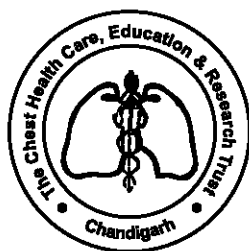


# LUNG CANCER

AN INFORMATION BOOKLET  
FOR PATIENTS AND THEIR RELATIVES



Produced & Published by  
The Chest Health Care, Education and Research Trust,  
Chandigarh

Developed and designed by

**Dr. Navneet Singh**

M.D., D.M.

*Assistant Professor,*

Dept of Pulmonary Medicine,  
PGIMER, Chandigarh, India



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## **PREFACE**

After a diagnosis of lung cancer is disclosed, the patient and his/her family members may experience many strong emotions. This is a part of the normal response of the human brain in dealing with this difficult situation. However, one needs to know that many advances have been made in the field of medicine in the recent past and that a lot of things are being done for lung cancer patients these days. New treatment strategies are being developed and tested. A key part of living with lung cancer is to remain positive in the outlook towards life. A lung cancer patient and his/her relatives should stay hopeful and remember that this disease can often be well managed. It is important for them to try and be associated with doctors who share their hope for survival and are willing to fight right along with them. This booklet is primarily intended to provide an overview of this disease, its nature and the different types of treatment methods available.



# **INTRODUCTION**

## **What is cancer?**

The body is made up of millions of cells. These cells keep multiplying and dividing in order to replace the old and the dead cells during the process of repair and healing which follows any injury or insult to the affected body part.

Normally, this process of multiplication is under strict control, but sometimes this control process breaks down. A cancerous cell may thus go on dividing in an uncontrolled manner, producing a group of abnormal cancerous cells which together form a tumor. In contrast to the normal cells, the cancerous cells do not function normally and do not die when they grow old.

## **What problems occur with lung cancer?**

When a tumor is present in the lungs, it can lead to symptoms such as cough, difficulty in breathing, blood in sputum, chest pain, weight loss and loss of appetite. The cancer cells may spread by direct extension to the nearby structures and compress them. This can lead to symptoms like swelling over the face, hoarseness of voice, difficulty in swallowing and pain associated with weakness in the arms. They can also invade the nearby lymph nodes (small collections of white blood cells scattered throughout the body) and spread through the blood stream and metastasize (travel) to different organs of the body. Common sites of lung cancer metastasis include the brain, the bones and the liver. In such cases, the symptoms depend upon the site and the extent of metastasis.

## **What causes lung cancer?**

The underlying causes of many forms of cancer are unclear, but it is known that the risk of developing lung cancer

is far greater for smokers than for people who never smoke. Different forms of tobacco smoking like cigarette, bidi and hookah are all associated with an increased risk of developing lung cancer and therefore, no one form is safer than the other. Even people who themselves don't smoke but are in close contact with smokers either at home or in the workplace are at increased risk of developing lung cancer. Hence, all efforts should be made by family members of smokers to help them quit this deadly habit. It is an old saying that prevention is better than cure. This is probably best exemplified in the case of lung cancer where cessation of tobacco smoking is far more effective and cost-effective than the treatment of the disease once it has developed. Even if cancer treatment is being done, cessation of tobacco smoking should also be done side by side.



# DIAGNOSIS AND STAGING

What information is necessary before treatment can be started?

Whenever there is a suspicion of lung cancer, a number of simple tests (investigations) will usually be carried out for two reasons.

1. First and foremost - to be sure about the diagnosis since other lung diseases can sometimes have symptoms similar to those of lung cancer.
2. For planning the right form of treatment for the patient. Once the diagnosis of lung cancer has been confirmed, the doctor will need to find out the type of cancer and the stage (extent) of the disease.

The two main types of lung cancer are :-

1. Non-Small Cell Lung Cancer (NSCLC)
2. Small Cell Lung Cancer (SCLC)

The majority of lung cancers (about eight out of 10) are NSCLC. The stage of lung cancer is based on the tumor's location and size and whether it has spread to lymph nodes in the area or to other organs of the body. Both the type and the stage of lung cancer will help determine which treatment plan is best suited for the patient.

**What are the tests (investigations) that the patient may be asked to undergo?**

The investigations which are commonly done include examination of the sputum, CT scan of the chest and upper abdomen, a bone scan, a PET scan, an ultrasound scan of the abdomen as well as the routine blood tests. An important and

commonly performed test is bronchoscopy. During bronchoscopy, a narrow flexible telescope is passed through the nose and down the windpipe into the lungs in an attempt to see the tumor and to take a sample of it. When this sample is examined in the laboratory, the exact type of lung cancer present can be determined. In certain cases, the tumor may not be seen on bronchoscopy and it is easier to numb the chest with a local anesthetic and pass a fine needle into the tumor to take samples from it for testing. This test is called Fine Needle Aspiration Cytology (FNAC).

In some patients, after chest X ray or CT scan, fluid outside the lungs (pleural effusion) may be detected. This fluid usually needs to be tested before treatment can be planned. In some cases, the diagnosis may be made only on the basis of tests carried out on this fluid. Usually, the fluid is removed with a syringe connected to a fine needle (in much the same way as described above for FNAC). However, if this test is not helpful in confirming the diagnosis, a biopsy of the tissue from the area where the fluid has collected, may need to be done.

All the above mentioned tests are simple, safe and painless and help in finding out the type and extent of the tumor.

# **TREATMENT**

## **What is treated as lung cancer and what is not?**

One should know here that only cancers that begin in the lungs are called “lung cancer” and treated accordingly. Sometimes cancer from other parts of the body may spread to the lungs, but when that happens, it is not called lung cancer. Similarly, if lung cancer spreads to the liver, it is treated as lung cancer, not as liver cancer.

**Not one size fits all :** In the context of treatment, it is important to know that the term 'lung cancer' is used for a number of different types of cancers of the lungs. These cancers tend to behave in slightly different ways from each other. Hence the treatment options that are discussed with patients are based upon the particular type of cancer that has been diagnosed. In general, lung cancer treatment options depend upon the type and stage of the disease. But the final decision that is made will take into account not just these two things but also the patient's general level of fitness and last (but not the least) his/her own views on the matter. Thus, all attempts will be made to develop a treatment plan that has been individualized for the patient as far as possible.

## **Who all will be treating a lung cancer patient?**

A physician who has specialized in the treatment of lung cancer patients usually is the main doctor for this disease. He/she will help develop a treatment plan for the patient, prescribe the drugs (such as chemotherapy, agents for targeted therapy and supportive care treatment) that are needed to manage the disease. Lung cancer patients may also be asked to consult other specialists for treatment of their disease. A radiotherapist or radiation oncologist is a doctor who specializes in using x-rays for killing cancer cells. A thoracic

surgeon has been specially trained to operate and remove lung tumors.

## **What are the different treatment methods available for lung cancer?**

The most common treatments for lung cancer are chemotherapy, radiation therapy, surgery and targeted therapy (drugs that act preferentially on cancer cells).

**Chemotherapy :** Drug used in chemotherapy kill cancer cells. In contrast to radiation therapy and surgery, which are used to treat the disease locally, chemotherapy acts systemically (has its effect throughout the whole body). There are a number of different chemotherapeutic drugs that are used for the treatment of lung cancer. They are usually administered intravenously. Therefore these drugs travel in the blood stream and are expected to kill cancer cells anywhere they may be in the body. Usually one or two drugs are administered for four to six 'cycles'. Each cycle is a treatment followed by about a three week rest period. Therefore, if a patient is prescribed four cycles, it usually means he/she will receive chemotherapeutic drugs four times, each given about three weeks apart and hence a total of 12 weeks of therapy.

In some cases, chemotherapeutic drugs may need to be given in more than one sitting/session within a cycle.

Many people are concerned about the side effects of chemotherapy. It is important to know that different types of cancers are treated with different types of chemotherapeutic drugs and that chemotherapy has changed a lot over the years. Patients should also keep in mind that their experience may be very different from what has been told to them regarding a friend/relative who also underwent chemotherapy. This is because the other person may not have had lung cancer or may have received different chemotherapeutic drugs. Each

chemotherapeutic drug has its own individual side effect profile. Typical side effects of chemotherapy include (but are not limited to):

**Hair loss** – Not all types of chemotherapy cause hair loss. Moreover, this is temporary. The hair grows back after treatment has finished.

**Nausea/vomiting** – Its frequency and severity has greatly been reduced due to the newer anti-nausea medicines that are available.

**Diarrhoea/constipation** – It is usually mild and easily controlled with medications prescribed by the treating doctor. Taking Isabgol husk regularly while on chemotherapy may help patients in maintaining stool habits as close to normal as possible.

**Numbness or tingling in the hands and feet** – This is infrequent and even if it occurs, is usually mild and does not interfere with activities of day to day life.

**Lowering of the blood cell counts** – After chemotherapy has been given, the number of blood cells (blood cell counts) in the body can go down. Blood counts are likely to go down about one to two weeks after the day of treatment and should return to normal about a week later. This lowering can be of different types.

- **Red blood cells (RBCs):** This is the most common type. Low RBC counts (anemia) can cause patients to feel more tired than usual or short of breath.
- **White blood cells (WBCs):** Having a low WBC count means the patient may not be able to fight off infections as easily as a healthy individual. Therefore, patients should try and protect

themselves during the treatment period by avoiding having close contact with people who have active infections as well as taking hygienic home cooked food. Washing hands frequently may also be helpful. If fever develops or any other symptom that suggests an infection occurs, patients should report them promptly to the doctor so that it can be diagnosed and treated appropriately.

- **Platelets:** Having a low platelet count puts patients at risk for bleeding, although complications from this are rare.

In general, in our clinic, low WBC counts or low platelets is not a problem which is commonly seen.

**Radiotherapy :** Radiotherapy (also sometimes referred to as x-ray therapy or radiation therapy) is the use of high doses of x-rays to damage cancer cells and stop them from growing or multiplying. Because radiation also affects normal cells, this therapy is focused on (directed onto) the tumor. It involves sitting or lying in front of a large machine for a few minutes on a number of occasions. High doses (amounts) of radiation are given to the chest, with the hope that it will kill all of the tumor cells in that area. This might involve daily doses of radiation for up to six weeks. However radiation is a local form of therapy and not a systemic (whole-body) treatment, such as chemotherapy.

When the cancer has spread from the lungs to other parts of the body, radiation may be given in smaller doses to relieve symptoms in affected areas, such as the brain or bones. Radiation, given for periods ranging from one day to four weeks, can kill enough cancer cells to bring relief from symptoms such as pain, breathing difficulty and headache.

Side effects from radiation therapy depend upon where the radiation is focused and how much radiation is given. Generally, the treatment is completely painless. Some people may experience a general feeling of tiredness and soreness of the skin. A few patients may develop cough, fever or shortness of breath after the radiation therapy ends. This is usually mild and self-limiting.

**Surgery :** Surgery, or having an operation, is the physical removal of the cancer tumor, and any lymph nodes that may contain cancerous cells. Patients are advised to have a part or all of one lung removed by an operation especially if they have early stage (resectable) NSCLC. Unfortunately most patients in India with lung cancer present late and are therefore not in a position of having the benefit of undergoing surgical resection. Surgical removal of a lung or its part may lead to the patient losing some of his/her breathing capacity, but an operation is suggested only if the treating doctors and surgeons are satisfied that the remaining breathing capacity is adequate for the patient to carry out activities of everyday life without causing too much breathlessness. Patients who are elderly, have heart or significant other diseases in addition to lung cancer or whose general physical condition is otherwise not good, may be considered unfit (inoperable) and may not be able to have surgery.

**Targeted therapy :** During the past few years, a better understanding has been developed as to what makes cancerous cells multiply out of control. In line with this, new treatment methods have been developed in the form of drugs that 'target' only cancerous cells. Different types of targeted therapy are available now. One or more types may be advised to a particular patient depending upon the type of lung cancer and other factors like age and general health condition. In some cases, these may be given before after or alongwith chemotherapy and in others as the only form of treatment per se.

## **How long does treatment for lung cancer last?**

The length of treatment depends upon the type and stage of lung cancer, and how well a patient responds to the treatment given. The treatment plan is explained to patients/their relatives before it is started. If there are any doubts or questions in the minds of patients or their relatives, they should feel free to get them clarified during their meetings with the doctor. Patients will be checked at regular intervals, or earlier, if they have any unexpected problems. If the cancer does not respond to the first treatment given to a patient, other treatment options may be discussed.

## **Supportive Care**

The doctor may recommend drugs that do not treat cancer, but can help the patient maintain good overall health during treatment. Any or all of the following may be advised:

- A drug to strengthen bones, if the cancer has spread to the bones
- Drugs to prevent nausea and vomiting while on chemotherapy treatment
- Drugs to prevent or treat constipation/diarrhea
- A drug or blood transfusions to treat anemia (low red blood cell count)
- A drug to treat low counts of white blood cells (the cells that fight off disease)
- Drugs to treat pain

More importantly, it is essential for patients who smoke, to quit smoking completely. Quitting smoking will help in breathing easier, put less stress on the heart and lungs,



and help treatments work better. Talking with the doctor is helpful in order to develop a plan for quitting smoking. This may include counseling, nicotine replacement therapy or other treatments designed to make quitting easier. It is never too late to quit.

### **What about alternative therapies?**

When lung cancer has been diagnosed, people may suggest “alternative therapies,” such as herbal remedies, dietary supplements, massage therapy, acupuncture or chiropractic treatments. While some of these therapies may be helpful in managing pain or side effects of treatment, they are never a substitute or replacement for proven medical treatments prescribed by the cancer specialists. Also, some of these alternatives may be harmful. They may cause problems with the treatment a patient is receiving or prevent it from having its effect. Patients should always discuss with the cancer specialists before starting any kind of alternative therapy.

# **PROGNOSIS**

## **After being diagnosed with lung cancer, what is a patient's future?**

This is often the first question asked by patients after being diagnosed with lung cancer. It is important for patients and their close relatives/family members to know that the expected life span after the diagnosis has been made, depends to a certain extent upon the type and stage of lung cancer. However, it is equally important to realize that estimates do not predict what will happen to any particular individual. These estimates are only numbers which tell the average survival for all people with that type or extent of lung cancer. On the other hand, each patient is an individual with his/her unique health status and problems. It is also wrong to assume that two patients with a similar type and stage of lung cancer will behave in exactly the same way. They may in fact differ in their individual responses to treatment or their life span or both.

## **Cure versus control**

The chances of lung cancer being cured depend mostly upon the stage at the time the disease is diagnosed. Early stage cancer is the easiest to treat and has the best chance of being cured. It is therefore advisable, that in case of any doubt about the presence of lung cancer, the necessary investigations are conducted as soon as possible so that the disease can be detected and treated while it is still at an early stage. If the cancer has spread to other places in the body, the goals of treatment are to keep the cancer under control for as long as possible rather than making an attempt to achieve cure.

This is often possible with chemotherapy, radiotherapy and targeted therapy, either alone or in combination with each

other. It is important to understand that even if the doctor tells a patient/his relatives that the disease cannot be cured, it does not mean that it cannot be treated. With the availability of newer treatment methods, some lung cancer patients, even if they present with advanced disease, can live good lives for several months and sometimes even years.

## **Family members and friends**

Besides the patient, family members and close friends also experience varying degrees of emotional trauma, after the diagnosis of lung cancer is made. They have their own fears also. By trying to help and advise the patient, they can also deal with their own worries in a better way. Family members and friends should try and ensure that the patient, as well as they themselves, remain in a positive and encouraging frame of mind.

## **FOLLOW UP**

Once the initial treatment is over, it is important that patients come for regular follow-up as advised by the cancer specialist so that the status of their health and disease can be monitored. This is generally done every two-three months during the first two years after treatment has been completed and every six months thereafter. Patients should feel free to come for a check up even if it is earlier than what has been advised by the doctor if they are experiencing symptoms that are causing worry or if they have other health care concerns. Patients should also ask the doctor what symptoms they need to watch out for. If such symptoms do occur, they should report them promptly. In some cases, no treatment may be advised for a period of time. This is particularly true, if the cancer is felt to be dormant or slowly growing and causing no immediate problems. It does not mean that the patient is not getting proper attention. It also does not mean that the patient is in a stage which is beyond treatment. It simply means that no treatment is required for the present.

### **Are you concerned that your close family member may be having lung cancer?**

If the answer is yes, he/she should come for a check up to the Chest Clinic (3<sup>rd</sup> floor, C block, New OPD Building), PGIMER, Sector 12, Chandigarh on any Monday/Thursday between 8 a.m.-11 a.m. or the Lung Cancer Clinic on any Tuesday at the same place and timings.

**You can also email us at**

**[thoraciconcology.pgimer@gmail.com](mailto:thoraciconcology.pgimer@gmail.com)**

**Tel. : 0172-2756877, 2756821**