

NOVEMBER 2013 • PHYSICIANS

Lung Cancer

November Is Lung Cancer Awareness Month

So it's a good time to review what we know. Lung cancer is the leading cause of cancer deaths. It causes about 27% of them.¹ In 2013, about 159,000 people will die from lung cancer.¹ On average they'll be about 72 years old.² And about 7 of 8 of them will have non-small cell lung cancer (NSCLC) rather than small cell lung cancer.²

Only about 17% of people with lung cancer survive 5 years after diagnosis.¹ As *with other cancers, early detection is key*. The 5-year survival rates are¹:

- 52% when detected at the local stage
- 25% when detected at the regional stage
- 4% when detected at the distant stage

Risk Factors

Keeping the risk factors in mind will help you detect lung cancer earlier. The number one risk factor is smoking. Smoking tobacco may cause as many as 90% of all lung cancers.³ The risk increases the longer a person smokes and the more a person smokes.^{1,4,5}

The good news is that if a person stops smoking, the risk will go down. But it will never be as low as it would have been if the person never smoked.⁵

Some other risk factors are:

- Secondhand smoke (tobacco smoke breathed in by a nonsmoker)
- Exposure to asbestos or other toxins in the environment
- Exposure to radiation, like the kind used to treat other cancers
- Family history of lung cancer
- Having had tuberculosis or certain other lung diseases

Screening and Early Detection

These are the people who should get screened^{6,7}:

- Those aged 55 to 74 years who have a 30 pack-year* smoking history and are smoking now or have smoked in the past 15 years
- Those aged 50 years or older who have a 20 pack-year* smoking history and have one other risk factor (excluding secondhand smoke)

*Pack-year = (number of packs of cigarettes smoked/day)(number of years smoked)

A yearly low-dose CT scan is recommended for these people.^{7,8} Screening other people is not yet recommended.^{7,8}



Information for You and Your Patients

Doctors and patients can team up to help prevent lung cancer, detect it early, and effectively treat it.

What your patients should know:

- Risk factors for lung cancer
- Early warning signs of lung cancer
- Ways to quit smoking

What you should know to help your patients:

- Which of your patients are at risk for lung cancer
- How to help your patients stop smoking
- How and when to screen high-risk patients
- Which tests can be used for diagnosis
- Treatment options
- Molecular tests can help guide treatment decisions

Diagnosis and Treatment

Lung cancer diagnosis can involve different tests. A CT scan, chest x-ray, and/or biopsy may be needed.

Treatment depends on the stage of disease and other factors. Options include surgery, radiation, chemotherapy, and targeted drugs. Targeted drugs attack molecular pathways in the tumor. But they are not for all patients. Laboratory tests are used to find out if targeted drugs might work for a certain patient. The tests look for mutations in certain genes. Their presence or absence predicts whether the drug will work for that patient.

Table 1: Mutations That Predict Response According to Targeted Drug⁶

Targeted Drug	Response Likely	Response Unlikely
Afatinib	<i>EGFR</i> (L858R, L861 G719X, G719 exon 19 del) <i>HER2</i> mutations	<i>EGFR</i> (T790M, exon 20 ins) <i>KRAS</i> mutations <i>ALK</i> mutations <i>MET</i> mutations
Cabozantinib	<i>RET</i> mutations	
Cetuximab	<i>EGFR</i> mutations	
Crizotinib	<i>ALK</i> , <i>MET</i> , <i>ROS1</i> mutations	
Dabrafenib	<i>BRAF</i> mutations	
Erlotinib	<i>EGFR</i> (L858R, L861 G719X, G719 exon 19 del)	<i>EGFR</i> (T790M, exon 20 ins) <i>KRAS</i> mutations <i>ALK</i> mutations <i>MET</i> mutations
Gefitinib	<i>EGFR</i> (L858R, L861 G719X, G719 exon 19 del)	<i>EGFR</i> (T790M, exon 20 ins) <i>KRAS</i> mutations <i>ALK</i> mutations <i>MET</i> mutations
Trastuzumab	<i>HER2</i> mutations	
Vemurafenib	<i>BRAF</i> mutations	

References

1. American Cancer Society. Cancer Facts & Figures 2013. <http://www.cancer.org/research/cancerfactsfigures/cancerfactsfigures-2013>. Accessed October 10, 2013.
2. National Cancer Institute. What You Need To Know About Lung Cancer. <http://www.cancer.gov/cancertopics/wyntk/lung/page1>. Accessed October 10, 2013.
3. Alberg AJ, Samet JM. Epidemiology of lung cancer. *Chest*. 2003;123(1 suppl):21S-49S.
4. Centers for Disease Control and Prevention. Lung Cancer Risk Factors. http://www.cdc.gov/cancer/lung/basic_info/risk_factors.htm. Accessed October 11, 2013.
5. National Cancer Institute. Cigarette Smoking: Health Risks and How to Quit (PDQ). <http://www.cancer.gov/cancertopics/pdq/prevention/control-of-tobacco-use/Patient>. Accessed October 10, 2013.
6. NCCN Clinical Practice Guidelines in Oncology: Non-Small Cell Lung Cancer. v1.2014.
7. NCCN Guidelines on Lung Cancer Screening V1.2014. http://www.nccn.org/professionals/physician_gls/pdf/lung_screening.pdf.
8. Detterbeck FC, Lewis SZ, Diekemper R, Addrizzo-Harris D, Alberts WM. Executive summary: diagnosis and management of lung cancer, 3rd ed: American College of Chest Physicians evidence-based clinical practice guidelines. *Chest*. 2013;143(5 suppl): 7S–37S.