smoking behavior and attitudes. Researchers are currently analyzing data, and results of the study are expected in 2011.

New Avenues in Cancer Detection

Even if CT screening is proven to save lives from lung cancer, there are drawbacks to the method. It exposes people to radiation, which can cause additional cancers to occur, and is quite costly. Scientists are hard at work to develop other tests that can predict a person's chance of developing lung cancer and/or determine when lung cancer is present—even in its early stages—more accurately and with fewer risks.

One such effort, described at a lung cancer meeting in early 2010, involved the measurement of substances in the blood, called biomarkers, that could signal the presence of lung cancer in the body. Scientists found that the level of these biomarkers present in blood varied according to whether a person did or did not have lung cancer, offering hope that such testing, if refined and validated, could eventually help in the early diagnosis of lung cancer.

Different research teams are exploring the usefulness of a variety of biomarkers—which can be present in blood, urine, breath, and sputum. Biomarkers ultimately may even prove capable of signaling biological changes that precede lung cancer, identifying patients who are more likely to develop the disease, as well as those who already have it.

However, experts say biomarker tests are years away from being available to lung cancer patients at most clinics. That's because lung cancers vary considerably in their composition from patient to patient, making it unlikely that any one biomarker can signal the presence of lung cancer and, more than likely, that different biomarkers (or sets of biomarkers) will need to be identified to accurately detect all the various kinds of lung tumors.

Treatment Options: Now & for the Future

FOR CENTURIES, cancer has been treated with surgery. Radiation was discovered over a century ago as a cancer-fighting tool, but the amount (dose) needs to be delivered very carefully so it doesn't damage normal tissue surrounding a tumor. Chemotherapy agents have been controlling cancer for about 70 years, but they have to be used in a very specific manner because they damage all cells that are rapidly dividing.

These methods, along with newer targeted therapies described below, are currently used to treat lung cancer.

■ Surgical Approaches and Radiation

Surgical removal of a lung tumor, which is possible in its early, contained stages and if a patient is healthy enough to tolerate the procedure, provides the best chance of achieving a cure.

Lobectomy, or removal of a lobe of the affected lung, is common, although scientists are examining whether less extensive surgeries are effective for the smallest of cancers with no lymph node involvement. Video-assisted lobectomy, a less-invasive procedure with a similar survival rate, can make surgery an option even for some patients who otherwise could not tolerate open-chest surgery. For smaller tumors, partial resection of the lobe (called a "wedge resection") may be useful when a patient cannot tolerate a full lobectomy.

Radiation in various forms has been shown to be an effective treatment for lung cancer—for instance, inoperable tumors that have not spread beyond the lung. A newer form of radiation, stereotactic whole body radiation therapy (SBRT), is achieving results similar to surgery for patients unable to undergo surgery. SBRT uses radiation from multiple angles, allowing higher doses to be focused on the tumor, avoiding normal tissues.

For those unable to have surgery, either due to tumor location or for medical reasons, chemotherapy plus radiation can lead to better survival rates than radiation therapy alone. Studies have shown that radiation administered during the same period as chemotherapy is more effective than giving those therapies in sequence.

■ Chemotherapy: A Key Tool

In adults, most of the body's cells don't divide often. But cancer cells divide frequently—a situation that chemotherapy exploits by damaging genetic instructions, or DNA of cancer cells, or by interrupting other processes involved in cell division. The damaged cells consequently die.

Because so many lung cancers—currently, almost 70 percent—are not discovered until they are locally advanced or have spread further, chemotherapy is an important therapeutic option because cancers that are more advanced often cannot be adequately treated by surgery or radiation. Chemotherapy, on the other hand, is a systemic treatment, which means it can impact cancer cells regardless of where they have spread in the body.

Various chemotherapy drugs are used in the treatment of lung cancer. Different drugs are chosen for SCLC and NSCLC, and more research is refining which drugs should be used for which subtypes of NSCLC.

Studies have shown that drugs containing platinum are effective for treating both NSCLC and SCLC. Platinum-containing drugs

commonly used to treat lung cancer include cisplatin and carboplatin. Typically, a second (non-platinum-containing) chemotherapy drug is also used to increase the cancer-killing opportunity. Depending on the type of lung cancer and the other health concerns of the patient, the following drugs might be used:

- Alimta (pemetrexed)
- Gemzar (gemcitabine)
- Navelbine (vinorelbine)
- Taxol (paclitaxel)
- Taxotere (docetaxel)
- Vespid (etoposide)

For advanced NSCLC, the goal of chemotherapy is not curative, but to improve symptoms, delay progression, and add to survival time. Studies for advanced NSCLC have found that two non-platinums probably work as well as one platinum and one non-platinum drug. In general, these treatments are different in terms of side effects, cost, and how frequently they must be given, and they can be tailored according to an individual patient's other medical problems. They do not, however, appear to vary greatly in how well they work at treating the tumor.

Continuing a drug or using a different drug after the initial course of chemotherapy, called maintenance therapy, can continue to treat the cancer and help keep it from spreading. However, not every person will be able to manage the side effects of these drugs so soon after their initial chemotherapy. The chemotherapy drug Alimta and targeted drug Tarceva (erlotinib) are currently approved for maintenance therapy for advanced lung cancer patients.

Chemotherapy may also be recommended as an additional, or adjuvant, treatment following surgery for certain early-stage cancers.

Many chemotherapy drugs are delivered intravenously, allowing the powerful medications to enter the bloodstream and be quickly dispersed throughout the body. However, because veins in the arm cannot always be accessed, patients often have a semi-permanent "vascular access device," or catheter, surgically implanted in a large vein elsewhere on the body. Patients with a catheter need to be monitored for infection and blood clots, and the device should be regularly flushed with a syringe.

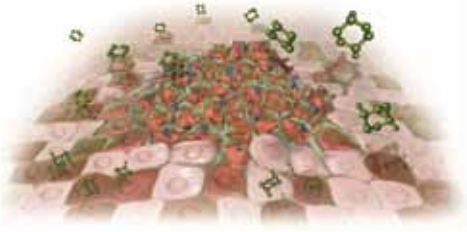
Chemotherapy's side effects—its effects on healthy tissue—are most frequent at sites where cells are more rapidly growing and dividing, including the skin, bone marrow (which produces blood cells), hair follicles, and the lining of the digestive system. Common side effects of chemotherapy, which vary from patient to patient and usually last only as long as a patient is receiving treatment, include low blood cell counts, nausea, diarrhea, fatigue, hair loss, and mouth sores.

Right on Target

While chemotherapy can be very effective at treating certain cancers, it can damage the workings of normal and cancer cells alike, causing unwanted side effects. Furthermore, some cancers escape the rigors of chemotherapy, so scientists have been working to develop new methods to take advantage of the unique characteristics of cancer cells and attack them specifically.

These new agents, called "targeted therapies," still work systemically through the body, but tend to produce fewer side effects than chemotherapy since they are better targeted to the cancer cells. In some cancers, targeted

What's the Difference Between Chemotherapy and Other Targeted Drugs?



Chemotherapy targets and kills not only rapidly dividing cancer cells but also dividing healthy cells, such as hair follicles.

Targeted agents, such as monoclonal antibodies, specifically target and kill cancer cells while sparing most healthy cells.

ILLUSTRATION BY ERIN MOORE

therapies have also proven to work better than chemotherapies used in the past. Scientists' increasingly sophisticated understanding of cancer cells' intricate workings has yielded many new avenues to pursue for treatments.

EGFR › The epidermal growth factor receptor (EGFR) is a key gatekeeper that can allow cancer cells to grow and thrive. This understanding has led to the development of drugs targeted to inhibit EGFR. In the U.S., one such drug is currently approved to treat lung cancer: Tarceva.

Early studies of Tarceva indicated it was more likely to work in women, people without a history of smoking, people with adenocarcinoma, and those of Asian descent. Further research indicated the commonality between these clinical observations was the likelihood of having a specific mutation in EGFR driving the cancer's growth. Most useful, however, was the finding that the same mutation that drives such cancers to grow also makes them particularly susceptible to Tarceva (and to the drug Iressa [gefitinib], which is not currently available in the U.S.).

While these genetic mutations are more common in the tumors of people who have never smoked, they also occur in the tumors of some patients with smoking histories. Though far less likely, some tumors can respond to Tarceva, even if they don't contain one of these driver mutations. Thus, Tarceva is approved to treat patients with locally advanced or metastatic NSCLC after at least one prior chemotherapy regimen has failed, and as maintenance therapy after the conclusion of initial chemotherapy. Research has shown that in patients with these EGFR tumor mutations, EGFR inhibitors such as Iressa (and probably Tarceva) are more effective than chemotherapy and better tolerated as first-line treatment.

While EGFR is a useful target for cancer

treatment, it is also active in the normal functioning of our skin and gut. Thus, side effects of Tarceva can include rash, diarrhea, appetite loss, and fatigue.

Tarceva, like many targeted therapies, is available in pill form, which is more convenient than receiving intravenous treatment in a clinic. It is important for patients to understand the instructions from their doctors and nurses on taking such oral medications, including how often, when, and with or without food. Patients should follow these instructions carefully to ensure the drug is able to provide its full cancer-fighting activity.

Other drugs targeting EGFR, including Iressa and Erbitux (cetuximab), an antibody given in intravenous form, have also shown promise in treating lung cancer, although neither is currently approved for lung cancer therapy in the U.S.

So far, most cancers that respond to an EGFR inhibitor eventually develop resistance to the drug—that is, the cancer "outsmarts" the drug. New research is under way with drugs that may overcome the resistance that develops to EGFR-targeted drugs or, perhaps, even prevent the resistance from developing.

VEGF › Also vulnerable to a targeted attack is another kind of molecular gatekeeper—one crucial to the formation of blood vessels (a process known as angiogenesis) that serve as supply lines to nourish a tumor. Vascular endothelial growth factor (VEGF) is vital to the development of these blood vessels.

This understanding led to the development of the VEGF inhibitor Avastin (bevacizumab). Avastin, which is administered intravenously in combination with a carboplatin-Taxol chemotherapy regimen, has been found to lengthen survival times for patients with advanced non-squamous NSCLC, and is approved for such use.

Avastin can infrequently cause serious side effects, including bleeding, heart problems, blood clots, and slow wound healing. More common side effects include high blood pressure, fatigue, low white cell counts, headaches, mouth sores, loss of appetite, and diarrhea.

With the understanding of the multiple factors involved in tumor blood vessel development and maintenance, more agents are being developed and tested to cut off a tumor's blood supply.

MORE GENETIC INSIGHTS

While EGFR and VEGF have proven valuable as targets for cancer therapy, not all tumors will be affected by their inhibition. Thus, scientists continue to search for—and find—new options for cancer-targeting therapies every day.

Recently, researchers found that a small percentage of lung cancer patients—about 4 percent—have an inappropriate combination of the EML4 and ALK genes driving their lung tumors. An ALK inhibitor has produced extremely promising results in early trials for patients with this unusual gene combination. Such patients are more likely never to have smoked and to have adenocarcinoma. Interestingly, the EML4-ALK combination almost never appears along with the EGFR mutation targeted by Tarceva.

Another molecular finding, involving variations of the levels of a gene known as ERCC1, may help explain why some patients don't respond to platinum-based chemo-

therapy agents (for example, cisplatin or carboplatin). Normally, platinum-based agents damage the genetic instructions of cells, or DNA. When cells are rapidly dividing, like cancer cells, they are unable to repair such damage, so the cells die. When ERCC1 levels are high, however, tumor cells seem to be able to repair their DNA after chemotherapy does its job of damaging it. Thus, patients with high levels of ERCC1 may be less likely to respond to treatment with cisplatin or carboplatin.

Similar to ERCC1, a gene called RRM1 is also involved in repairing damaged DNA. When RRM1 levels are high, patients may be less likely to respond to a non-platinum drug called Gemzar (gemcitabine). These observations are being tested in a clinical trial for previously untreated patients with advanced lung cancer. These tests are still very difficult to perform in a reproducible format, and hence are not routinely used outside of clinical trials.

KRAS is another key gene whose mutation plays a role in the development of lung cancers. Research has suggested that early-stage patients whose tumors have KRAS mutations don't respond as well to chemotherapy administered after surgery and face shorter survival times. In a recent clinical trial, the cancer drug Nexavar (sorafenib), which targets KRAS and VEGF signaling, was shown to stop lung cancer from progressing in 61 percent of advanced NSCLC patients whose tumors had KRAS mutations. If such results hold up in larger clinical trials, this would be a great advance for lung cancer patients whose tumors contain KRAS mutations—estimated at about 20 percent of cases.

More efforts are being directed toward understanding lung cancer through genomic studies, which look at the entirety of genetic material in the tumor to understand which genes appear important to the cancer or its treatment. Such "personalized medicine" studies are helping to develop new ideas for novel combinations of treatments depending on the genetic characteristics of a person's tumor.

CLINICAL TRIALS

Lung cancer research today reflects a growing effort to identify subsets of lung cancer patients based on their tumor biology in hopes of finding new ways to sabotage their cancers. In many cases, the latest targeted treatment possibilities—including medicines not currently approved for lung cancer—are available through clinical trials at many academic centers and oncology practices.

For those who might want to enter a trial, it's important to consider the following: how far along in testing the new treatment is; whether you meet the patient criteria included on the clinical trial listing; the expected benefit of the tested treatment compared with the benefits of more widely available treatments; the possibility that you might be randomly assigned to the group that doesn't receive the experimental therapy; and whether you are able to travel as needed to the site of the trial.

Patients wishing to explore the latest treatment possibilities can find clinical trials listed at www.curetoday.com/trialcheck and www.emergingmed.com/networks/NationalLungCancerPartnership.

Ask Your Doctor

HERE ARE SOME QUESTIONS to ask the doctor if you or someone you know is diagnosed with lung cancer:

- Exactly what type of lung cancer do I have? What is the stage?
- How is this cancer and its symptoms likely to affect me? Will I be able to continue with my normal daily activities?
- Will my breathing be impaired, or further impaired, by the cancer or its treatment? If so, how will that be managed?
- What diagnostic tests will I need to undergo so we can better understand the cancer? Are there possible side effects of those tests?
- Should I undergo any testing to see what medicines might be particularly beneficial against my cancer?
- How is this type and stage of lung cancer typically treated?
- What is the goal of the treatment(s)?
- What should I do to prepare for treatment and maintain the best health during therapy?
- What side effects might I expect from treatment? How are those side effects managed? Which ones might need urgent attention?
- How will I know whether initial treatment was effective? What follow-up tests or treatments are recommended after initial treatment?
- If the cancer is caught early enough to be surgically removed, what are the chances that I will re-develop lung cancer in the future?
- Are there any treatments available to reduce the risk of recurrence after surgery?
- How and where can I get a second opinion to review your conclusions and treatment plan?
- Can we verify that my health insurance will cover all the recommended treatments, and that other care providers, such as hospitals, clinics, surgeons, radiologists, and anesthesiologists, are in my health care network?
- If my health insurance coverage is insufficient, can I qualify for any patient assistance programs?
- Will I receive help from a social worker, psychologist, financial counselor, or others who can help me deal with this cancer and its treatment?
- Is a smoking cessation program part of my treatment plan? If not, where can I get help in quitting smoking?
- What should I do if I live with someone who smokes?
- Am I a candidate for any clinical trials? Where can I find out more about clinical trials?
- How can I connect with other patients, locally or nationally, who have my type of cancer?
- Is anyone else in my family at risk of cancer now that I have been diagnosed?

Resources

LUNG CANCER AND LUNG HEALTH GROUPS

The National Lung Cancer Partnership, at www.nationallungcancerpartnership.org and 608-233-7905, provides resources for patients and their families, raises and distributes funds for lung cancer research, and generates awareness of the disease.

The American Lung Association provides an informational page on lung cancer, which includes assistance with treatment decisions and help finding social support, at www.lungusa.org/lung-disease/lung-cancer. The association also has a trend report on lung cancer at www.lungusa.org/lung-disease/lung-cancer/resources.

The Lung Cancer Alliance offers a wealth of information and programs tailored to the needs of lung cancer patients and their families. Visit www.lungcanceralliance.org or call 800-298-2436.

The Caring Ambassadors Lung Cancer Program, at www.lungcancercap.org and 503-632-9032, provides help in finding care, coping with the disease, connecting with others, and more.

The LUNGevity Foundation connects patients and their families to information and events nationwide to support innovative lung cancer research. Visit www.lungevity.org or call 312-464-0716. To connect with other lung cancer patients and survivors, click on the "Lung Cancer Support Community" link on the LUNGevity site.

OTHER CANCER INFORMATION SOURCES

The American Association for Cancer Research has collected a host of resources for patients and family members, including fact sheets on lung cancer, a dictionary of cancer terms, links to cancer centers, information about support groups, and more at www.aacr.org/home/public--media/patients--family.aspx.

The American Cancer Society offers a detailed guide to non-small cell lung cancer at www.cancer.org/docroot/CRI/CRI_2_3x.asp?dt=15, and a detailed guide to small cell lung cancer at www.cancer.org/docroot/CRI/CRI_2_3x.asp?dt=16. The society can also provide help and information by phone at 800-227-2345.

Cancer*Care* provides free, professional support services for anyone affected by cancer, including specifically for lung cancer patients at www.lungcancer.org and 800-813-4673. Counseling, education, financial assistance, and practical help are provided by trained oncology social workers.

A variety of information about lung cancer can be found on the **National Cancer Institute's** website, including at www.cancer.gov/cancertopics/types/lung and www.cancer.gov/cancertopics/wyntk/lung. The NCI can also answer questions about cancer, and send booklets and fact sheets, through its Cancer Information Service at 800-4-CANCER (800-422-6237).

SMOKING CESSATION

The federal government's **Smokefree** website, www.smokefree.gov, offers a guide to quitting smoking and other resources.

The **NCI** has a telephone Smoking Quitline at 877-44U-QUIT (877-448-7848). The agency also offers online fact sheets on quitting smoking at www.cancer.gov/cancertopics/factsheet/tobacco/cessation and on secondhand smoke at www.cancer.gov/cancertopics/factsheet/Tobacco/ETS.

TREATMENT TOPICS

The **American Society for Clinical Oncology's** patient website, Cancer.Net, offers treatment plan and summary documents to help patients store information about their cancer and its care at www.cancer.net/patient/Survivorship/ASCO+Cancer+Treatment+Summaries. Many other resources, including printed guides to cancers, information on managing the cost of care, and more can be found at www.cancer.net/patient/Publications+and+Resources.

Information about radiation therapy for lung cancer, provided by the **American Society for Radiation Oncology,** can be found at www.rtanswers.org/treatmentinformation/cancertypes/lung/index.aspx.

For more on targeted cancer therapies, see the **National Cancer Institute** fact sheet at www.cancer.gov/cancertopics/factsheet/Therapy/targeted.

The **National Comprehensive Cancer Network** offers treatment summaries for people with cancer, with one focusing on small cell lung cancer and two on non-small cell lung cancer, at www.nccn.com/Treatment-Summaries/CancerTypes.aspx?id=48.

Visit www.curetoday.com/lungcancer for a variety of articles related to lung cancer.

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