

A Review Article On: Malignant Tumors

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Abstract:

The Latin word cancer, meaning “crab”, was also given as a name to several disease. One of the diseases was the abnormal, spreading mass of tissue we can call a tumor. In the 14th century the Latin word cancer in the sense of “tumor” was borrowed directly into English, giving us our modern spelling and sense. This reviews discussed about the information of a cancer, such as types, prevention, and treatment. (KAN-ser) A term for diseases in which abnormal cells divide without control and can invade nearby tissues. It is the cells can also spread to other parts of the body through the blood.

❖ Keywords :

- Carcinogens,
- Gene mutations,
- Tumors ,
- Cancer,
- Uncontrolled cells,

- Surgery,
- Radiation therapy,
- Hyperthermia,
- Immunotherapy,
- Cancerous cells,
- Pre-cancerous cells,
- Non-cancerous cells,
- And KAN-ser.

I. Introduction :

Cancer is also known as “malignancy”. One of the defining feature of Cancer is a uncontrolled growth of abnormal cells anywhere in the body, cancer cells can also spread to other parts the body through the blood and lymph system; the latter process is referred to as metastasis. Widespread metastases are the primary cause of death from cancer. It is a genetic term for large group of diseases that can affect any part of the body.



Fig. Cancerous Cell

❖ What is Cancer?

It arises from the transformation of normal cells into tumor (cancer) cells in a multistage progresses from a pre-cancerous lesion to a malignant tumor. These changes are the result of the interaction between a person's genetic factors and three categories of external agents, including :

- Physical carcinogens, such as ultraviolet i.e UV and ionizing radiation;
- Chemical carcinogens, such as asbestos (incombustible), components of tobacco smoke, alcohol, aflatoxin and arsenic
- Biological carcinogens, such as, infections from certain viruses, bacteria, or parasites.

The incidence of tumor rises dramatically with age, most likely due to a build up risks for specific cancers that increases with age. The overall risk accumulation is combined with the tendency for cellular repair mechanisms to be less effective as a person grows older.

Who response :

In 2017, the world health assembly passed the revolution prevention and control in the context of an integrated approach, that urges governments and WHO to accelerate action to achieve the target specified the global action plan for the prevention and control of NCDs 2013-2020 and the 2030 UN agenda for sustainable development to reduce premature mortality from cancer.

WHO and IARC collaborate with other UN organization, including the international atomic energy agency, and partners to:

- Increase political commitment for cancer prevention and control;
- Coordinate and conduct research on the human cancer and the mechanism of carcinogenesis;
- Monitor the cancer burden (as part of the work of the global initiative on cancer registries) ;
- Identify "best buys" and other cost effective, priority strategies for cancer prevention and control;

- Strengthen health systems at national and local levels to help them improve access to cancer treatments;
- Set the agenda for cancer prevention and control in the 2020 WHO report on cancer ;
- Provide technical assistance for rapid, effective transfer of best practice interventions to countries.

❖ Types of cancer :

There are over 200 types of cancer, few of them are as follows -

1. Bladder cancer
2. Brain cancer
3. Colon cancer
4. Esophageal cancer
5. Head and Neck cancer
6. Breast cancer
7. Kidney cancer
8. Leiomyosarcoma
9. Leukemia
10. Liver cancer
11. Lung cancer
12. Lymphoma
13. Melanoma
14. Multiple myeloma
15. Ovarian cancer
16. Pancreatic cancer
17. Prostate cancer
18. Bone cancer (sarcoma)
19. Stomach cancer
20. Testicular cancer
21. Uterine cancer

1. Bladder cancer :

Cancer that begins in the bladder. Bladder cancer is also known as bladder carcinoma. This cancer typically affects older adults. It is usually diagnosed (covers) early, when it is still treatable. It can be treatable by a medical professional this cancer is rare (fewer than 1million cases per year in India).

Stages of Bladder Cancer

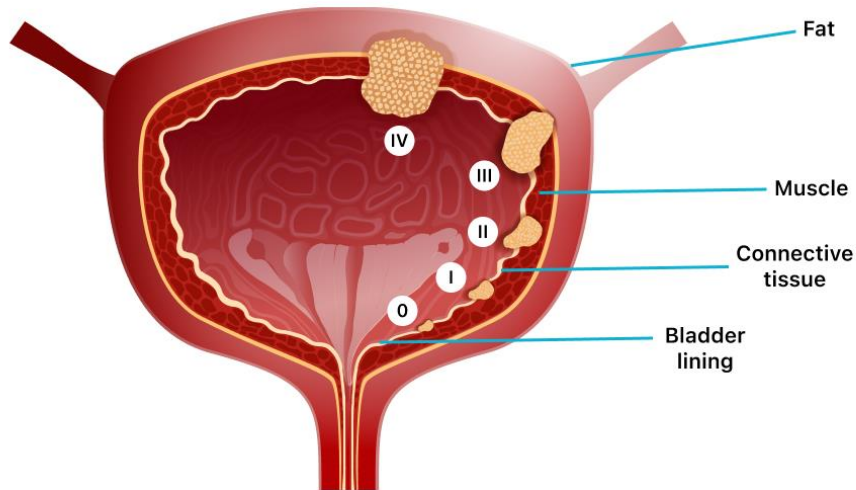


Fig. Bladder Cancer

2. Brain cancer :

A tumorous or non-tumorous growth of abnormal cells in the brain. It begins in the brain, or cancer elsewhere in the body can spread to the brain. This is the common type of cancer (more than 1 million cases per year in India).

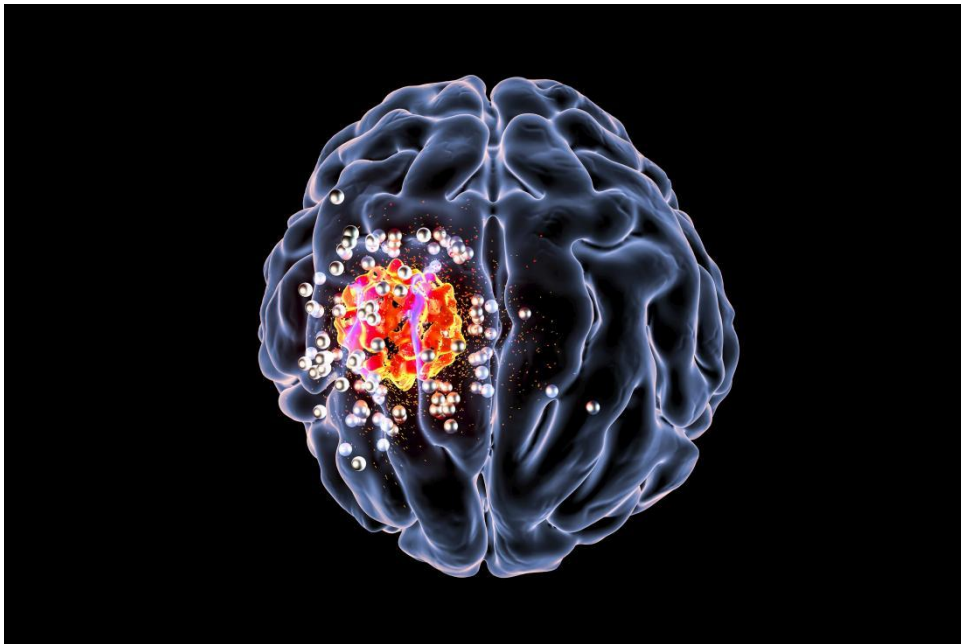


Fig. Brain Cancer

3. Colon cancer :

Colon cancer is also known as Colorectal cancer. A cancer of rectum or colon, located at lower end of digestive tract. These often have no symptoms but can be detected by screening. For this reason, doctors recommend screenings for those at high risk or over the age of 50. It is the common type of cancer, more than one million cases per year in India (1.93 million cases) & the death (916000).

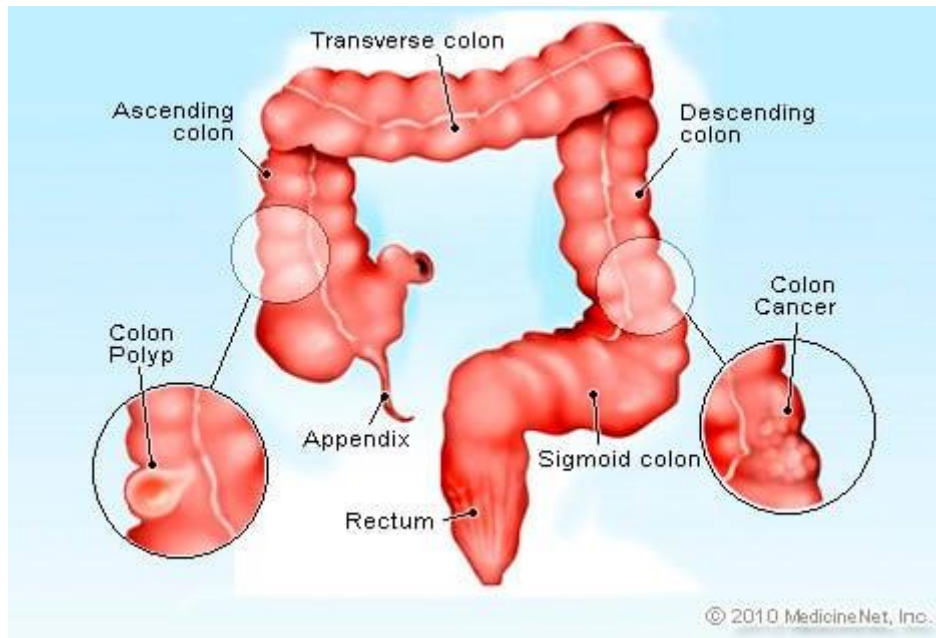


Fig. Colon Cancer

4. Esophageal cancer :

Esophageal cancer is also known as Esophageal carcinoma. Cancer of the tube that runs from the throat to the stomach (Oesophagus). Smoking and poorly controlled acid reflux are significant risk factors for esophageal cancer. It is rare.

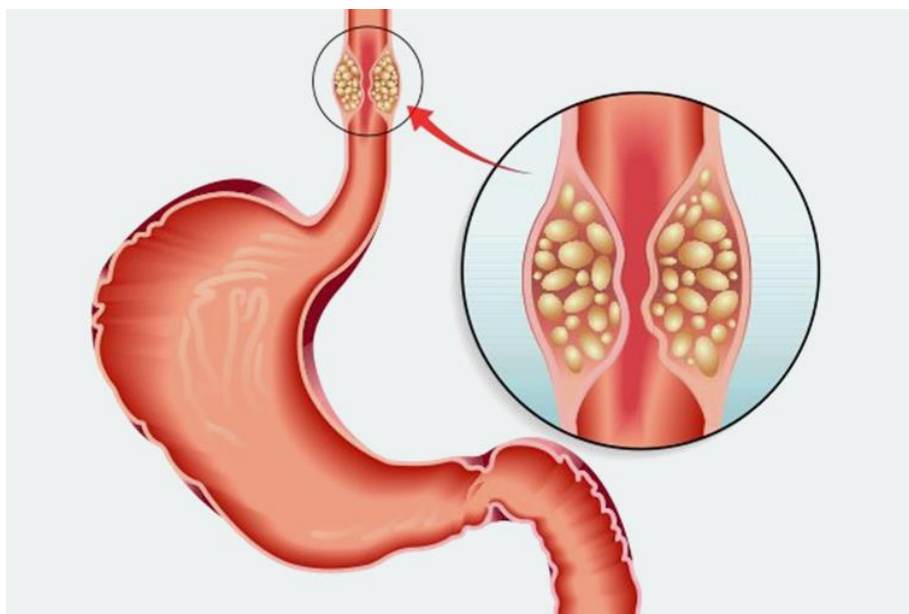


Fig. Esophageal Cancer

5. Head and Neck cancer :

It is also known as Throat cancer. A group of cancers of the mouth, sinuses, nose and throat. Smoking is the significant risk factor. Early symptoms occur as a lump or nodule, numbness, hoarseness, swelling, sorethroat or any difficulty moving the jaw or swallowing.

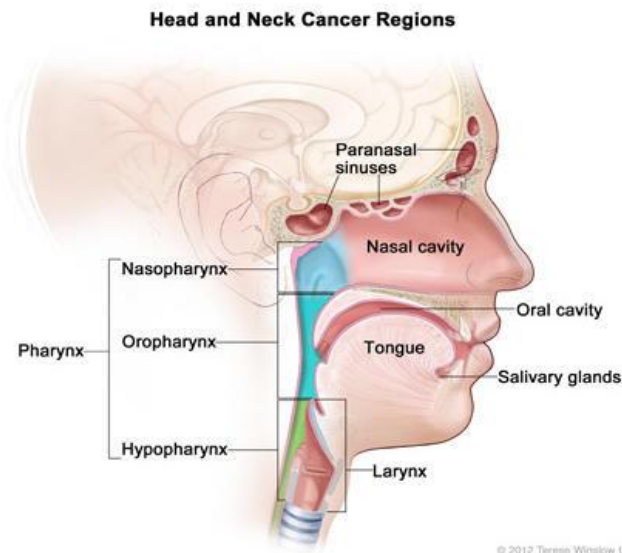


Fig. Head and Neck Cancer

6. Breast cancer :

A cancer that forms in the cells of the breasts. Breast cancer occurs mostly in the women and rarely in men. The most common symptom of breast cancer is the bloody discharge from the nipple and changes in shape of nipple or breast. The treatment of breast cancer depends on the stage of cancer it may consist of chemotherapy, hormone therapy, radiation and surgery. Sometimes breast cancer spread or metastasizes through the blood stream to the other parts of the body.

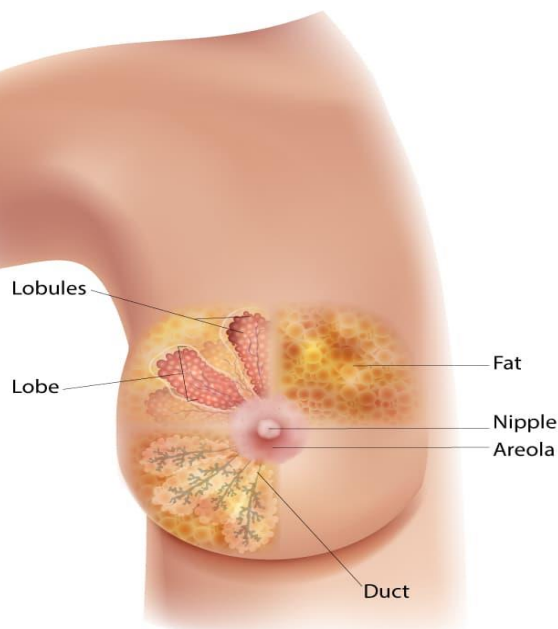


Fig. Breast cancer

7. Kidney cancer :

Kidney cancer begins in the kidneys. Your kidneys are two bean shaped organs, each about the size of your fist. They are located behind your abdominal organ, with one kidney on each side of your spine. In adults, renal cells carcinoma is the most common type of kidney cancer. Kidney cancer develops when cells in your kidneys change and growth uncontrollably. Kidney cancer treatments include surgery, chemotherapy and radiation therapy.

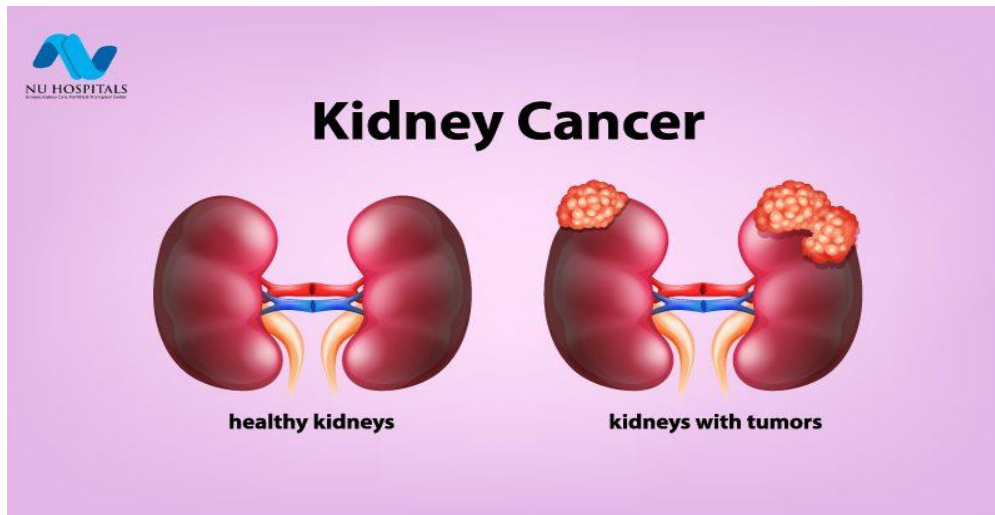


Fig. Kidney cancer

8. Leiomyosarcoma :

It is type of rare cancer that grows in the smooth muscles. The smooth muscles are in hollow organs of the body, including the intestine, stomach, bladder and blood vessels. In females, there is also smooth muscles in the uterus. General symptoms associated with this cancer may occur including fatigue, fever, weightloss , a general feeling of ill health nausea and vomiting.

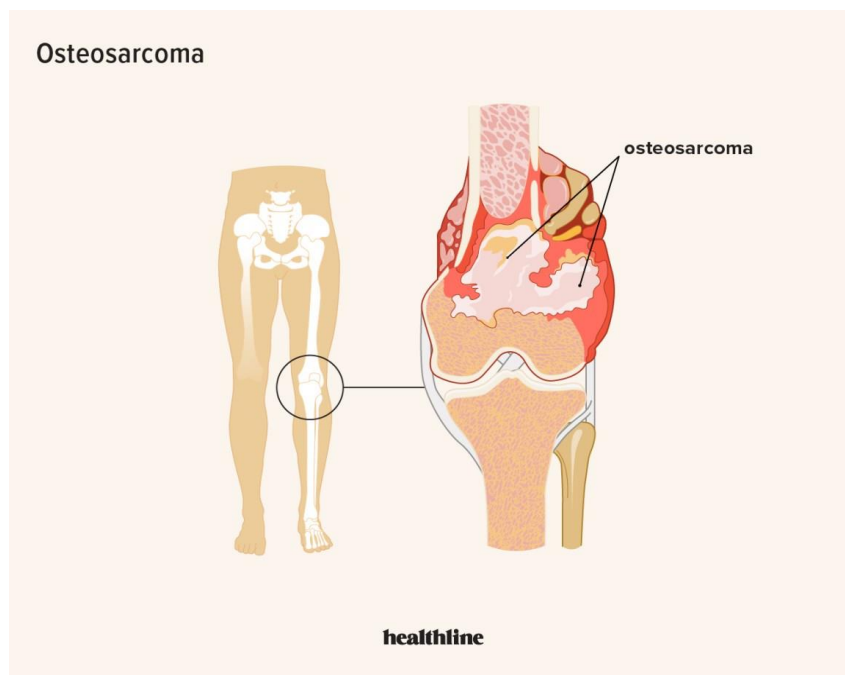


Fig. Leiomyosarcoma

9. Leukemia :

Leukemia is also known as blood cancer. A cancer of blood forming tissues, hindering the body's ability to fight infection. Leukemia is the cancer of blood forming tissues, including bone marrow. Rapidly growing types of leukemia may cause symptoms that including fatigue, weightloss, frequent infections and easy bleeding or bruising. The treatment of leukemia is highly variable.

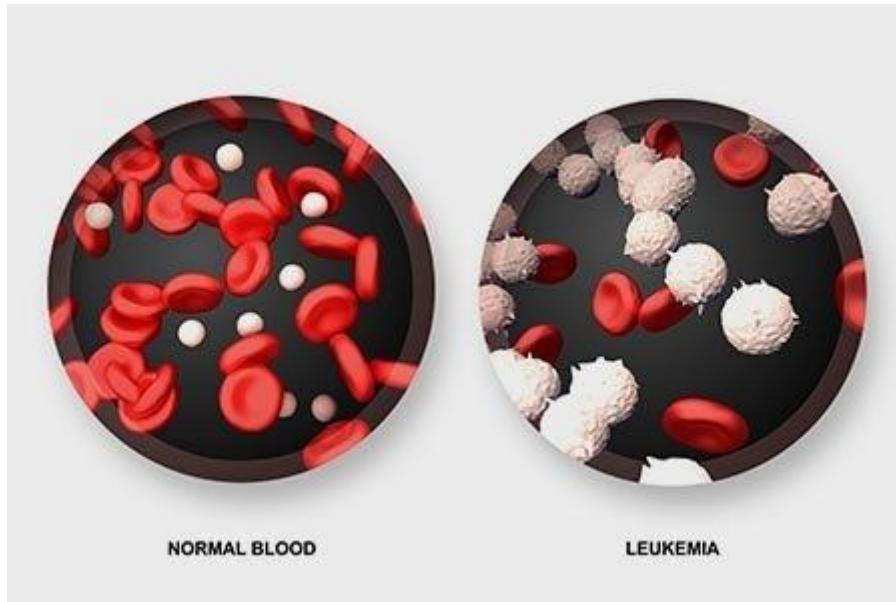
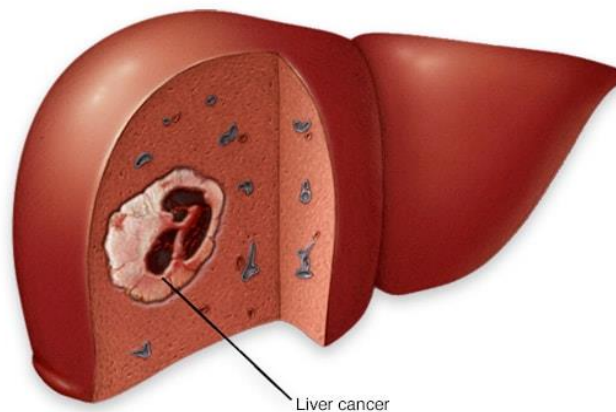


Fig. Leukemia

10. Liver cancer :

Liver cancer begins in the cells of the liver. Liver cancer is also known as hepatic cancer. The liver is the football sized organ in the upper right area of stomach. The treatment of liver cancer can help, but this condition can't be cured. It is the rare type of cancer. Symptoms are uncommon in the early stages of liver cancer. Symptoms may include stomach pain and yellowed skin. Treatment vary but may include removal of part of the liver, transplant, in some cases radiations and chemotherapy.



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Fig. Liver Cancer

11. Lung cancer :

Lung cancer that begins in the lungs. And most often occurs in people who smoke. There are two major types of lung cancer are; non small cells lung cancer and small cell lung cancer. Causes of lung cancer including smoking, second hand smoke, exposure to certain toxins and family history. It is a common type of cancer. Main symptoms of lung cancer cough and chest pain.

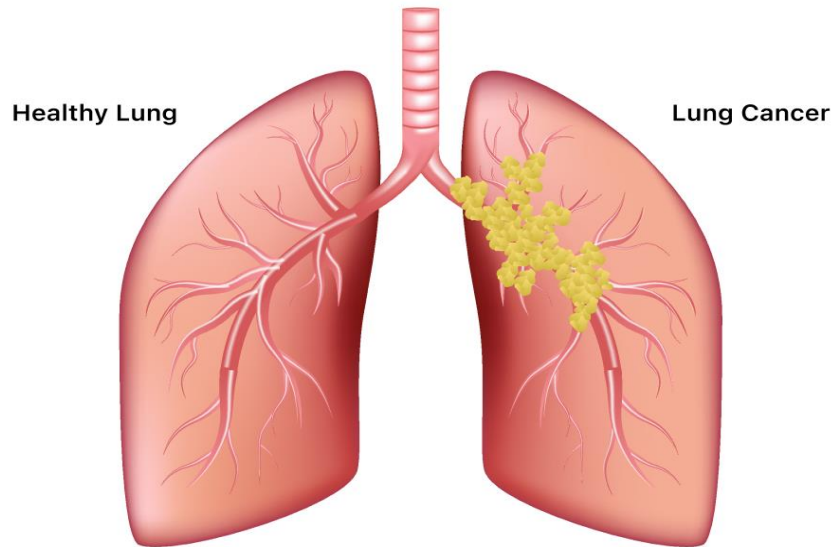


Fig. Lung Cancer

12.Lymphoma :

Lymphoma is also known as lymphatic cancer. It is a cancer of lymphatic system. The lymphatic system is the body's disease fighting network. It includes lymph nodes, thymus gland, spleen and bone marrow. The main types of lymphoma are Hodgkins lymphoma and non hodgkins lymphoma. It is the rare type of cancer.

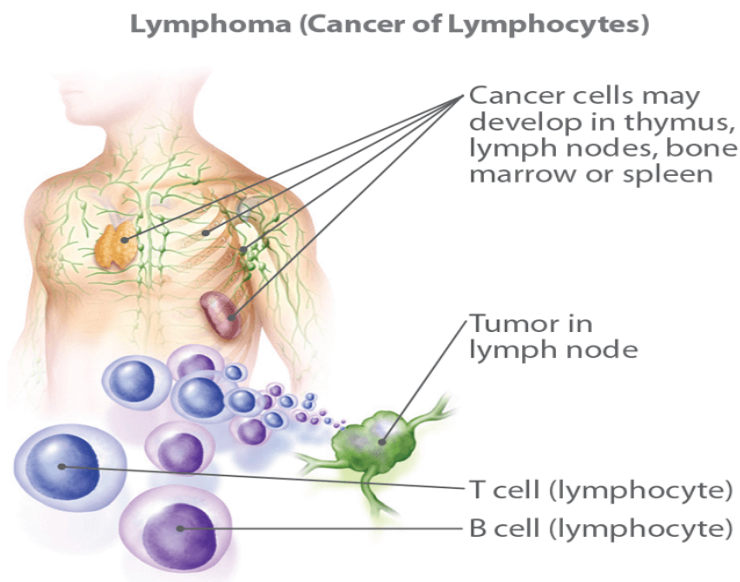


Fig. Lymphoma

13.Melanoma :

Melanoma is also called as malignant melanoma. It is the most serious type of skin cancer. Melanoma occurs when the pigment producing cells that give color to the skin become cancerous. It is the common type of cancer. Melanomas can occur anywhere on the body.

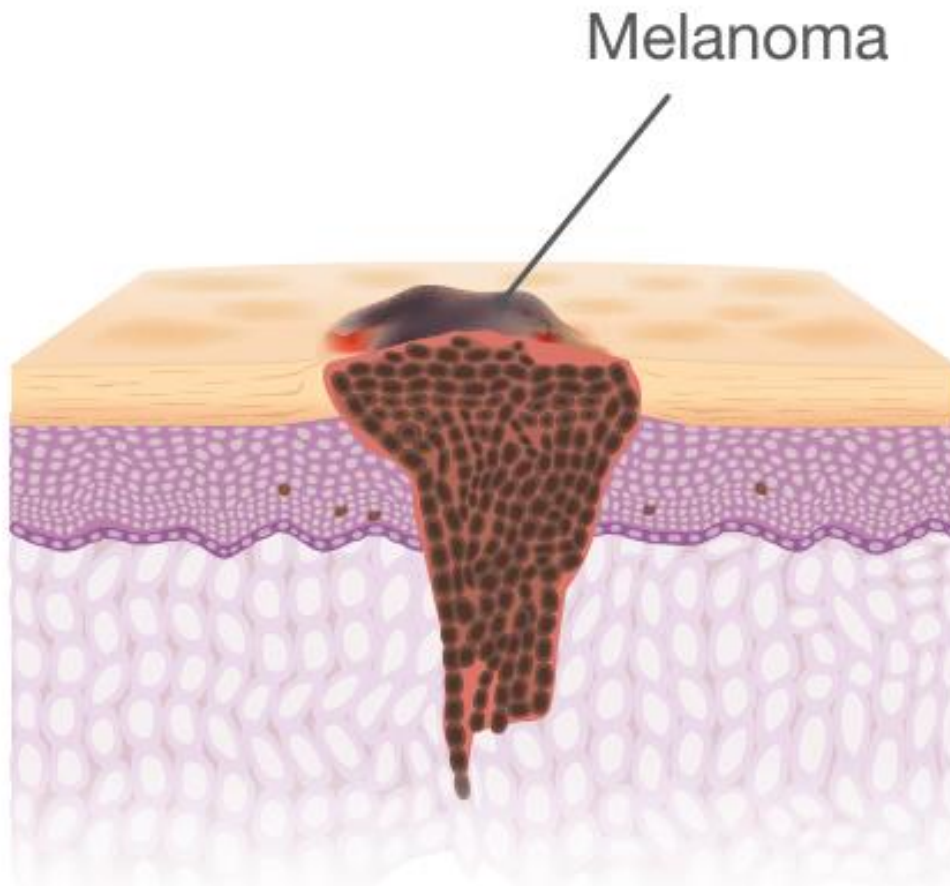


Fig. Melanoma

14. Multiple myeloma :

Multiple myeloma is also called as Kahler's disease. A cancer of plasma cells. The plasma cells are a type of WBC in bone marrow. This disease can damage the bones, immune system, kidneys and RBC count. It is the most rare type of cancer. Most common symptom is bone pain and loss of appetite.

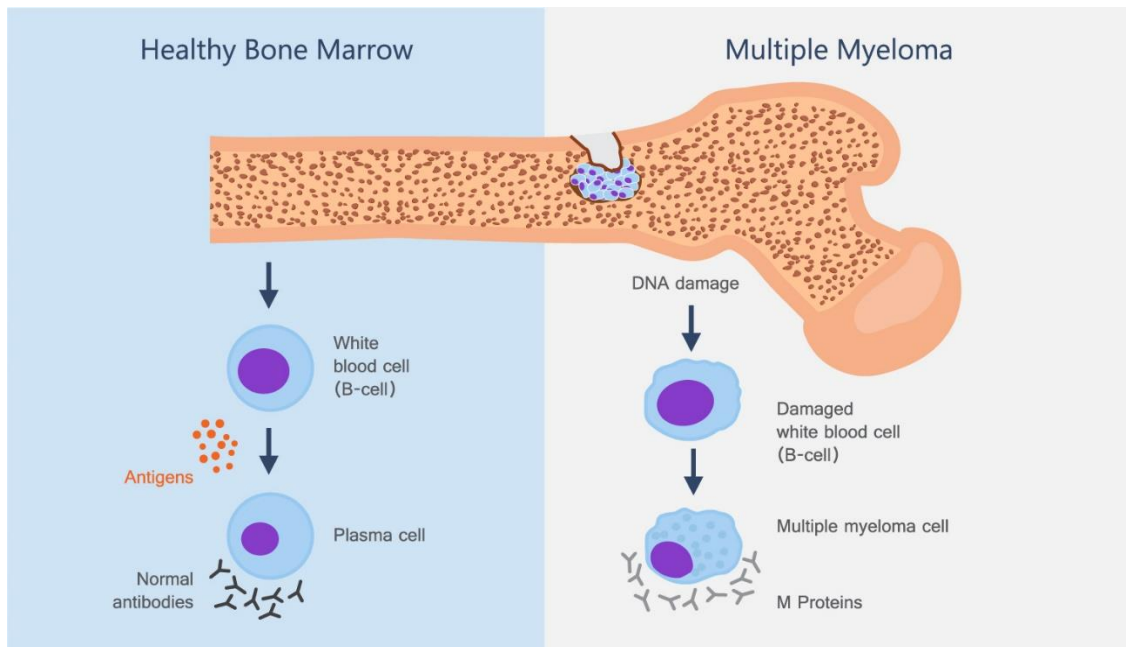


Fig. Multiple Myeloma

15. Ovarian cancer :

A cancer that begins in the female organs that produce eggs (ovaries). This cancer often goes undetected until it has spread within the pelvis and stomach. At this late stage. Ovarian cancer is more difficult to treat and can be fatal. It is the rare type of cancer. Ovarian cancer often has no symptoms in the earlier stages. Ovarian cancer is caused by inherited faulty gene such as the BRCA gene or those linked to lynch syndrome.

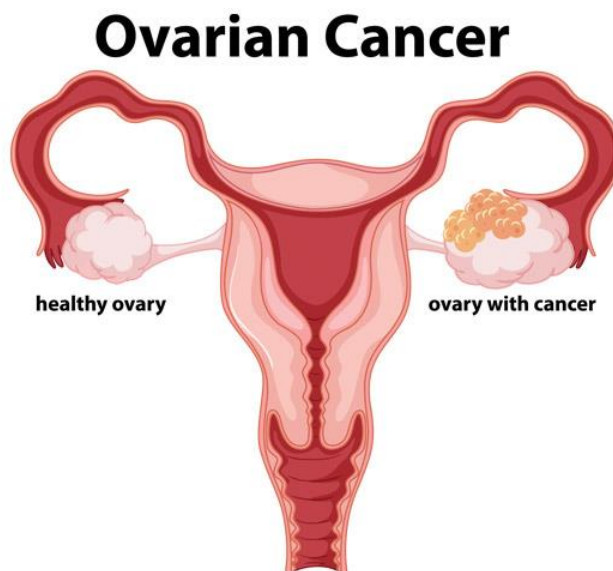


Fig. Ovarian Cancer

16. Pancreatic Cancer :

That begins in the organs lying behind the lower part of stomach (pancreas) the pancreas secretes enzymes that aid digestion and hormones that help regulate the metabolism of sugars. This type of cancer is often detected late, spread rapidly and has poor prognosis. It is the rare type of cancer. Treatment may includes surgically removing the pancreas.

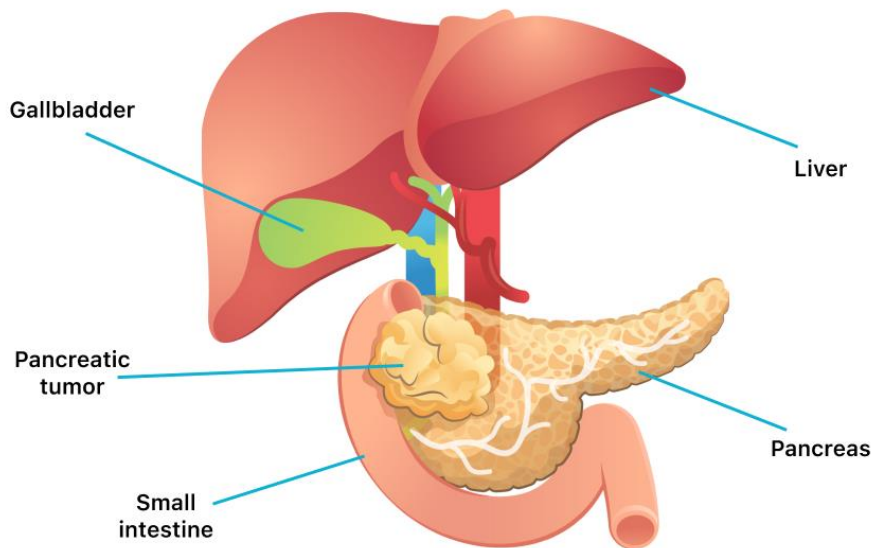


Fig. Pancreatic cancer

17. Prostate cancer :

This is also known as prostatic carcinoma. A cancer is a mans prostate, a small walnut sized gland that produces seminal fluid. A man prostate produce the seminal fluid that nourishes and a transports sperm. It is a common type of cancer. Some types of prostate cancer grow slowly. It can be cured when detected and treated early.

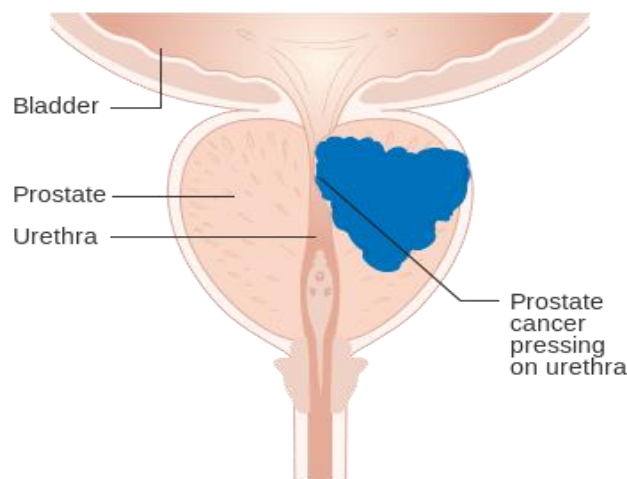


Fig. Prostate cancer

18. Sarcoma :

Sarcoma is also known as bone cancer (bone tumor and bone neoplasm). A mass of unusual cells growing in the bone. Most bone tumors aren't cancerous. Causes of bone tumor include; abnormal healing of an injury, inherited condition and radiation therapy. They can also be caused by bone cancer or another cancer that has spread to the bone from other parts of the body. It is the rare type of cancer.

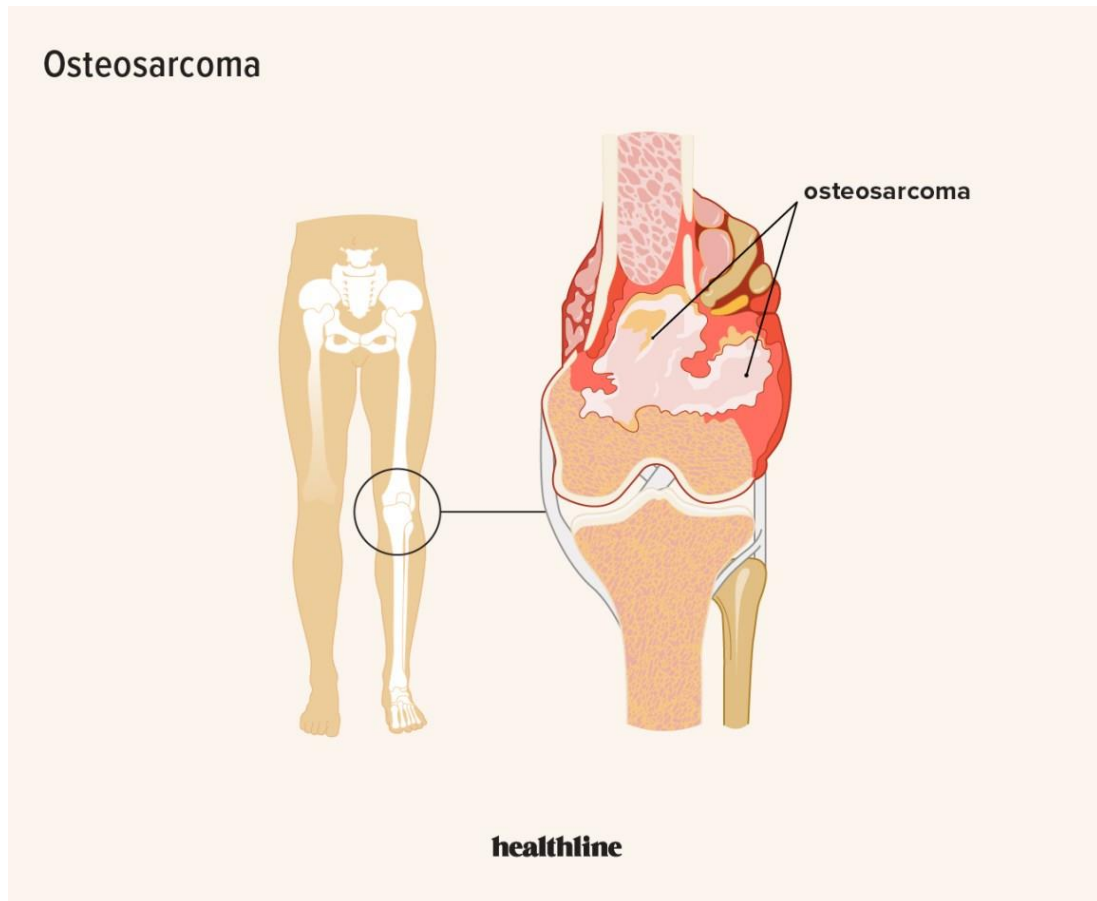


Fig. Sarcoma (bone cancer)

19. Stomach cancer:

Stomach cancer is also known as gastric cancer. Cancer that occurs in the stomach. Risk factors may include smoking and a diet of highly processed or salty foods. There may be no symptoms of stomach cancer early on. Later, symptoms include feeling bloated after eating, feeling full after small amount of food, nausea, heartburn or digestion.

Stomach Cancer

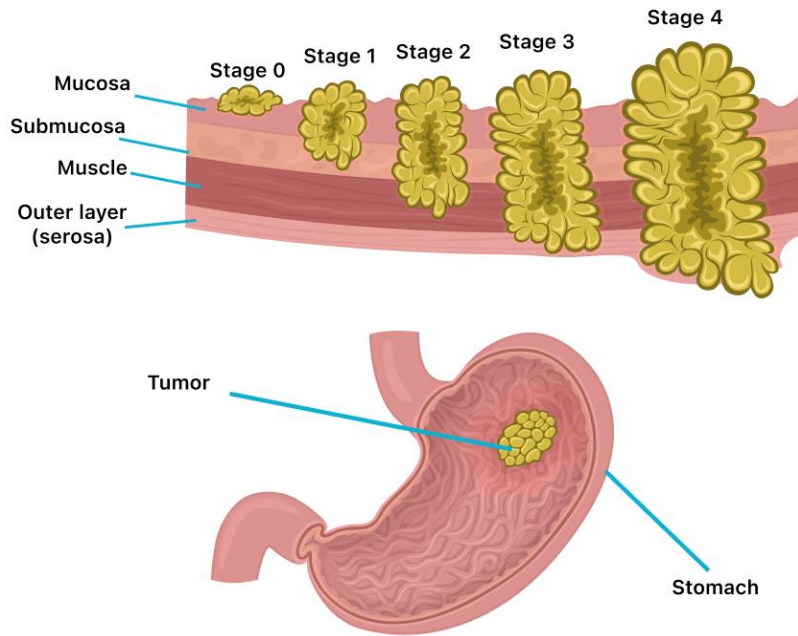


Fig. Stomach cancer

20. Testicular cancer :

Testicular cancer is also called as malignant neoplasm of testis. Cancer is the male organs that make male hormones and sperm (testicles). The testicles are located inside a loose bag of skin (scrotum) underneath the penis. It is the very rare type of cancer. Symptoms of this cancer is the feeling heaviness in the scrotum.

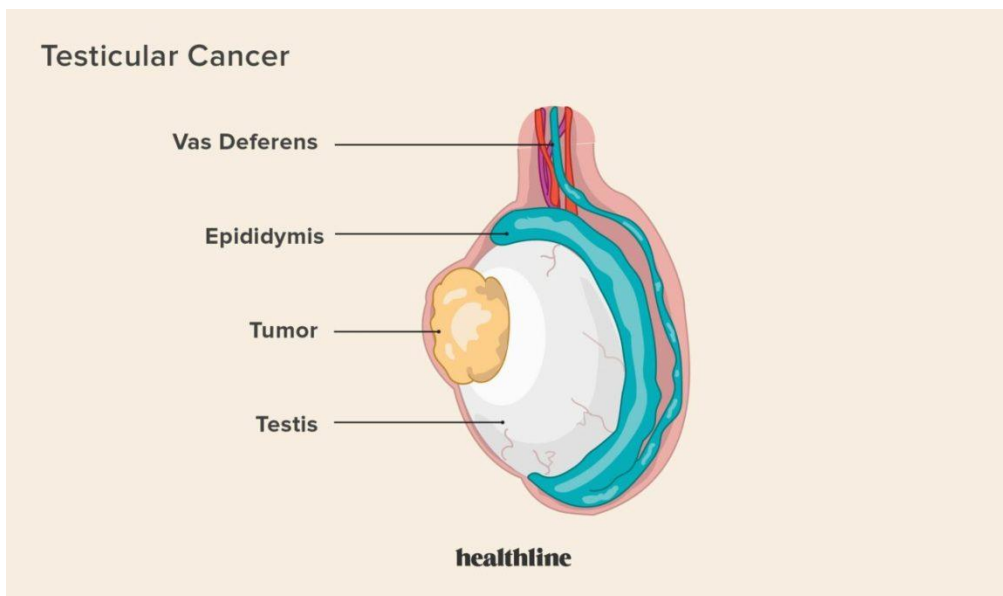


Fig. Testicular Cancer

21.Uterine cancer :

A type of cancer begins in the uterus. Most uterus cancer begins in the layer of cells that form the lining of the uterus. Risk factors include being overweight and starting periods at an early age .It is rare type of cancer. Symptoms of this cancer is vaginal bleeding after menopause and bleeding between periods. Treatment depends on the stage of cancer, surgery to remove uterus is the main treatment for most women with uterine cancer .

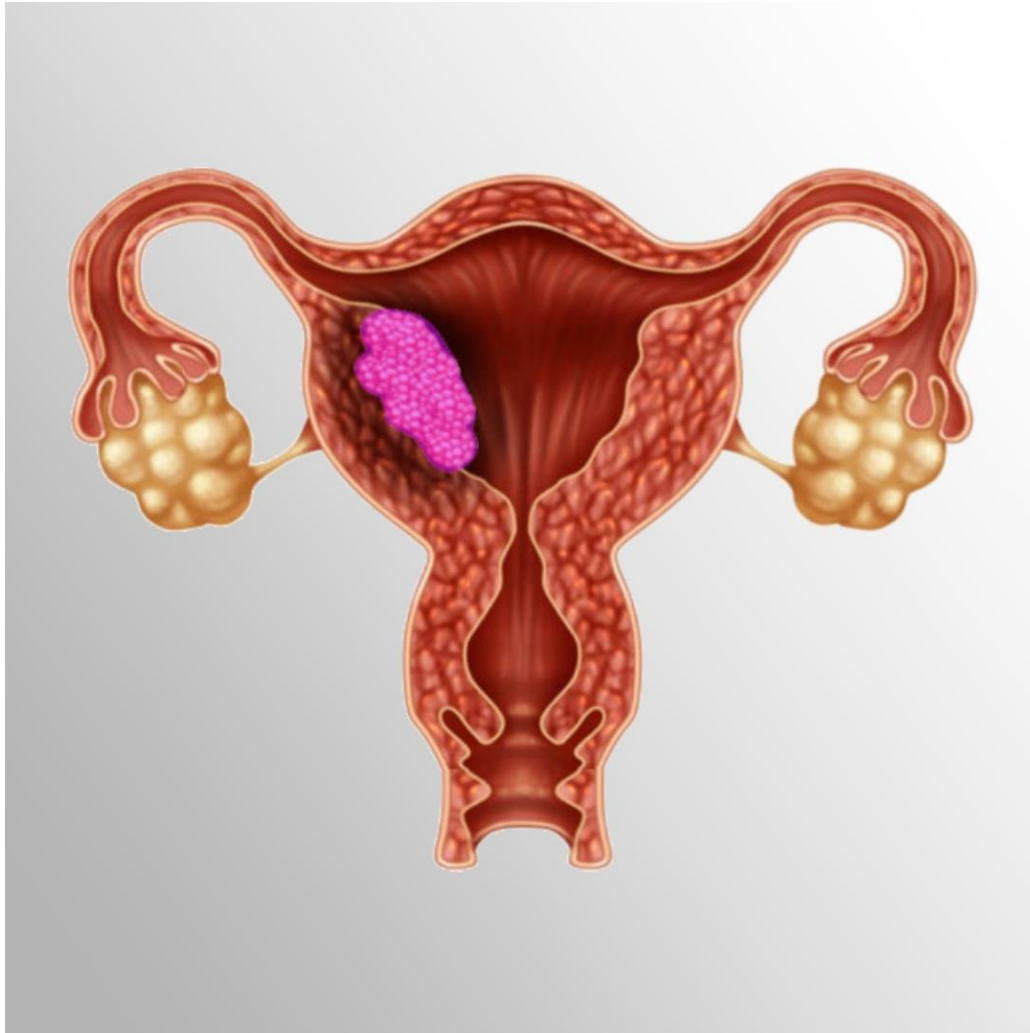


Fig. Uterian Cancer

❖ Signs and Symptoms :

Cancers signs and symptoms depends on the specific type and grade of cancer, although general signs and symptoms are as follows:

- Fatigue
- Body pain
- Weightloss
- Skin changes
- Change in bowel
- Unusual bleeding
- Change in voice
- Fewer
- Persistent cough
- Lumps
- Tissue masses
- Nausea
- Vommeting
- Sore throat that does not heal
- Thickening testicles
- Indigetion
- Loss of appetite
- Hair loss
- Anemia
- Insomnia
- Lymphedema
- Immune system depression

❖ Prevention :

Consider these cancer prevention tips :

- Eat a healthy diet.
- Maintain healthy weight and be physically active.
- Don't use tobacco, use any type of tobacco puts you on a collision course with cancer.
- Protect yourself from the sun.
- Get vaccinated.
- Avoid risky behaviors.
- Avoid smoking.
- Get regular medical care.
- Avoid contact with certain viruses.
- Don't share needles.
- Maintain a healthy weight.
- Limit processed meat.

❖ Treatment :

The most common treatments for cancer are,

- Surgery
- Chemotherapy
- Radiation therapy
- Targeted therapy
- Hormonal therapy
- Immunotherapy
- Hyperthermia
- Laser therapy
- Cryotherapy

▪ Surgery :

It is the common treatment for any types of cancer. During the surgery, the surgeon takes out the mass of cancerous cells (tumors) and some of the nearby tissue. Sometimes surgery is done to relieve side effects caused by tumor.

▪ Chemotherapy :

It refers to drugs used to kill cancer cells. The drugs may be given by mouth. Many types of drugs may be given together at the same or one after the other.

▪ Radiation Therapy :

It uses x-rays, particles or radioactive seeds to kill cancer cells. There are two types of radiation therapy,

(A) External beam :

This is the most common form. It aims x-rays at the tumor from outside the body.

(B) Internal beam :

This form delivers radiation inside your body. It may be given by radioactive seeds placed into tumor, a liquid or pill that you swallow or through intravenous or IV route.

▪ Targeted Therapy :

Targeted therapies are given as a pill or IV. This therapy uses drugs to stop cancer from growing and spreading. It does this with less harm to normal cells than other treatments. Targeted therapy drugs work in a few different ways. They may,

- Turn off the process in cancer cells that causes them to grow and spread.
- Kill cancer cells directly.
- Trigger cancer cells to die on their own.

▪ Hormonal Therapy :

Hormone therapy is used to treat cancers that are fueled by hormones, such as breast, ovarian and prostate cancers. The surgery involves removing organs that make hormones, the ovaries or testes. The Drugs given by injection or as a pill.

▪ Immunotherapy :

It is a type of cancer treatment that relies on the body's ability to fight infection. This helps your body get rid of cancer cells. Immunotherapy works by :

- Stopping or slowing the growth of cancer cells.
- Boosting the immune system's ability to get rid of cancer cells.
- Preventing cancer from spreading to other parts of the body.

▪ Hyperthermia :

It uses heat to damage and kill cancer cells without harming normal cells. It may be used for :

- The whole body
- A small area of cells, such as a tumor
- Parts of the body, such as organ or limb.

▪ Laser Therapy :

It uses a very narrow, focused beam of light to destroy cancer cells. Laser therapy can be used to :

- Destroy tumors and precancerous growths
- Help treat cancer symptoms, like bleeding
- Shrink tumors that are blocking the stomach colon, or esophagus
- Seal nerve endings after surgery to reduce pain.

▪ Cryotherapy :

It is also called as the cryosurgery, this therapy uses very cold gas to freeze and kill cancer cells. Doctors can also use a special instrument to deliver cryotherapy to tumors inside the body, like liver or prostate.

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