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Review Article A Comprehensive Review on Diagnosis, Prevention and Treatment of Antineoplastic Cell

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Abstract: *Now a day's cancer is the most prevalent life threatening disease which is spreading because of the lifestyle we are living. Cancer is due to uncontrolled growth of cell which can be cured if diagnosed in early stage of life. Cancer is a genetic disorder that results from genetic or epigenetic alterations in the somatic cells and has abnormal cell growth which may be spread to other body parts. In 2018, 18 million cancer was recorded globally in which 9.5 million cancer cases in men, 8.5 million cases in women, and 9.6 deaths were also recorded in the same year. Cancer in the broader sense refers to more than 277 different types of cancer disease. Scientists have identified different stage of cancers, indicating that several gene mutations are involved in cancer pathogenesis. Obesity, hyperglycemia, and increased oxidative stress may also contribute to increased cancer risk. Despite many decades of basic research and clinical research and trials of promising new therapies, new drugs, new treatments, cancer is the main cause of morbidity and mortality. Cancers are a broad range of diseases. Research on the chemo preventive potential of non-steroidal anti-inflammatory drugs. Further research, some of which possibilities are identified, is recommended EUROCANCERCOMS project discusses how the Internet has changed communication by cancer researchers and how it is the potential to change it still more in the future. Cancer is one of the most dreadful diseases all over the world that can cause death. Cancer could be treated with different methods such as surgery, chemotherapy or radiotherapy. Cancer is characterized by proliferation of cells that have managed to evade 2 central endogenous control mechanisms. look through and choose the most thorough and pertinent clinical trials, translational papers, research pieces, and reviews of publications on immunology and precision oncology cancer. The papers were chosen and ranked according to their uniqueness and possible therapeutic utility. Cancer is the uncontrolled growth and development of cells in the body and is one of the foremost reasons of death throughout the world. Methodology: In this review study, various techniques in cancer treatment especially radiotherapy modalities including three dimensional radiation therapy, intensity modulated radiation therapy, image guided radiation therapy, intra operative radiotherapy, stereotactic methods and brachytherapy are reviewed and discussed.*

Keywords: Cancer, Leukemia, Harmon, Genes, Radiotherapy, Chemotherapy, cell division, surgery.

I. INTRODUCTION

Cancers are a group of diseases characterized growth and spread of abnormal cells. If the spread of cancer cells this stage is known as metastatsis is not controlled, it can result in death. Cancer is caused by many external factors (tobacco, Chemical Radiation and infectious organisms) as well as some internal factors (inherited mutations, harmones, immune condition and random mutations). The causes of cancer are diverse, complex and only partially understood. Many things are known to increases the risk cancer, including dietary factors, certain infections, lack of physical activity, obesity and environmental pollutants. Cancer is the second leading cause of mortality worldwide. Overall, the prevalence of cancer has actually increased; just in the United States alone, approximately 1,665,540 people suffered from cancer, and 585,720 of them died due to this disease by 2014. Therefore, cancer is a serious problem affecting the health of human societies. Unfortunately, it is a variety disease at the tissue level and this variety is a major challenge for its specific diagnosis, followed by efficacy of treatment In men, the highest percentages of

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cancer types occur in the prostate, lung and bronchus, colon and rectum, and urinary bladder, respectively. In women, cancer prevalence is highest in the breast, lung and bronchus, colon and rectum, uterine corpus and thyroid, respectively. This data indicates that prostate and breast cancer constitute a major portion of cancer in men and women respectively. For children, the highest percentage types of cancer disease are blood cancer, and cancers related to the brain and lymph nodes, respectively. The name cancer derives from an observation by " Hippocrates " more than 2,300 Years ago. The term " korkinoma " in greek came then later, cancer is a Latin. The Hooke in 1600s and virchow in 1800s, came to an observation that living tissue are composed of cell and all the cells arises as direct descendants of other cells. Cancer is one of the most dreadful disease all over the world and 1% of annual increase in cancer incidence and mortality has been estimated, by 2030 there could be 26.4 million new patients with cancer, 1.7 million annual cancer deaths and 80 million people alive with cancer within five years of body. 22% of deadly cancers are related to the use of Tobacco and 10% of deadly cancers depend on to the nutrition. In fact 90-95% of cancers occured because of environmental issues like drug abuse, nutrition, stress, lake of physical activity and environmental pollutants. Remaining 5-10% is due to inherited cancer genetics. India witnesses approximately 1,200,000 new cancer cases each year. According to the latest data from the National Cancer Registry, 1 in 8 men and 1 in 9 women in India are projected to develop some form of cancer during their lifetime

Type of cancer: There are multiple types of cancer today but some of the common type of cancer are.

- Bladder cancer
- Thyroid cancer
- Breast cancer
- Prostate cancer
- Colon and rectal cancer
- Pancreatic cancer
- Lungs cancer
- Lungs cancer
- Skin cancer
- Kidney cancer
- Endometrial cancer
- Esophageal cancer
- Colorectal cancer
- Non-Hodgkin Lymphoma
- Kaposi sarcoma

Basically, the cancer is named after the part of that particular body from which it is originated.

Categories of cancer: There are five broad categories which indicates the tissue and blood classification of Cancer

1) Carcinomas: It is the cancer which is found in the tissue is known as "Epithelial tissue" that covers surface of organs, gland or body structure. Carcinomas are characterized by cells that covers internal and external parts of the body such as lungs, breast and colon cancer.

2) Sacroma: It starts in the tissue which connects the and support the body. It can be formed in the nerves, tendons, joint, fat, blood vessel, bone, lymph vessel, muscle or cartilage.

Example: osteosarcoma (occurs in bone) and chondrosarcoma (occurs in cartilage), there are somefour types of sarcomas they are soft tissue sarcoma, osteosarcoma, chondrosarcoma and Ewing's sarcoma.

3) Lymphoma: The designation lymphoma represents a large group of malignant neoplasms arising from the components of the immune system namely T and B cells. The first lymphoma type recognised was by Dr Thomas Hodkin in 1832. Lymphoma are cancer that being in the lymph nodes and immune system tissue.

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4)Leukemia: Leukemia cell usually invade the blood fairly quickly. They can then spread to other parts of body, including the lymph nodes, liver, spleen, central nervous system (Brain and spinal cord), and testicles (in males). It is divided into four type, that are acute myeloid leukemia, acute lymphocytic leukemia, chronic myeloid leukemia, and chronic Lymphocytic leukemia.

5)Myeloma: it grows in the plasma cell bone marrow in some cases the myeloma cell collect in one bone and forms a single tumor that is called However in some cases the myeloma cell collect in many bone, forming many bones tumors, that is called multiple myelom .Multiple myeloma through lowest in developing countries including Asia, is highest in African- American and Pacific islanders; intermediate in Europeans and North American Caucasian

How cancer is diagnosed:

There is a not single/specific test to diagnose cancer. Many test are needed to find out whether a person has cancer, or if any other condition or an infection is imitate the symptoms of cancer. The diagnosis of cancer involves the analysis of tissue and cytology speciemens obtained through several procedures, including surgical biopsy, core or aspirational needle biopsy, venipuncture, plueral or ascitic tap, scrapping of tissue surface and collection of exfolitative cells from urine and sputum. Most common are mutations which are change in the nucleotide sequence of genomic DNA. The challange for cancer diagnosis is to identify these genes and proteins at a very early stage. None of them were terminally ill, and 80% had been diagnosed within the last 6 month. Ferrans and powers Quality of Life Index and the Cancer Rehabilitation Evaluation system, short from, were completed 131 newly diagnosed Norwegian adult cancer patient. Diagnosis of cancer is carried by doctors by taking screening test of patients. For example- Colonoscopy, mammography and a pap test. Other test are also performed before screening test to check the abnormalities in the body. For example- CT scan, MRI scan, X-rays and ultrasound. If any person has symptoms of cancer doctor will perform various test.

1) Lab Test: Lab Test include urine, blood and other body fluids to measure the substances which are responsible for the cancer in the body, like low and high levels of the substances which can cancer. For instance, in people with leukemia, a common blood test called complete blood count may reveal an unusual number or type of white blood cells. In upto 90 % of cancer patient “routine” blood test are abnormal leading to a hypercoagulable state in this patient.

2) Imaging Test: In this test the picture of the area inside the body are created which help to see the tumor present or not. Imaging test allow your doctor to examine yours bone and internal organs in a noninvasive way. It involves test like.

A) CT scan: This can is used to create 3- dimension images of your organs from different angles by X-rays machine which are linked to computer. Concern exists that radiation exposure from computerized tomography (CT) will cause thousands of malignancies Each CT scans delivers an effective dose of between several and few tens of mSv, depending on the type of scan (UNSCEAR 2010). CT scan during adulthood are also of critical improvement for public health. Adult receive over 10 times more CT scan than children and most radiation induced cancer occurs during middle or elder age.

B) MRI scan: This scan is also used to take the picture of the body organs by taking pictures in the slices and created in detail image. Radio wave and powerful magnet are used to take this slices. As in CT scan, before MRI scan also you have to take a dye for further scan. The development of magnetic resonance imaging (MRI) for use in medical investigation has provided a huge forward leap in the field of diagnosis, particularly with avoidance of exposure to potentially dangerous ionizing radiation. MRI is a non-invasive method of mapping the internal structure and certain ascepts of function within the body. It employ the radio frequency (RF) radiation in the presence of carefully controlled magnetic fields in order to produce high quality cross-sectional image of the body in any plane.

3) Nuclear scan: It is also called a radionuclide scan because radioactive material is used to take the picture of body organs. Nuclear scan may not find very small tumors and cannot always tell whether a tumor really cancer. This scan can show some internal organs and tissue problem better than other imaging test, but they don't provide very detailed image on their own. As a CT and MRI scan the person needs to receive a small amount of radioactive material in the injection from know as tracer. It collect in the bones by flowing through blood. It includes 2 scans named as: Pet and Bone scan.

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A) Bone scan: It is used to checking for damage to bone or abnormal areas. Bone scan is sensitive to detect early osteoblastic changes occuring in primary bone tumor as well as in the skeletal metastasis of breast, prostate and lung primary tumor. They can often find bone changes much earlier than regular X-rays. The tracer collect in the bone over a few hours, then the scans are done. Bone scan looks for cancer that may have spread (metastasized) from other place to the bone. A special scanner pictured the material where it collect, and there areas are called hot spots.

B) Pet scan: Pet scan usually use a form of radioactive sugar. Body cells take in different amounts of the sugar, depending on how fast they are growing, cancer cells, which grow quickly, are more likely to take up large amounts of the sugar than normal cells. PET is actually a combination of nuclear medicine and biochemical analysis. Used mostly in patients with brain or heart condition and cancer, PET helps to visualize the biochemical changes taking place in the body, such as metabolism (the process by which cells change food into energy after food is digested and absorbed into the **blood) of the heart muscle.**

C) Ultrasound : Ultrasound (US) are mechanical waves with frequencies higher than 15kHz, beyond the audible range of the human ear. Parameters such as the intensity of the acoustic waves or the ultrasound dose determine different effects on the treated sample. Low frequency ultrasound have been used since the 1950s in physiotherapy to treat tendinitis or bursitis. Tumors of the hallow organs such as urinary bladder cancer be diagnosed easily by the ultrasonographic technique. Ultrasound has also been used for the diagnosis of the tumourous condition of the abdominal organs of domestic and wild animals. The record produce is called an ultrasonogram or an echogram. Example are : -Ultrasound of the kidneys. -Ultrasound of the liver, gallbladder and pancreas. -Ultrasound of the breast.

D) X-rays – The identity of x-rays was initially mysterious, their connotations including morbidity and the otherworldly. Gradually they became routine, finding a place in the high-energy end of the electromagnetic spectrum. The deleterious effects of X-rays on bone have been recognised for almost a century and continue to be seen today because of improved survival in patients treated for malignancy with radiotherapy with or without other treatments.

4) Biopsy: Biopsy is the test in which the doctor remove a sample of tissue from the patient's body from the diagnosis cancer. Alternate means for obtaining pathology results can include excision of involved lymph nodes, cytology from effusions or ascites, or procedures such as endoscopy, bronchoscopy, mediastinoscopy, pleuroscopy, or Colonoscopy. The genetic profile of solid tumours is currently obtained from surgical or biopsy specimens; however, the latter procedure cannot always be performed routinely owing to its invasive nature. Biopsy is a surgical removal of small piece of tissue for microscopic examination for the cancer of cells. There are three ways tissue can be removed for biopsy:

A) Endoscopy : In this process, A thin, flexable tube with a tiny camera on the end is inserted into the body cavity. This allows the doctor to view the abnormal area. For example: Colonoscopy, bronchoscopy

B) Needle biopsy: The doctor takes a small tissue sample by inserting a needle into abnormal area. Different types of needles are used, Ex:Vim Silverman needle for liver biopsy. This method is used to spinal taps, bone marrow aspirations, prostate and liver and breast biopsies.

C) Surgical biopsy :A procedure in which a cut is made through the skin to remove abnormal tissue so it can be checked under a microscope for signs of disease. The two types of surgical biopsy are incisional biopsy, in which part of a lump or a sample of tissue is removed, and excisional biopsy, in which an entire lump or suspicious area is removed. Also called open biopsy.

Causes of cancer: Cancer can be cause due to following cause Infectious which include bacteria, parasite, viruses environmental that include factors like metals, Smoking, alcohol, electromagnetic radiation, physical inactivity, reproductive hormones, diet, and physical activity are all investigated. There is not a single causes of cancer. Research believe that it is the interactivity of multiple factors together that generates the cancer. The factor may be environmental, genetic or many others. The overall five years survival rate for childhood cancer is about 80% while in adults cancer the surviving rate is 68% as per researchers there are many and repitative risk factors to exposure which include. Cancer grow out normal cells in the body. Normal cells multiply when the body needs them and die when the body doesn't need them. There are many causes which may cause cancer in different body parts like mainly 22% death are due to tobacco consumption, 10% of death are due to poor diety, obesity, lack of physical activity, excessive

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drinking of alcohol or other fats include certain exposure to ionizing radiation, environmental pollutants and infection. Cancer has a variety of causes such as :

1.Benzene and other chemicals.
2.Environmental toxins, such as certain poisonous mushroom and a type of poison that can grow on peanut plants (aflatoxins).
3.Excessive sunlight exposure
4.Genetic problem
5.obesity, viruses

Symptoms of cancer: Symptoms of the cancer depends on the type and Location of cancer. For example lunch cancer can causes coughing, of breath or chest pain, colony cancer often causes diarrhea, constipation and blood. The following symptoms can occur the most cancer.

1.Chills
2.Fatigue
3.Fever
4.Loss of appetite
5.Malasic
6.Night sweets
7.weight Loss
8.Thickening or lump in the body
9.Cough or hoarsness that does not go away
10.Swallowing
11.Unexplained bleeding or discharge
12.obvious change in wart or mole
13.unusual upset stomach or difficulty
14.Any sore that does not heal
15.Recurring Infection
16.pain in the bones and other parts of body 9
17.Lump or area of thickening that can be felt under the skin

How it begins the cancer:

Cell changes and cancer:

Our body is made up of small units called cells and more than 100,000,000,000,000 cells combine to makes our body. All types of cancer firstly start in cells by changes. Usually, our body has the right number of cells because the cells produce the signals. Instead the diversity of such damage within the metabolic program of cancer cells can dictate by what means proliferatetive rewiring is driven, and can also impart heterogeneity in the metabolic dependencies of the cells. Phenotypic and functional heterogeneity arise among cancer cells within the same tumor as a consequence of genetic changes But they are also other type of cancer which start from different pathway like blood cells this cancer is called as leukemia, and they not make a solid lump.

Genes and cells division:

Our body has different cells for a different job but they all are similar. We propose that this pattern reflect gene expression during particular phases of the cell division cycle. Understanding the control of the patterns and numbers of cell division in developing plant and animals is central to understanding the mechanism of development. A long string DNA ((Deoxyribonucleic acid) called genes which contains a coded message which tells the cells how to behave or divided. Chromosomes are made up of thousands of genes. Findings showed a poor understanding of the processes by which genetic information is transferred and a lack of basic knowledge about the structures involved (gene, chromosome, cell).Normal cells stop dividing when there is genetic damage or condition are not favourable. Cancer

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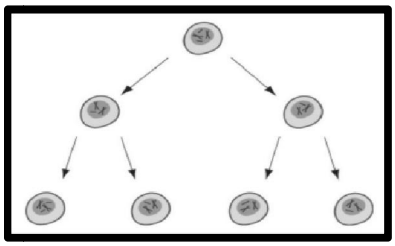
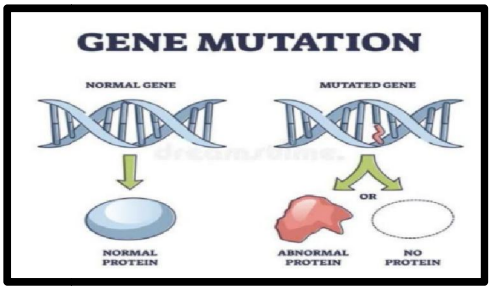
cells continue to divided even when condition are not appropriate. One cells divided into 2 identical cells, and then 2 cells divided into 4 and so on.



Fig(1). Cell Division

Genes changes within cells (Mutation):

When a cell is dividing mainly, a mutation occurs in this step but also by the chemical changes which are coming from outside like tobacco smoke, and it is happening by chance. It typically takes more than one gene mutations for a cells to become a cancer cells.cells have the same needs as normal cells. Cancer cells need nutrients and oxygen from blood vessel to survive and grow. cancer genes that indicates that mutations in more than 1% of genes contribute to human cancer. We found strong correlations between mutation number, age at which cancer was diagnosed and cancer histological grade, and observed multiple mutational signatures, including one present in about ten percent of tumours. Mutation of genes may mean that a cell stops producing proteins that require cell divisio and may produce too many proteins by which the cell division occurs rapidly and form lump or tumor, the tumor is made up of millions of cancer cells. A genetic mutation is a change to a genes DNA sequence to produce something different. A mutation is a heritable change in the genetic material that is not due to genetic recombination. Mutation alters the structure or number of genes or entire chromosomes.



Fig(2). Genes changes within cells (Mutation)

How cancer Grows:

Cancer cells can break away from the original tumor and travel through the blood or lymph system to distant location in the body, where the exit the vessel to from additional tumors.Gene mutations in cancer cells interfere withthe normal instructions in a cell and can cause it to grow out of control or not die when it should. A cancer can continue to grow because cancer cells act differently than normal cells. Cancer cells are different from normal cells because they:

1.Divided out of control.
2. are immature and don't develop into mature cells with specific jobs.
3.avoid the immune system.
4.ignore signals that tell them to stop dividing or to die when they should.
5.don't stick together very well and can spread to other parts of the body through the blood or lymphatic system
6. grow into and damage tissues and organs

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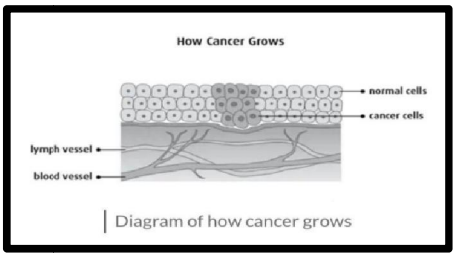

Fig (3). How cancer Grows

But as a tumor grows, it needs more blood to bring oxygen and other nutrients to the cancer cells. So cancer cells send signals for a tumour to make new blood vessel. This is called angiogenesis and it is one of the reasons that tumor grows and get bigger. cancer growth can frequently be viewed as an aberrant version of normal tissue homeostasis. cancerous growth appears in many instances to recapitulate the stem cell → committed progenitor → differentiated cell procession that occurs during normal tissue reproduction. It is also allows cancer cells to get into the blood and spread more easily to the other parts of the body. There is a lot of research that is looking at using drugs that stop blood vessel growth (called angiogenesis inhibitors), causing a tumour to stop growing and even shrink.

How it spread:

As the tumor grows, the cancer cell are carried with the lymphatic system or bloodstream to other parts of body. Then the cancer cell may bedeveloped into new tumor and it is called metastatic. Cancer cells spread through the body in a series of steps. These steps include:

1.Growing into, or invading, nearby normal tissue.
2.moving through the walls of nearby lymph nodes or blood vessel.
3.traveling through the lymphatic system and bloodstream to other parts of the body.
4.stopping in small blood vessels at a distant location, invading the blood vesselwalls, and moving into the surrounding tissue.
5.growing in this tissue until a tiny tumor forms.
6.causing new blood vessels to grow, which creates a blood supply that allows the metastatic tumor to continue growing

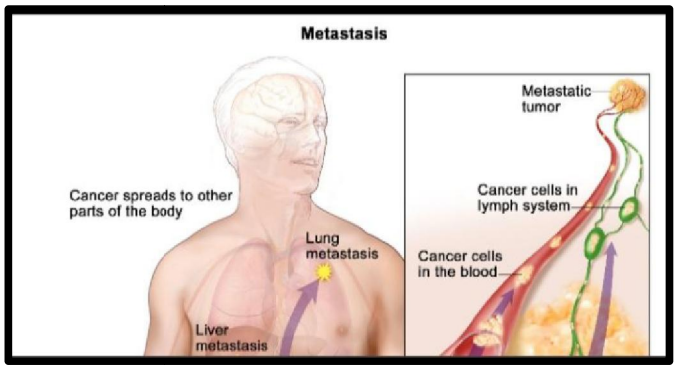

Fig (4). How it spread

Most of the time, spreading cancer cells die at some point in this process. But, as long as conditions are favorable for the cancer cells at every step, some of them are able to formnewtumors in other parts of the body. Metastatic cancer cells can also remain inactive at a distant site for many years before they begin to grow again, if at all.

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Side effect of cancer treatment:

The treatment of cancer can affect also to the normal cells, tissue and organs. Side effects are the effects of treatment which are shown in therapeutic effect. Common side effects are shown below.

1.Anemia
2.Edema
3.Fatigue
4.Urinary and bladder problems
5.skin and nail changes
6.Nausea and vomiting
7.Infection and Neutropenia
8.Fertility issue in boys and girls
9.Fertility issue in girls and women
10.Mouth and thorat problem
11.Memory or concentration problem
12.organ related inflammation and immunotherapy
13.Lymphedema
14.Sexual health issue in both men or women
15.Bledding and Bruising (Thrombocytopenia)
16.Diarrhea
17.Delirium
18.Loss of appetite
19.Pain

Treatment of cancer:

There are various types of cancer treatment which depends upon the cancer type and Howto advance it is. Entities such as the type of cancer, its site, and severity, guide to select treatment options and it's progress. The most widely used traditional treatment method are Chemotherapy, Radiotherapy, and surgery, while modern modalities include Harmone therapy, Anti-angiogenic, stem cell therapy, immunotherapy and targetad therapy.

Chemotherapy:. Chemotherapy is of the principal modes of the treatment of cancer patient. It was first used to treat advanced lymphoma in the late 1940s after it became known that the use of mustard gas in the World War I caused leukopenia. Chemotherapy literally means the use of chemicals in order to inhibit malignant cells or the infectious agents of a disease such as micro-organisms without much affecting the host cell. The treatment can broadly divided into two categories- Cancer Chemotherapy and antimicrobial Chemotherapy.

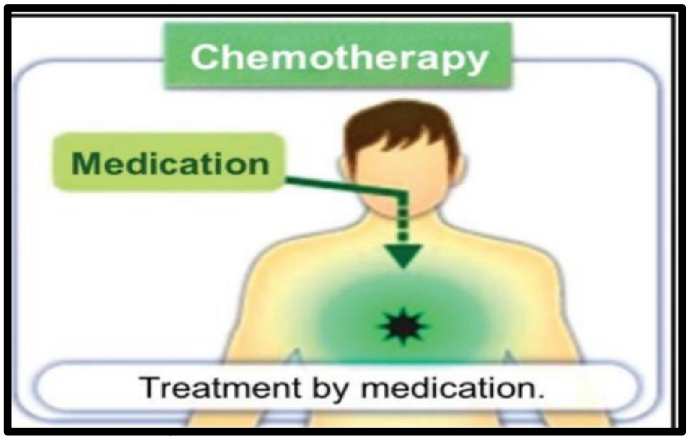

Fig (5). Chemotherapy

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Radiotherapy:

Treatment of an invasive cancer by radiotherapy consists of ionization radiation that delivers a lethal dose to a defined tumor Volume. Radiation therapy uses high energy particle or waves to destroy or damage cancer cells.High energy radiation damage genetic material (deoxyribonucleic acid, DNA) of cells and thus blocking their ability to divide and proliferate further. Cancer cells in general are not as efficient as normal cells in repairing the damage caused by radiation treatment resulting in differential cancer cell killing. .

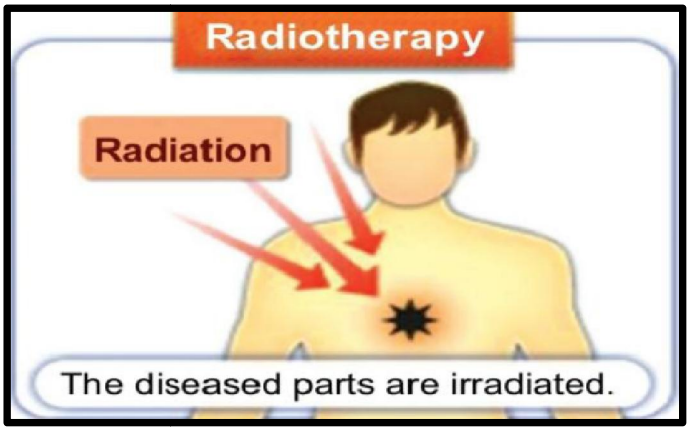

Fig (6). Radiotherapy

Surgery Therapy:

prevent or reduce the diseases spread and remove cancer from the body, surgeon may remove lymph nodes. Surgery can be used to diagnose, treat, or even help to prevent cancer in some cases. Most people with cancer will have some type of surgery. This treatment may be considered after failure of 3 to 6 month of conservative treatment or in an athlete or dancer who wants to get back to activity faster. This approach emphasize the continued strong collaboration between surgeon and oncologist, and is the likeliest route to improving treatment options for this difficult disease. is often a part of a treatment plan when a person has a cancerous tumor. Also, a surgeon may remove lymph nodes to reduce or prevent the disease's spread.

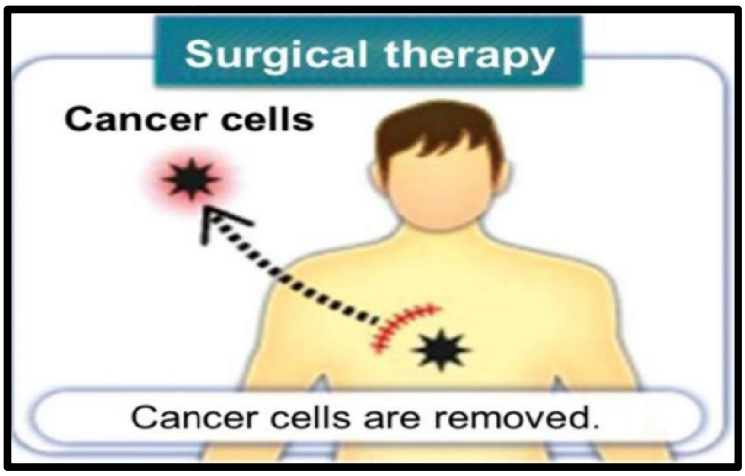

Fig (7). Surgery Therapy

Hormone Therapy:

In this therapy, hormones are used to treat cancer, such as prostate and breast to stop and glow growth. And the type of therapy depends upon factors such as age of patients, the type and size of the tumor, and many of the other factors as well. Hormone therapy is an effective and non toxic therapy for oestrogen and progesterone receptor-positive breast

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cancer and for prostate cancer. In female, if an individual is going through the treatment for breast cancer, then she will have regular checkups. In male, if an individual is receiving endocrine therapy for prostate cancer, then he has to go for regular prostate specific antigen (PSA) test. When hormones play a significant role, as with prostate and breast cancers, this is a common approach.

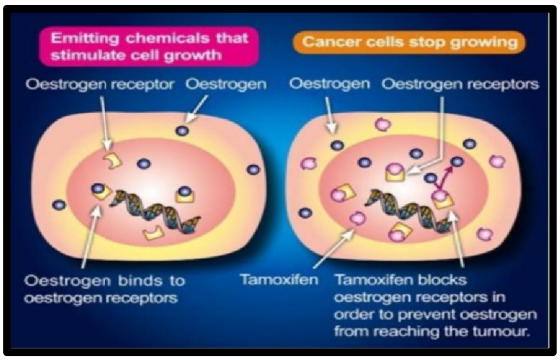

Fig (8). Hormone Therapy

Immunotherapy:

Also known as biotherapy, biological response therapy and biological therapy is outline to improve the body's immune system or in order to eliminate the cancer. The immune system is made up of WBC and tissue of lymph node and helps to provide the strength to the body to fight against the diseases and Example: adoptive cell and checkpoint inhibitor treatment etc.Beside the existing therapy, various investigational immunotherapy candidates are currently undergoing active development, such as therapeutic cancer vaccines and CAR-T cell therapy, providing better option for treatment of cancer in the near future. uses medications and other treatments to boost the immune system and encourage it to fight cancerous cells.

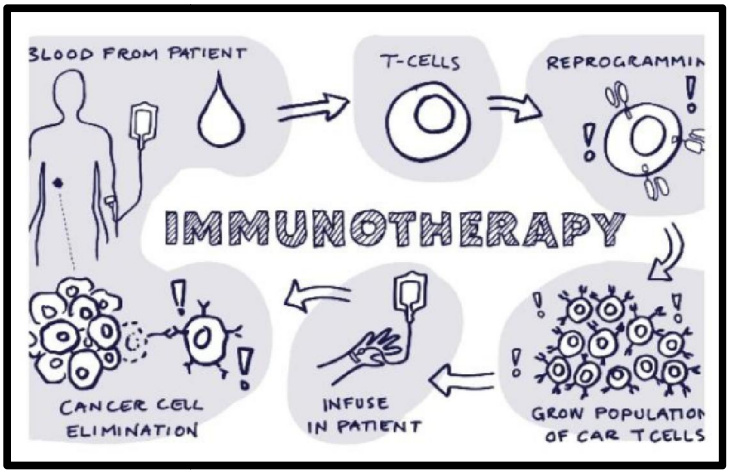

Fig (9). Immunotherapy

Stem cell therapy:

Recently stem cell therapy are assumed to be used to safe and effective treatment. Even application of stem cell are being investigated in clinical trials, including the use of stem cells to generate damage tissue- such as heart, skin, bone, spinal cord, liver, pancreas and cornea or to treat blood or solid organ cancers. In this therapy stem cells are restore in cancer patients, which are destroy by very high doses of radiation or chemotherapy. Stem cells have self-renewal capacity with highly replicative potential multilineage differentiation capacity.Lab technicians then strengthen the cells and put them back into the body. involves removing cells, such as red or white blood cells, that chemotherapy or radiation has destroyed.

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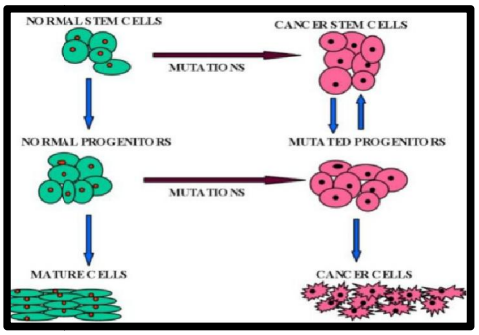

Fig (10). Stem cell therapy

Targeted Therapy:

Targeted Therapy is a newer type of cancer treatment that uses drugs or other substances to more precisely identify and attack cancer cells, usually while doing little damage to normal cells. Monoclonal antibodies and small molecule inhibitor are two main type of targeted Therapy. Targeted Therapy utilizes drugs that have less severe side effect and only tumor cells are affected by drugs. Genetic mutations and resultant changes in cellular protein can cause cells to divide too rapidly, resulting in malignant growth.

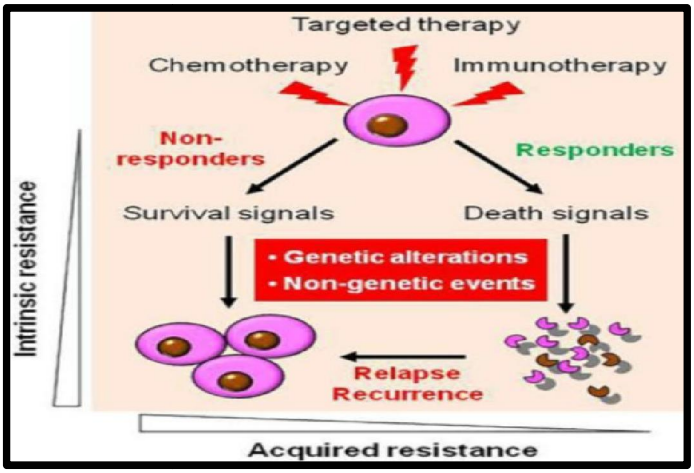

Fig (11). Targeted Therapy

Anti-angiogenic therapy:

In 1997, Folkmanhyphothesized that anti angiogenic therapy would be beneficial for cancer treatment since it could disrupt the pre-existing blood vessel and avoid the formation of new ones, decreasing oxygen and nutrients supply to cancer cell, and consequently decleratingtumor growth. We concluded that the combinatory targeting of alternative effectors of angiogenic pathways might be a putative solution for anti angiogenic therapy.

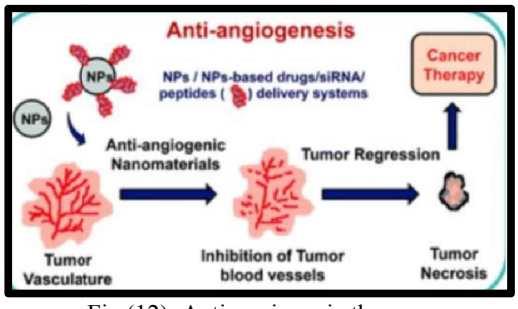

Fig (12). Anti-angiogenic therapy

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II. CONCLUSION

In this review paper cancer and treatments of cancer were illustrated in detail like sign or symptoms, diagnosing tests and how the cancer cause, spread, The cancer treatments include surgery, immunotherapy, chemotherapy, targettherapy, hormone therapy, radiation therapy, stem cell transplant, precision medicine. These therapies include many drugs, like antibiotics, which are mainly used in chemotherapies, different targeted systems to treat cancer directly like nanotechnology, microspheres, etc After a lot of research about these therapies, scientists prefer precision medicines for the betterment of cancer treatment because in this therapy doctor knows all about the genetic information of cancer cells, then it makes the treatment quite easy and with the help of this information problems/side effects can be decreased. Long way to go Long way to go in optimizing the utilization of these therapies minimizing their complexity and toxicities and to learn how to integrate them into the current standard of care. Furthermore, there are many challenges ahead in incorporating them into the healthcare systems of an economically sustainable manner. Therefore, clinical researchers are beginning to crisp on managing and predicting these toxicities and monitoring their long-term outcome. The cancer treatment is to stop tumor growing with the minimum side effects to other normal tissues. Radiotherapy is one of the most important techniques that improved the therapeutic results. However, further validation of all this approaches are still needed as authentic strategy also display relevant therapeutic properties under normal conditions and to determine whether it has advantages over the well-established use of chemotherapeutics, some of which are progressing through clinical trials. the use of immunotherapy for those patients with recurrent and/or refractory disease. Treatment is initiated when the disease becomes symptomatic, and survival is high following treatment. Lot of advanced treatments as mentioned in the review is available for the treatment of Leukemia. Two significant revolutions have altered paradigms for cancer treatment in recent years: focusing on practical changes in oncogene-driven tumours as well as immuno-oncology. significant obstacles are still going on in the two areas of cancer treatment.

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