

# Comparison of lung cancer treatments



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Cancer is one of the major health problems in Malaysia. One of the most occurrences in Malaysia is the lung cancer. Before we can answer ‘ what is lung cancer?’ we need to know what is cancer itself is. The body is made up of millions of individual cells, most of which are capable of dividing and reproducing themselves so that the body can grow and, if injured, repair itself. The division of cells to form new cells is carefully controlled in the normal body so that extra and unwanted cells are not produced. Very occasionally a cell may develop in which the mechanisms controlling cell divisions are defective. Such a new cell may be permanently ‘ switched on’ and continue to divide or simply cannot respond to the normal signal telling it to brake and stop dividing. If this cell goes on dividing the new cells it produces are likely to lack the normal mechanism controlling cell division, and may also carry on growing unchecked. Eventually this will form a cancer. Then it will lead to the process of metastasis, where other tissues cells been infected by the cancer cell. As for the lung cancer, the uncontrollable division of the tissue cell takes place in the lung. Most of the times, lung cancer started form from the epithelial cell in the lung surface. In fact, lung cancer is one of the most causes of death to both women and men. Shortness of breath, coughing and loss of weight are the common symptoms of the lung cancer. Smoking the cigarette or tobacco is one of the major causes of the lung cancer or indirectly we have been exposed to the cigarette smoke which we called passive smokers. But, there are also other causes for this disease which are breathing industrial chemicals such as asbestos, arsenic and other natural gases. Lung cancer is one of the most dangerous cancers. There are available treatments that can longer the life span of the patient

but to completely cure is unlikely to happen. So what is the best solution for this disease?

## **THE POSSIBLE SOLUTION**

Surgery is a medical procedure where the doctor will cut open the patient body in order to treat or investigate disease or injury, to improve body function and also many other reasons. It is mainly known as operation or surgery.

Surgery is the most preferable treatment by the almost all the doctors around the world in order to treat the lung cancer. Doctor plays vital role in determining the best treatment for the patients by considering many aspects. The aspects including the overall health state of the patient, the size and location of the cancerous cells. As we know there are many causes for lung cancer to occur. Hence the treatments also vary depends on how rarely the person exposed to the carcinogenic agent. When the person is a heavy smoker, the level of the lung cancer that he or she suffers is bad. So he or she might be needed to go through surgery in order to treat the lung cancer. If the cancer does not infect other cell beyond lung the most effective way is cutting away the tumour. By using this method, about 10%-35% of cancerous cell in the lung can be removed. The patient will be undergone blood tests and spirometry- lung function testing- in order to know whether the patient is fit for the operation. The surgery will not be conducted if the patient is not fit.

There a lot of ways of performing the lung cancer surgery. But the most common ways are thoracotomy and median sternotomy. Thoracotomy

involved process of cutting through the cell wall whereas median sternotomy involving the breast bone. Both of them are the standard method of the lung cancer surgery.

As the time goes on, the advancement in the technology makes the surgery of the lung cancer easier. Recently, surgeons have developed surgery that involved only a small part of the patient body to be cut for the removal of cancerous lung tissue. Video-assisted thoracoscopy (VAT), widely known VATS, it used video camera to give the real vision of the lung and make opening within the chest cavity. It will make a smaller opening than the standard surgery of the lung cancer. This method has also been improved by the usage of the new technology of the Computed tomography (CT) scans.

## **SOCIAL AND ECONOMICAL IMPLICATION**

### **SOCIAL**

Many people think they are fit and healthy. Thus, they are reluctant to do regular screening. They also do not take note the early sign of the disease. Most of the people would just stay home when they having high fever and only take the aspirin without going to see the doctor. Hence, most of the people are not aware that they are having a serious health problem. For most of the people they think that eating healthy food is already enough to maintain they health. But in the reality there are a lot of reasons for the diseases to happen. Lack of awareness on early detection and take-it-easy attitude among people cause them to avoid screening. The diagnosis of lung cancer is a crisis in a person's life. This is because it will cause them to confront with changes in identity, role, social interactions and presenting them with an uncertain future.

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In addition, most of the patients cannot accept that they are having a lung cancer. Even so they are having a healthy lifestyle, but they are been infected by the diseases. Most of the patients will feel depressed and they will separate themselves from the society. They are afraid and feel shame to face the society, so most of them just keep the information of having a dangerous disease from everybody else. This indirectly will increase the tension of the patients and this will enhance the growth of the cancer cell.

## **ECONOMICAL**

Lung cancer treatments cost a lot of money. Hence it can affect the economy of the country especially to the country that has the highest frequency of occurrence of lung cancer. These can be seen by the need of the companies to pay for the treatment for their employees. In average, the total cost of the treatment depends on the state of the severity of the patient. If the patient has already reached the final stage of the lung cancer, the government will not support the cost of the treatment because the chance for them to be cured is scarce.

In addition, lung cancer also causes the slow growth of economy of the country. Most of the effected people are at the early age of 40s. Because of that, our manpower has been reduced in a huge scale and this will cause the country workers number reduces. In order to overcome this problem, the government needs to hire the workers from the foreigner countries and also need to borrow some of their specialist due to lack of local specialist. Hence, the government needs to pay more money for the human source.

I believe we need to do our best to minimize the number of lung cancer cases. By doing this we will help the country to increase the rate of economy growth. Both government and non-government need to cooperate to ensure in the effectiveness of reducing the new cases of lung cancer.

## **BENEFITS AND RISKS**

Every treatment has its own benefit and also risk. Surgery benefits the peoples by getting better after gone through the surgery, thus they can have a chance to have a better live and do the things that they cannot do before. So, the medication can enhance the quality of life and can provide a brighter live. There is always a hope to be healthy again. This first line treatment also can cause side effects to human health. The surgical procedures can cause a condition called lymphocytopenia-low number of lymphocytes (white blood cells) in the blood-which will cause the patient to have a small chances to survive if the lung cancer spread and entering severe stage. But this problem can be overcome by the recombinant of human interleukin-2 (rhIL-2).

Breathing difficulties, shortness of breath, pain and weakness are some of other side effect that will be experienced by some of the patient that already undergone the surgery. It is important to let your health care team know if you experience this so they can provide you with methods to control this.

There is a lot of method and ways to prevent these effects to becoming worse. There is other risk of surgery especially when a lot of opening on the patient body. The risks included complications due to bleeding, infection, and general anesthesia. The most crucial potential complications of surgery on the lung include excessive bleeding during the operation, changes in the heart rhythm (cardiac dysrhythmias) or heart attacks- most of the attacks

cause no symptoms and can be controlled by the drugs, persistent leakage of air into the chest requiring prolonged drainage, infection in the chest between the lung and the chest wall (an empyema) and also the formation of clots in the veins in the legs, which can result in a clot breaking off and going to the lungs (a pulmonary embolus). So it is important for the surgeon to tell the patient about the risks. However, most patients will have few problems and will be able to leave hospital within a short period.

## **ALTERNATIVE SOLUTION**

### **CHEMOTHERAPY**

One of the alternative treatments for the lung cancer is the chemotherapy. Chemotherapy in general is a treatment of disease by using by chemicals means in order to kill microorganisms or cancerous cells. Antineoplastic drugs are usually used in treating cancer or cytotoxic standardized treatment regimen- combination of antineoplastic drug. Chemotherapy worked by killing the cells that divide rapidly such as cancer cell. Sometimes cancer cells can spread microscopically- cannot be seen by the naked eye. By using chemotherapy this cancerous cell can be killed. This method is crucial when conducting surgery because we cannot see the cancerous cells. Chemotherapy is effective in longer the life span of the patient and also in reducing the symptoms.

Chemotherapy can treat all type of lung cancer- NSCLC and SCLC. It can work alone or as helping agent in the surgical therapy or together with the radiotherapy. The most effective chemotherapeutic drugs for the lung cancer treatment are the platinum-based drugs. Only the combination of the radiation and chemotherapy can be used in treating the SCLC because <https://assignbuster.com/comparison-of-lung-cancer-treatments/>

surgery is not effective to treat this type of cancer due to the widespread of the tumour in the body. This method helps to longer the survival time of the patients. Although this method is not very effective working alone to treat NSCLC but it help lengthen the life span of the patient if the NSCLC have metastasized.

There are many ways of giving the chemotherapy. It can be administered in form of pills or as an intravenous infusion, or as a combination of the two. Chemotherapy treatments are usually given in an outpatient setting. A combination of drug is given in a series of treatments for a certain period of time and it is depending on the type of tumor.

The chart below lists the most commonly used chemotherapy agents for the treatment of lung cancer.

## **Brand Name**

## **Generic Name**

Platinol®

Cisplatin

VP-16; VePesid®

Etoposide

Paraplatin®

Carboplatin

Taxol®



Paclitaxel

Taxotere®

Docetaxel

Navelbine®

Vinorelbine tartrate

Adriamycin®

Doxorubicin

Oncovin®

Vincristine sulfate

Ifex®

Ifosfamide

Gemzar®

Gemcitabine hydrochloride

<http://www.oncologychannel.com/lungcancer/chemotherapy.shtml>

In some circumstances, the drugs used in chemotherapy also kill normally dividing cells in the body which result in side effect. One of the side effects is damage to blood cells which will results in the vulnerability of the patient to get infected. It also cause the difficulties in blood clotting and also other side effects including fatigue, weight loss, hair loss, nausea, vomiting, diarrhea,

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and mouth sores. But the side effects are varies depending on many factors. Nowadays there are many type of medications have been developed to treat or prevent many of this side effects. But usually the side effects disappear during the recovery phase of the treatment or after its completion.

## **RADIATION**

Both of type of the lung cancer can treated with radiation therapy. This alternative used the high-energy X-ray to the surface of the patient body and then kills the cancer cells that present inside. Radiotherapy worked the best when combined with chemotherapy and it is effective in curing patient with NSCLC who are not fit for the surgery. Radical radiotherapy is a form of high intensity radiotherapy and the hyperfractionated accelerated radiotherapy (CHART) is the improved method from before. It used high dosage of radiotherapy in short period of time. Chest radiation with chemotherapy is the most common preferable choice to treat potentially curable cancerous lung cell. But it only benefits to whom that has tumour that has already spread to the mediastinal lymph nodes.

There is a lot of way to deliver the radiation whether by externally or internally. Machine is used to direct the radiation toward the region of cancer and through placement of radioactive substances in a sealed containers within the region of the tumour been detected in the body. When a small pellet of radioactive material placed directly into the cancer or into the airway next to the cancer it is known as Brachytherapy. This method is usually done using a bronchoscope.

Radiation therapy is the best alternative way that can be chosen by the person that does not want to undergo surgery, spreading of the tumour to the areas that make it impossible to be cut away or the person is not fit to undergo surgery. If only radiation therapy is been applied as the treatment, it can only shrink a tumour or as inhibitor agent that will limit the growth of the tumour but in some cases the cancer still spread and cannot be treated by this means of therapy. Usually chemotherapy are used together with this method to increase the chances for longer life for the patients.

Varian Clinac 2100C Linear Accelerator.

## **Evaluation**

I have found the other source [ [http://www. cancer. gov/cancertopics/types/lung](http://www.cancer.gov/cancertopics/types/lung) ], very reliable and give a correct and clear view about lung cancer. Besides this website contain a lot of articles and researches on the diseases. It also been done by National Institute of Cancer, USA where all the information is gathered by the professional in the field of medical. It also can be reliable because the information is not just be gathered by the professional but it also included the view of patient of lung cancer that manage to be cured. So they really know how the diseases and how the treatment goes on. There is also another source that show almost the same information on the lung cancer which is [http://www. cancersociety. com/cancer\\_information/lung. html](http://www.cancersociety.com/cancer_information/lung.html) .

The other source is book with title “ Lung Cancer The Facts” write by Chris Williams. This is published book so the information is reliable. This book is the new edition from the second edition from the same writer, so it has very

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strong information. The writer also one of the members of the Cancer Research Campaign, Wessex Regional Medical Oncology Unit University of Southampton so, the writer have done a lot of research and he really know the details about the lung cancer. This book is published by Oxford University Press in 1992, although the book has been published in early 90s but the information is still reliable.