

Lung cancer: types, causes and treatments



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Lung cancer is not only one of the most deadly diseases but it is also the most leading cause of death worldwide. It is ranked the second most common cancer in men and women from mass races such as white, black, Asian, Pacific Islander, American Indian/Alaska Native, and Hispanic. It has been founded that fifteen percent of all new cancers are relative to lung cancer (SOURCE). There are two different types of lung cancer in which they are both treated very differently. The two types of lung cancer include small cell lung cancer (SCLC) and non-small cell lung cancer. Since lung cancer is developed in the lungs, it is imperative to learn about the lung and its function.

The lung is a pulmonary system in which it is used essentially for respiration by means of breathing/inhaling, and exhaling. Our body consists of two lungs in which it is located in the chest on both sides of the heart. The main function of the lung is to transport oxygen into the bloodstream and carbon is then released from the bloodstream into the atmosphere. As you breathe, the air is transported starting from the nose, down to your trachea (windpipe's) and into the lungs in which air is spread out into the bronchi tubes. The bronchi tubes plays an important role in lung cancer because the linings of the tubes are mainly where the cancer usually starts and spreads.

What Is Lung Cancer?

Lung cancer occurs when abnormal cells rapidly grow in the lung. Due to lung cancer's uncontrolled reproduction of cells, the formation of tumors are formed; blocking the airways which damages the normal lung. As a consequence, the lungs function is depleted and soon discontinues to work normally.

Lung cancer takes years to develop. Changes usually occur in the lung as individuals are exposed to carcinogenic agents which will be discussed later. Abnormal cells may appear in the tissues lining the airways. These abnormal cells will eventually increase and form a tumor especially when exposure is increased; causing lung cancer.

The majority of lung cancer starts in the lining of the bronchi (passage of airway that conducts air into the lungs). In other words, lung cancer is also called bronchogenic cancer. Lung cancer can also develop below the lining of the bronchi-the border of the lungs.

Small Cell Lung Cancer

10% to 15% of all lung cancers are small cell lung cancer (SCLC), named for the small cells that make up these cancers. Other names for SCLC are oat cell cancer, oat cell carcinoma, and small cell undifferentiated carcinoma

SCLC often starts in the bronchi near the center of the chest, and it tends to spread widely through the body fairly early in the course of the disease (usually before it starts to cause symptoms). The cancer cells can multiply quickly, form large tumors, and spread to lymph nodes and other organs, such as the bones, brain, adrenal glands, and liver. This is important because it means that surgery is rarely an option (and never the only treatment given). Treatment must include drugs to try to kill the widespread disease.

Small cell lung cancer is almost always caused by smoking. It is very rare for someone who has never smoked to have small cell lung cancer.

Non-Small Cell Lung Cancer

Non-small cell lung cancer (NSCLC) is the most common type of lung cancer. This usually has a very slow growth/spread rate. There are three different forms of NSCLC which are adenocarcinomas, squamous cell carcinomas, and large cell carcinomas. Adenocarcinoma usually accounts for about 40% of all lung cancers. They are found in the outer part of the lung. On the other hand, squamous cell carcinoma can be found in the center of the lung in which it accounts for about 25% to 30% of lung cancers. Large cell carcinoma can be found in any part of the lung. This type of lung cancer tends to be harder to treat due to its rapid growth and spread rate.

Causes of Lung Cancer

The core root of lung cancer is due to smoking, either from passive smoking, or from secondhand smoking. Since tobacco contains over 4,000 chemicals, it has been proven from previous studies that tobacco is a carcinogen. (def of carcinogen). The two carcinogenic chemicals are known as nitrosamines and polycyclic aromatic hydrocarbons. Lung cancer can also develop from non smokers who have been exposed to these chemicals via inhaling tobacco smoke. This issue appears to cause an estimate of 3,000 lung cancer deaths. Another cause of lung cancer is by radon gas. Radon gas is a natural decay product of uranium. It has been estimated that radon gas caused 12% of lung cancer deaths. Radon gas is invisible, and odorless in which it makes it hard to avoid from being exposed because they can travel from underground all the way to your homes through the gaps in the doors, pipes, drains, etc. Another factor that can cause lung cancer can arise from families who has the history of cancer in their genes. This is very important because familial predisposition can be avoided by being knowledgeable of <https://assignbuster.com/lung-cancer-types-causes-and-treatments/>

the causes and ways to prevent oneself from getting lung cancer. Other environmental factors can also cause lung cancer such as exposure to copper, nickel, chromium, cadmium, etc.

Signs and Symptoms of Lung Cancer

In some cases, 25% of individuals with lung cancer do not show any signs or symptoms. They are usually discovered through the use of tools such as Chest X-rays, CT Scans. Chest X-ray is a test in which the chest is exposed to radiation in order to produce an image of the organs inside the chest. CT Scan is a type of x-ray procedure where they use a computer to generate cross-section views and sometimes three-dimensional images of the internal organs. From here, doctors can usually see a tumor with the shape of a coin. Moreover, some individuals show symptoms in which they have trouble breathing, coughing, wheezing, chest pains, and coughing up blood. Depending on the severity of the disease, it can cause from shoulder pain to paralysis, and difficulty swallowing.

Treatment of Lung Cancer

Throughout the century, society's knowledge on medicine has expanded drastically. There are a lot of ways to treat non-small cell lung cancer. The treatment for non-small cell lung cancer varies from each individual depending on the severity of their disease and the stage they are in. Treatments involves surgery, chemotherapy, and radiation therapy. Mainly surgery is often the first step in treating non-small cell lung cancer. Examples of surgery procedures include from wedge resection; a small portion of the lung is removed along with the surrounding tissue around the lung, segmental resection; similar to lobectomy where removal of a section

of a lobe of the lung, lobectomy; surgery in the lobe of the lung to segment removal (a part of the lung is removed based on the size of the tumor) and pneumonectomy (the entire lung is removed).

A second treatment is a procedure where drugs are used in order to kill cancer cells and prevent new cancerous cells from spreading. Chemotherapy is a procedure in which surgery is performed in order to remove the specific cancer, or chemotherapy can also be performed depending on which stage the cancer is. Sometimes this technique is given before and/or after surgery. The main purpose if it is treated before surgery, it is used to make sure that the treatment is effective. Although, if chemotherapy is treated after the surgery, the main purpose of this is to kill any of the remaining cancerous cells that still remain present in the area in which it was infected.

Chemotherapy is usually treated to those who does not have cancer beyond the lung. Due to the ineffectiveness of the technique, only 10%-35% of cancer is removed from this procedure. .

The third technique includes a high-energy rays which is called radiation therapy; which is used to kill cancer cells and prevent them from growing. Radiation therapy can be performed along side with chemotherapy especially if the surgery is not possible on the patient. There are two treatments which help relieve symptoms that are caused by the Non Small Cell Lung Cancer. These include the laser therapy, and the photodynamic therapy. Laser therapy uses a high intensity light beam in order to eradicate lung cancer tumors. This can also be used to relieve side effects of the therapy. On the other hand, photodynamic therapy is a technique that uses a light-activated chemical where it is injected to the patient and followed by

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the use of laser to activate the chemical and destroys the cancerous cell.

Based upon the techniques mentioned above, there are no easy way to treat lung cancer or any cancer in that matter. This is why it is very important to try to avoid getting such a deadly disease by considering some of the ways to prevent it.

Prevention of Lung Cancer

It is obvious that for some individuals, it is very difficult for them to avoid getting lung cancer especially if the disease is present in their germ line.

Although, this is not the case for everybody. Due to the fact that one of the causes of lung cancer is smoking, it is imperative to say that you should try to avoid smoking in any way. May this be from passive smoking or secondhand smoking. It is important to avoid being exposed to the chemicals that tobacco releases because these chemicals are the key components in giving you cancer. By this said, people who have smoked in the past are in a higher risk of lung cancer compared to those who are not. Another factor that plays in the prevention role of lung cancer is having a healthy and balanced diet. This is important because eating a healthy diet plays role in preventing you from getting any disease or getting sick. Finally, the last step that you can do in order to prevent yourself from getting lung cancer is to have yourself tested and take a screening test. Although screening is not going to help cure cancer, it is a step in finding out whether you have the disease or not in an early stage so that it will be easier to kill the cancerous cells and prevent it from spreading.

In conclusion, lung cancer has many forms. May it be from the different types of lung cancer or types of Non-Small Cell Lung Cancer, the causes are

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closely related to each other. Learning the dynamics of lung cancer provides you with information in which you learn the causes, signs and symptoms, treatments, and also, the prevention of lung cancer. These are all very important because being informed on such a deadly disease provided us with a growing knowledge in which science can expand their field in finding the cure to not only lung cancer but to all deadly disease.