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Treatment Profile, Drug Management, Diet & Thearpy Used As During Treatment Of Cancer.

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Abstract-
Cancer is one of the most frequent and distressing diseases. The mortality caused by cancer and its prevalence has increased during the last 50 years. Various types of cancer are reported in literature such as Carcinoma, Sarcoma, Lymphoma, leukemia, Blastoma and Germ cell tumor. There is a continuous need for new and better cancer therapies. A few years ago, surgery and radiotherapy were the only effective way to fight tumor growth. Now various therapies for the treatment of cancer have been developed including chemotherapy, radiation therapy, proton therapy, thermotherapy, Photodynamic therapy, laser therapy, sentinel lymph node biopsy, cryotherapy and differentiation therapy.

Key Words- *Introduction, Various types of cancer, Cancer therapies, Chemotherapy, Radiation etc.*

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I. Introduction:-

Cancer is a group of diseases involving abnormal cell growth with the potential to invade or spread to other parts of the body[1].These contrast with benign tumors, which do not spread[2]. Possible signs and symptoms include a lump, abnormal bleeding, prolonged cough, unexplained weight loss, and a change in bowel movements. While these symptoms may indicate cancer, they can also have other causes.[3] Over 100 types of cancers affect humans.

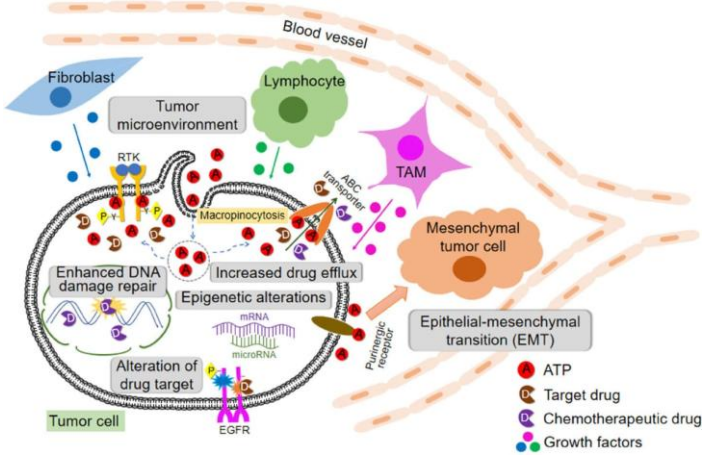
Tobacco use is the cause of about 22% of cancer deaths. Another 10% are due to obesity, poor diet, lack of physical activity or excessive drinking of alcohol[4'5]

In the developing world, 15% of cancers are due to infections such as Helicobacter pylori, hepatitis B, hepatitis C, human papilloma virus infection, Epstein–Barr virus and human immunodeficiency virus (HIV).

Approximately 5–10% of cancers are due to inherited genetic defects.[6]

The five-year survival rate in the developed world is on average 80%.[7] For cancer in the United States, the average five-year survival rate is 66%.[8]

In 2015, about 90.5 million people had cancer.[9] As of 2019, about 18 million new cases occur annually.[10] Annually, it caused about 8.8 million deaths (15.7% of deaths).[11] The most common types of cancer in males are lung cancer, prostate cancer, colorectal cancer, and stomach cancer.[12] In females, the most common types are breast cancer, colorectal cancer, lung cancer, and cervical cancer.[13] If skin cancer other than melanoma were included in total new cancer cases each year, it would account for around 40% of cases.[14,15]



Symptoms: Lump, abnormal bleeding, prolonged cough**,** unexplained weight, change in bowel movements.
Cause: The majority of cancers, some 90–95% of cases, are due to genetic mutations from environmental and lifestyle factors. The remaining 5–10% are due to inherited genetics.[16]

Common environmental factors that contribute to cancer death include tobacco use (25–30%), diet and obesity (30–35%), infections (15–20%), radiation (both ionizing and non-ionizing, up to 10%), lack of physical activity, and pollution.[17]

Risk factors: Tobacco**,** obesity**,** poor diet**,** lack of physical activity**,** excessive alcohol**,** certain infections

- **Treatment:** Radiation therapy, Surgery, Chemotherapy, Targeted therapy[18]

Diet Chart for Cancer

Early Morning: Drink Lukewarm water 1-2 glass in Empty Stomach, before Brushing teeth.

Diet Plan:

TIMING	DIET PLAN (VEGETARIAN)
Breakfast (8:30AM)	1 glass of Milk with turmeric (1 tsp)+1-2 Fiber rich biscuit or daliya (Salted)/Poha/ Upma(Suji)/Sprouts/Oats+1 Plate Fruit Salad (Orange, Papaya, Grapes, Banana, Apple, Muskmelon , Avocado
Lunch (12:30-01:30PM)	1-2 Thin Chapti/Roti+1/2 Bowl Rice (Mand removed)+1 Bowl Green Vegetable (Boiled)+1 Bowl Dal (Dilute Water)
Snacks (3:30-4:00PM)	1 Glass Milk with 1 tsp powder+ 1-2 Fibre rich biscuit or Daliya, Upma (Sujji)/Vegetable Soup.
Dinner (7:00-8:00)	1-2 Thin Chapti/Roti+1/2 Bowl Green Vegetable (Boiled)+1 Bowl Dal(Dilute with water)
30 Minute before Sleep (10:00PM)	1 Glass Milk + 1 tsp Turmeric + Ashwagandha Churna + Shatavri Churna.

Pathya (Do's;)

Cereals: Old rice, maize, Millet Oats, Wheat, barely.

Pulses: Green gram (moong dal) , pigeon pea (arahara), Lentil (mansoor Dal)

Fruits & vegetables : Bottle gourd (Lauski) ridge gourd (tori), pointed grourd (parwal) , Bitter gourd (Karela) , pumpkin (Kaddu) , cauliflower, cabbage, broccoli, turnip, radish ,sweet potato, bean, carrot, tomato, Seasonal Green vegetables, carrot, radish , cucumber Khera , Orange , Papaya, grapes , Avocado , Apple.

Other: Ginger, Garlic, lemon, ripe jack fruit .

Life style:

Yoga pranayam and meditation: 1. Bhastrika 2. Bahyapranayaam 3 Anulom Vilom 4 Bharamari 5. Udgeeth 6 Ujjaayi 7 Pranav Jap

Asanas : Light Exercise

Apathya (Don's)

Cereals: Refined Flour (maida), new rice.

Pulses: Peas (Matar), black gram (desi chana), kidney Bean, Chikpea.

Fruits & vegetables: Brinjal, jackfruit.

Other: Spicy food, Kadhi, Curd, cheese, Excess salt

Strictly Avoidable : oil spicy food, Non – Veg & Non – Veg Soup, ghee, excess salt, cold drinks, bakery products, alcohol, fast food , pickles , soft drinks, canned foods, junk foods .

Life Style: Adhyasana (Repetition of food intake after meals, within 1-2 hours repeating) Physical Exercise (inter course) & excess heat / summer, suppression of natural urges, anger.

Yoga Pranayan and meditation: As per doctors advise

Asanas : As per doctors advise

Advice: 1 Cup herbal tea , is issued or consumed by patients, in case if he/she is habitual of tea and coffee (It is substitute for it).

Do as regular:

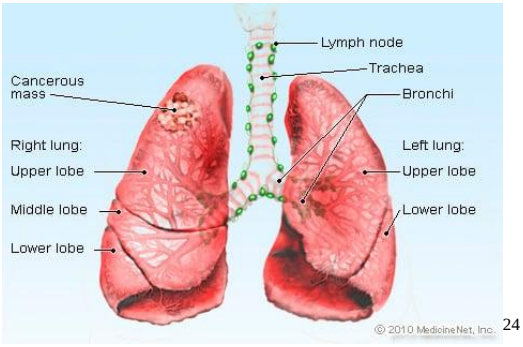
1. Get up with the sunrise [5:30-6:30 AM]
2. Brush the teeth twice a day in the morning and before going to bed.
3. Scrape the tongue daily.
4. Meditate and do yoga.
5. Eat fresh light warn food slowly, in peaceful place with silent positive and happy mind.
6. Eat 3-4 times at regular time in a day . Don't skip meals & avoid overeating. Fast once in a week.
7. Eat leaving $1/3^{rd}$ or $1/4^{th}$ of stomach empty (full satisfaction of meal can be consider as one 's khuchi/stomach)
8. Chew food properly and slowly.
9. Walk 3-5 minutes after talking food.
10. Talk a short walk after meal and sleep at proper time in night [9-10 PM].

Type of cancer:
Lung cancer

- Leukaemia (Blood cancer)
- Brain tumours.
- Breast Cancer
- Melanoma
- Kidney Cancer
- Liver Cancer
- Non-Hodgkin Lymphoma
- Pancreatic Cancer
- Prostate Cancer
- Thyroid Cancer
- Bladder Cancer

1. Lungs Cancer:-

Lung cancer, also known as bronchial carcinoma[19],Since about 98–99% of all lung cancers are carcinomas,Lung cancer or lung carcinoma is a malignant lung tumor characterized by uncontrolled cell growth in the lung tissues [20].The highest rates are in North America, Europe, and East Asia, with over a one third of new cases in China. The rates in Africa and South Asia are much lower [21]Worldwide in 2012,lung cancer occurred in 1.8 million people and resulted in 1.6 million deaths [22].This makes it the most common cause of cancer related death in men and second most common in women after breast cancer [23]



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Symptoms: Coughing (including coughing up blood), weight loss,shrothness of breath,chest pain,[25]

Cause: Cancer develops after genetic damage to DNA and epigenetic changes. Those changes affect the cell's normal functions, including cell proliferation, programmed cell death (apoptosis), and DNA repair. As more damage accumulates, the risk for cancer increases[26]

Smoking: Tobacco smoking is by far the main contributor to lung cancer[27]
Across the developed world, 90% of lung cancer deaths in men and 70% of those in women during 2000 were attributed to smoking[28] smoking accounts for about 85% of lung cancer cases[29]

Asbestos: Asbestos can cause a variety of lung diseases such as lung cancer. Tobacco smoking and exposure to asbestos

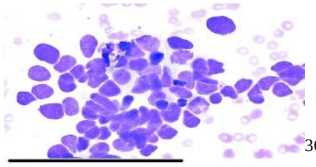
Genetics: About 8% of lung cancer cases are caused by inherited (genetic) factors[30]
likely due to a combination of genes.Polymorphisms on chromosomes 5, 6, and 15 have been idenfied and are associated with an increased risk of lung cancer[31]

Type:

- Small-cell lung carcinoma (SCLC),
- Non-small-cell lung carcinoma (NSCLC)[32]

1. Small-cell lung carcinoma (SCLC):
Small-cell carcinoma is a type of highly malignant cancer that most commonly arises within the lung[33]

Compared to non-small cell carcinoma, small cell carcinoma has a shorter doubling time, higher growth fraction, and earlier development of metastases[34]
Ten-year relative survival rate is 3.5%; however, women have a higher survival rate, 4.3%, and men lower, 2.8%[35]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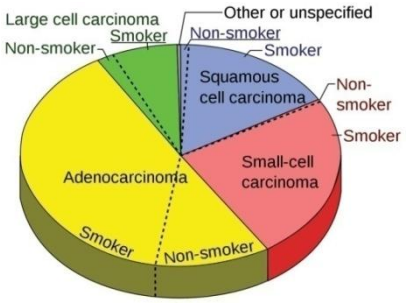
2**. Non-small-cell lung carcinoma (NSCLC):**
Non-small-cell lung carcinoma (NSCLC) is any type of epithelial lung cancer other than small-cell lung carcinoma (SCLC). NSCLC accounts for about 85% of all lung cancers[37,38]
subtype of NSCLC:-The most common types of NSCLC are-

- squamous-cell carcinoma,
- large-cell carcinoma,
- adenocarcinoma,



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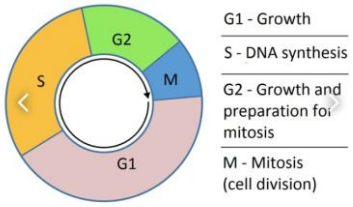
- **Treatments:** Surgery, Chemotherapy, Radiation,[39]

Surgery[40]: Surgery is an invasive technique with the fundamental principle of physical intervention on organs/organ systems/tissues for diagnostic or therapeutic reasons.
The act of performing surgery may be called a surgical procedure, operation, or simply "surgery". In this context, the verb "operate" means to perform surgery. The adjective surgical means pertaining to surgery; e.g. surgical instruments or surgical nurse
Chemotherapy: Chemotherapy (often abbreviated to chemo and sometimes CTX or CTx) is a type of cancer treatment that uses one or more anti-cancer drugs (chemotherapeutic agents) as part of a standardized Chemotherapy regimen[41]



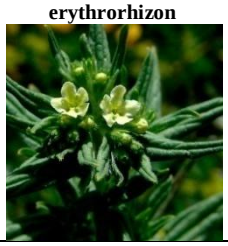
The Four phases of the cell Cycle G1 - the initial growth phase S- The phase in which DNA is synthesised. G2 – the second growth phase in preparation for cell division M- mitosis where the cell divides to produce two daughter cells that continue the cell cycle
Some chemotherapy drugs are used in diseases other than cancer, such as in autoimmune disorders[42] and noncancerous plasma cell dyscrasia
Radiation therapy: Radition therapy or radiotherapy, often abbreviated RT, RTx, or XRT, is a therapy using ionizing radiation, generally provided as part of cancer treatment to control or kill malignant cells and normally delivered by a linear accelerator.
Total body irradiation (TBI) is a radiation therapy technique used to prepare the body to receive a bone marrow transplant.
Radiation therapy is commonly applied to the cancerous tumor because of its ability to control cell growth. Ionizing radiation works by damaging the DNA of cancerous tissue leading to cellular death.

Allopathic medicine treating lungs cancer

S no.	Drug name	Category name	Mode of action	Uses	Remarks
1.	Cyclophosphamide,	Alkylating agents	Mainly due to cross-linkage of strands of DNA and RNA ,and to inhibition of protein synthesis,	Used to a various type of vancer lung, breast, bladder, stomach, lymphoma, etc.	Treat hodgkin's lymphoma
2.	Doxorubicin,	Anthracycline	Intracts with DNA by intercalation and inhibition of macromolecule biosynthesis	Commonly used for lung ,bladder, leukemia, stomach,	Decreased visual acuity
3.	Vincristine,	Plant alkaloids	Binding to the tubulin protein	Chemotherapy drugs to slow or stop cancer cell growth	Treatment for lung cancer
4.	Vinorelbine,	Vinca alkaloids	Through binding to microtubular protein in the mitotic spindle	Treat certain type of non-small cell lung cancer (NSCLC).	Treat breast cancer
5.	Etoposide	Podophyllotoxin derivatives	Inhibits DNA synthesis by forming a complex with topoisomerase 11 and DNA	Treat ovarian and lung cancer, lymphoma leukemia,	Used for hemophagocytic lymphohistiocytosis
6.	Cisplatine	Alkylating agents	The drug induces its cytotoxic properties through binding to nuclear DNA and subsequent interference with normal transcription	Treat testicular,ovarian,bladder, hear, neck, lung, and cervical cancer	It may also be used to treat other cancers
7.	carboplastin	Antineoplastin, Alkylatin agent	Undergoes activation inside cells and forms reactive platinum complex	Treat ovarian and lung cancer	Preparation for a stem cell or bone marrow transplant
8.	Alectinib	Kinase inhibitors	Inhibits ALK and RET protein by preventing their phosphorylation	It works by blocking the action of an abnormal protein that signals cancer cells to multiply	Treat non-small cell lung cancer
9	Alimta	Antineoplastin,Antimetabolite	Inhibits at least three enzyme involve in the folate pathway	Treat non-small cell lung cancer NSCLC).	Alimta is sometimes used in combination with other cancer medicines
10	Brigatinib	Kinase inhibitors	Brigatinib is an inhibitor of ALk and mutated EGFR.	It works by blocking the action of an abnormal protein that signals cancer cells to multiply	Treat certain type of non-small cell lung cancer (NSCLC).
11	Critinib	Kinase inhibitor	Inhibits cell proliferation	proliferation Treat certain type of lung cancer Lung cancer	Antineoplastic agent

Herbal medicines treating lungs cancer

S no.	Common name /Family name	Plant name	Chemical constituents	Plant parts	Uses	Remarks
1.	**Angelica sinesis / Apiaceae**	**Female ginseng** 	**- ferulic acid, Z-ligustilide, butylidenephthalide and various polysaccharides.**	**Root, seed, fruit,**	**Chinese medicine to enrich blood, promote blood circulation and modulate the immune system**	**Enrich blood**
2.	**Bupleurum falcatum / Apiaceae**	**Bupleurum falcatum** 	**saikosaponins, polysaccharides, volatile oils, flavonoids, polyacetylenes, lignins, and coumarins**	**Root**	**Colds, fever, malaria, digestive disorders, chronic liver diseases, and depression**	**Protect the liver from damage by regulating calcium levels within cells**
3.	**Curcuma longa / Zingiberaceae**	**Curcuma longa**	**Demethoxycurcumin, and bisdemethoxycurcumin**	**Root**	**Improve heart health and prevent against Alzheimers and**	**Treat brain tumor**

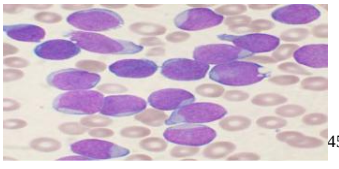
					**cancer**	
4.	**Lithospermum radix / : Boraginaceae**	**Lithospermum erythrorhizon** 	**Fathy acid, proteins, carbohydrates, pigments, minerals, shikonin, shikalkin, alkaloid, lavonoids,**	**root**	**herbal medicine for treatment of various abnormal skin conditions**	**antiseptic and soothing effect**
5.	**Tripterygium wilfordil / Celastraceae**	**Tripterygium wilfordii** 	**Triptolide Celastrol Tripchlorolide Tripdiolide**	**Roots**	**traditional medicine for promoting blood circulation, killing parasites, regulating immunity,**	**rheumatoid arthritis and psoriasis**
6.	**Scutellaria bartata / Lamiaceae**	**Scutellaria barbata** 	**hexahydrofarnesylacetone), 3,7,11,15-tetramethyl-2-hexadecen-1-ol , menthol) and 1-octen-3-ol**	**flower; leaves**	**treat bacterial infections, hepatitis, and tumors**	**used as a diuretic**
7.	**Solanum incanum / Solanaceae**	**Solanum incanum** 	**steroidal glycoalkaloids, lignans, coumarin glucoside, simple phenolics**	**fruits**	**sore throat, angina, stomach-ache, colic, headache, painful menstruation**	**onchocerciasis, pleurisy, pneumonia and rheumatism**

2 . Leukemia (Blood Cancer):

Leukemia(also spelled leukaemia and pronounced /luːˈkiːmiːə/[43] loo-KEE-mee-ə), is a group of blood cancers that usually begin in the bone marrow and result in high numbers of abnormal blood cells[44] These blood cells are not fully developed and are called blasts or leukemia cells.

A cancer of bloodforming tissues,hindering the body's ability to fight infection.

Leukaemia is cancer of blood-forming tissues, including bone marrow. Many types exist such as acute lymphoblastic leukaemia, acute myeloid leukaemia and chronic lymphocytic leukaemia.

 [45]

Symptoms: Bleeding, Bruising, Fatigue, Fever, Increased risk of infection,[46]

Cause: There is no single known cause for any of the different types of leukemias. The few known causes, which are not generally factors within the control of the average person, account for relatively few cases[47] The cause for most cases of leukemia is unknown. The different leukemias likely have different causes.

Leukemia, like other cancers, results from mutations in the DNA.

Genetic conditions: Some people have a genetic predisposition towards developing leukemia. This predisposition is demonstrated by family histories and twin studies[48]

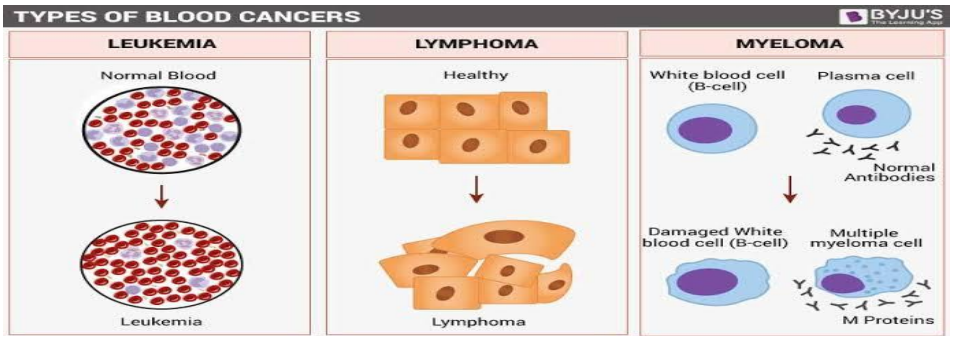
Radiation: Large doses of Sr-90 emission from nuclear reactor accidents, nicknamed bone seeker increases the risk of bone cancer and leukemia in animals and is presumed to do so in people[49]

Type of Leukemia (Blood Cancer):-

1. Lymphoma 2. Myeloma

1. Lymphoma: This is a cancer of the lymph system. This network of vessels includes your lymph nodes, spleen, and thymus gland. The vessels store and carry white blood cells to help your body fight infections.

2. Myeloma: This is a cancer of the plasma cells in bone marrow. Plasma cells are a type of white blood cell that makes antibodies



Risk factors: Smoking, stress, family history, ionizing radiation ,some chemicals, Down syndrome[50,51]

Treatment: Chemotherapy, Radiation therapy , Targeted therapy , Bone marrow transplant , Supportive care[52,53]

Chemotherapy: As chemotherapy affects cell division, tumors with high growth rates (such as acute myelogenous leukemia and the aggressive lymphomas, including Hodgkin's disease) are more sensitive to chemotherapy, as a larger proportion of the targeted cells are undergoing cell division at any time. Malignancies with slower growth rates, such as indolent lymphomas, tend to respond to chemotherapy much more modestly[54]

Radiation therapy: Radiation therapy works by damaging the DNA of cancerous cells. This DNA damage is caused by one of two types of energy, photon or charged particle. This damage is either direct or indirect ionization of the atoms which make up the DNA chain. Indirect ionization happens as a result of the ionization of water, forming free radicals, notably hydroxyl radicals, which then damage the DNA.

Targeted therapy: Targeted therapy or molecularly targeted therapy is one of the major modalities of medical treatment (pharmacotherapy) for cancer[55] others being hormonal therapy and cytotoxic chemotherapy. As a form of molecular medicine, targeted therapy blocks the growth of cancer cells by interfering with specific targeted molecules needed for carcinogenesis and tumor growth[56] Rather than by simply interfering with all rapidly dividing cells (e.g. with traditional chemotherapy).

Bone Marrow transplantion: Hematopoietic stem-cell transplantation (HSCT) is the transplantation of multipotent hematopoietic stem cells, usually derived from bone marrow, peripheral blood, or umbilical cord blood[57,58] It may be autologous (the patient's own stem cells are used), allogeneic (the stem cells come from a donor) or syngeneic (from an identical twin)[59]

It is most often performed for patients with certain cancers of the blood or bone marrow, such as multiple myeloma or leukemia.

Allopathic medicines treating Leukemia (Blood Cancers)

S no.	Drug name	Category name	Mode of action	Uses	Remarks
1.	Imatib	Tyrisine kinase inhibitor	Binding close ti the binding site	Treatment of the blood (chronic myeloid ,leukaemia	Anti cancer medication
2.	Etoposide	Podophyllotoxin derivatives	Inhibits DNA synthesis by forming a complex with topoisomerase 11 and DNA	Used to lymphoma, leukemia	Used for hemophagocytic lymphohistiocytosis
3.	Dasahil	Blood cancer	Inhibition of the intracellular tyrosine kinase of VEGF receptor (VEGFR) and PDGF receptor (PDGFR)	Nausea, vomiting, abdominal pain,	Treatment of blood cancer (chronic myeloid ,leukemia ,)
4.	Dasanat	Tyrosine kinase inhibitor	Bloking the action of an abnormal protein that signals	Treatment of certain cases of chronic myelogenous	Chromosome abnormality

			cancer calls to multiply	leukemia and lymphoblastic leukemia	
5.	Lanalid	BCR-ABL tyrosine kinase inhibitors	Mechanisms of action invitro and ,invivo	It works by helping the bone marrow to produce normal blood cells and by killing abnormal cells in the bone marrow	Treat multiple myeloma
6.	Veenat	Ttyrosine kinase inhibitors	Acts by slowing down or stopping the growth of cancerous cells	Treatment of the blood (chronic myeloid ,leukaemia. (acute lymphocytic leukemia	Anti cancer medication containing imatinib primarily used
7.	Bonitar	Anti cancer	Help to slow down the growth and multiplication of cancerous cell	Treatment of the bloodcancer (chronic myeloid ,leukaemia.	This medicine helps to slow down the growth and multiplication of cancer cells

Herbal medicine treating Leukemia (Blood Cancer)

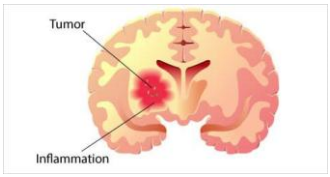
S no.	**Common name /Family name**	**Plant name**	**Chemical constituents**	**Plant parts**	**Uses**	**Remarks**
1.	Guggul/ Burseraceae	Commiphora anukul gum tree 	Steroid, amino acid, carbohydrates, aliphatic esters,	Gum resin	Used to arthritis, lowering high cholesterol	Treat hypothyroidism, and manage cholesterol and blood sugar levels
2.	Canrose/ Rosaceae	Portulaca grandiflora 	Rose water, rose essential oil, dried flower, rose hips,	Flower	Any type of blood cancer	Usually made of matal ceramic or plastic
3.	Medihope-D/ Verbenaceae	Latana camara N.foetida 	Salacia reticulate, pterocarpus marsupium, terminalia bellirica, terminalia chebula, tinospora cordifolia, emblica officinalis, alstonia	Seeds, flower, leaves,	Increase immunity, control diabetes, controls blood sugar level	Treat blood cancer
4.	Curcumin/ Zingiberaceae	Curcuma longa 	Demethoxycurcumin, and bisdemethoxycurcumin	Root	Improve heart health and prevent against alzheimers and cancer	Arthritis, treat blood cancer , anti septic, anti cold,

3 . Brain Tumor:

A brain tumor occurs when abnormal cell form within the brain[60] There are two main types of tumors: malignant tumors and benign (non-cancerous) tumors. These can be further classified as primary tumors, which start within the brain, and secondary tumors, which most commonly have spread from tumors located outside the brain, known as brain metastasis tumors[61]

A brain tumor is a mass or growth of abnormal cells in your brain.

Many different types of brain tumors exist. Some brain tumors are noncancerous (benign), and some brain tumors are cancerous (malignant). Brain tumors can begin in your brain (primary brain tumors), or cancer can begin in other parts of your body and spread to your brain as secondary (metastatic) brain tumors.



Symptoms: Headaches, Seizures, Problem with vision, Vomiting, Mental changes[62]

Cause: The cause of most brain tumors is unknown
The average five-year survival rate for all (malignant) brain cancers in the United States is 33%[63]
Secondary, or metastatic, brain tumors are about four times as common as primary brain tumors[64] with about half of metastases coming from lung cancer.Primary brain tumors occur in around 250,000 people a year globally, and make up less than 2% of cancers[65] In children younger than 15, brain tumors are second only to acute lymphoblastic leukemia as the most common form of cancer.

Type:

- Acoustic neuroma
- Astrocytoma
- Brain metastases
- Choroid plexus carcinoma
- Craniopharyngioma
- Embryonal tumors
- Ependymoma
- Glioblastoma
- Glioma
- Medulloblastoma
- Meningioma
- Oligodendroglioma
- Pediatric brain tumors
- Pineoblastoma
- Pituitary tumors

Many different types of primary brain tumors exist. Each gets its name from the type of cells involved. Examples include:

Gliomas : These tumors begin in the brain or spinal cord and include astrocytomas, ependymomas, glioblastomas, oligoastrocytomas and oligodendrogliomas.

Meningiomas : A meningioma is a tumor that arises from the membranes that surround your brain and spinal cord (meninges). Most meningiomas are noncancerous.

Acoustic neuromas (schwannomas) : These are benign tumors that develop on the nerves that control balance and hearing leading from your inner ear to your brain.

Pituitary adenomas: These are tumors that develop in the pituitary gland at the base of the brain. These tumors can affect the pituitary hormones with effects throughout the body.

Medulloblastomas : These cancerous brain tumors are most common in children, though they can occur at any age. A medulloblastoma starts in the lower back part of the brain and tends to spread through the spinal fluid.

Germ cell tumors: Germ cell tumors may develop during childhood where the testicles or ovaries will form. But sometimes germ cell tumors affect other parts of the body, such as the brain.

Craniopharyngiomas : These rare tumors start near the brain's pituitary gland, which secretes hormones that control many body functions. As the craniopharyngioma slowly grows, it can affect the pituitary gland and other structures near the brain.

Risk factors: Neurofibromatosis,exposure to vinyl chloride, Epstein–Barr virus, ionizing radiation

Treatment: Surgery, Radiation therapy, Chemotherapy

Surgery: Surgery is a medical or dental specialty that uses operative manual and instrumental techniques on a person to investigate or treat a pathological condition such as a disease or injury, to help improve bodily function, appearance, or to repair unwanted ruptured areas[66]

Radiation therapy: Radiation therapy may be curative in a number of types of cancer if they are localized to one area of the body. It may also be used as part of adjuvant therapy, to prevent tumor recurrence after surgery to remove a primary malignant tumor (for example, early stages of breast cancer[67]

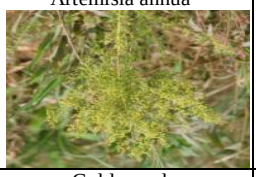
Chemotherapy: Chemotherapy may be given with a curative intent (which almost always involves combinations of drugs), or it may aim to prolong life or to reduce symptoms (palliative chemotherapy). Chemotherapy is one of the major categories of the medical discipline specifically devoted to pharmacotherapy for cancer, which is called medical oncology[68]

Allopathic medicine treating Brain Tumors

S no.	Drug name	Category name	Mode of action	Uses	Remarks
1.	Temcad	Alkylatin agents	Works by damaging the genetic material (DNA, RNA) of cancer cells. this stops their growth and multiplication	Treatment of a specific type of cancer of the brain	Anti cancer medicine
2.	Soranib	Protein kinase inhibitors	Through inhibition of several kinases involved in both tumour cell proliferation and angiogenesis	Treatment of brain tumors	Treat kidney cancer
3.	Medustine	Brain tumors	The specific biochemical interaction through which a drug substance produces its pharmacological effects	Nausea, vomiting, hair loss, chest pain,	Treatment of various cancers of the brain
4.	Temosie	Anti neoplastic agents	Works by damaging the genetic material (DNA, RNA) of cancer cells	Treatment of a specific type of the brain	Treat brain tumors
5.	Bleomin	Anti tumor antibiotic	Binds to guanosine-cytosine-rich protein of DNA via association of the 'S; tripeptide and by partial intercalation of the bithiazole rings	Works by slowing or stopping the growth of cancer cells	Used to treat cancer (tumors)
6.	Etoposie	Podophyllotoxi n derivatives	Inhibits DNA synthesis by forming a complex with topoisomerase 11 and DNA	Used to neuroblastoma	Used for hemophagocytic lymphohistiocyt osis
7.	Cisplastn	Alkylating agents	The drug induces its cytotoxic properties through binding to neuclear DNA and subsequent interference with normal transcription	Used to ovarian,bladder,lung,hea d,cancer	It may also be used to treat other cancers

Herbal medicine treating Brain Tumors

S no.	Common name /Family name	Plant name	Chemical constituents	Plant parts	Uses	Remsrks
1.	Annono muricata /Annonaceac	Soursop 	Cyproheptadine+ tricholine citrate is a combination of two medicine	Fruit	This medicine used to all type of tumor and tumor cancer	Increasing breast milk after childbrirth
2.	Kanchnaar guguul/ Burseraceae	Commiphora wightii,bdellium tree 	Minerals, resin, volatile oil, sterols, ferulates, flavones, sterones,	Flower	Treatment of tumors, ulcer	Reduce swelling
3.	Ashwagandha / Solanaceae	Ashwagandha 	Alkaloids, steroidal lactones, saponins, and withanolides	roots and leaves	Calm the brain, reduce swelling, lower blood pressure, and alter the immune system.	Potent anti-inflammatory and antioxidant.
4.	Curcumin / Zingiberaceae	Curcuma longa	diferuloylmethane, the primary constituent responsible for yellow color of turmeric), demethoxycurcumi n, and bisdemethoxycurcu	Root	Improve heart health and prevent against Alzheimer's and cancer	Improve depression and arthritis

		 min				
5.	Asragalus root / Fabaceae	Milkvetch 	Saponins, flavonoids, and polysaccharides	Root	preventing colds and upper respiratory infections, lowering blood pressure, treating diabetes,	protect and support the immune system,
6.	Podophyllum peltanum / Berberidaceae	Podophyllum peltatum 	Quercetin, kaempferol, asiragalin, essential oil	Leaves	directly to the skin for removal of warts	gynecologic infections
7.	Sweet wormwood / Asteraceae	Artemisia annua 	Polyphenols such as coumarins ,flavones ,flavonols and phenolic acid	Seeds	used to treat fever, liver disease, depression, muscle pain	digestion problems
8.	Goldenseal / Ranunculaceae	Goldenseal  .	isoquinoline alkaloids such as hydrastine berberine canadine and other alkaloids	Dried root	colds and other respiratory tract infections, allergic rhinitis (hay fever), ulcers,	promoted as a dietary supplement

Diet Chart for Cancer

Early Morning: Drink Lukewarm water 1-2 glass in Empty Stomach, before Brushing teeth.

Diet Plan:

TIMING	DIET PLAN (VEGETARIAN)
Breakfast (8:30AM)	1 glass of Milk with turmeric (1 tsp)+1-2 Fiber rich biscuit or daliya (Salted)/Poha/Upma(Sojjoi)/Sprouts/Oats+1 Plate Fruite Salad (Orange,Papaya,Grapes,Banana,Apple,Muskmelon,Avocado
Lunch (12:30-01:30PM)	1-2 Thin Chapti/Roti+1/2 Bowl Rice (Mand removed)+1 Bowl Green Vegetable (Boiled)+1 Bowl Dall(Dilute+Water)
Snacks (3:30-4:00PM)	1 Glass Milk with 1 tsp powder+ 1-2 Fibre rich biscuit or Daliya, Upma (Sujji)/Vegetable Soup
Dinner (7:00-8:00)	1-2 Thin Chapti/Roti+1/2 Bowl Green Vegetable (Boiled)+1 Bowl Dall(Dilute+Water)
30 Minute before Sleep (10:00PM)	1 GLASS Milk + 1 tsp Turmeric + Aswagandha, Chorna + Shatavri Churna.

Pathya (Do's) :

Cereals : Old rice , maize , Millet Oats, Wheat , barely.

Pulses : Green gram (moong dal) , pigeon pea (arahara) , Lentil (mansoor Dal)

Fruits &vegetables : Bottle gourd (Lauski) ridge gourd (tori), pointed grourd (parwal) , Bitter gourd (Karela) , pumpkin (Kaddu) , cauliflower, cabbage, broccoli, turnip, radish ,sweet patoto, bean, carrot, tomato, Seasonal Green vegetables, carrot, radish , cucumber Khera , Orange , Papaya, grapes , Avaecoda , Apple.

Other : Ginger, Garlic, lemon , .

Life style:

Yoga pranayam and meditation: 1. Bhastrika 2. Bahyapranayaam 3. Anulom Vilom 4. Bharamari 5. Udgeeth 6. Ujjaayi 7. Pranav Jap

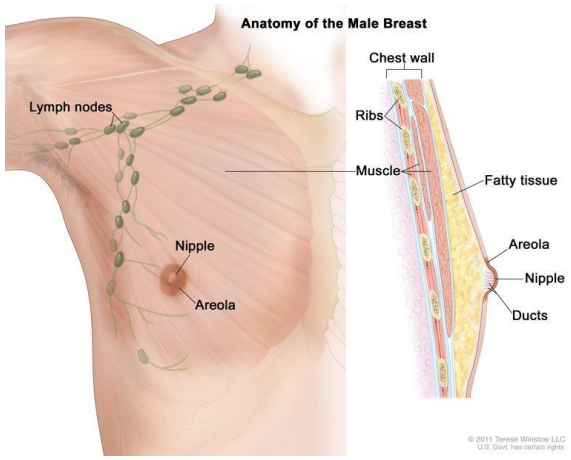
Asanas : Light Exercise

Apathya (Don'ts) :

Cereals: Refined Flour (maida) , new rice.
Pulses: Peas (matar), black gram (desi chana), kidney Beans , Chikpea.
Fruits & vegetables: Brinjal , jackfruit.
Other: Spicy food , Kadhi, Curd , cheese, Excess salt
Strictly Avoidable : oil spicy food, Non – Veg & Non – Veg Soup, ghee, excess salt, cold drinks, bakery products, alcohol, fast food , pickles , soft drinks, canned foods, junk foods .
Life style: Adhyasana (Repetition of food intake after meals, within 1-2 hours repeating) Physical Excercise (intercourse) & excess heat / summer, suppression of natural urges, anger.
Yoga Pranayan and meditation: As per docters advise
Asanas: As per docters advise
Advice: 1 CUP Divya Peya , Patanjali is issued or consumed by patients, in case if he/she is habitual of tea and coffee (It is substitute for it).

Do as regular:
1. Get up with the sunrise [5:30 -6:30]
2. Brush the teeth twice a day in the morning and before going to bed.
3. Scrape the tongue daily.
4. Meditate and do yoga.
5. Eat fresh light warn food slowly, in peaceful place with silent positive and happy mind.
6. Eat 3-4 times at regular time in a day . Don't skip meals & avoid overeating. Fast once in a week.
7. Eat leaving $1/3^{rd}$ or $1/4^{th}$ of stomach empty (full satisfaction of meal can be consider as one 's khuchi/stomach)
8. Chew food properly and slowly .
9. Walk 3-5 minutes after talking food.
10. Talk a short walk after meal and sleep at proper time in night [9-10 PM].

4. Breast cancer:
Breast cancer is cancer that develops from breast tissue [69] Signs of breast cancer may include a lump in the breast, a change in breast shape, dimpling of the skin fluid coming from the nipple, a newly inverted nipple, or a red or scaly patch of skin[70]
Worldwide, breast cancer is the most-common invasive cancer in women[71] Along with lung cancer, breast cancer is the most commonly diagnosed cancer, with 2.09 million cases each in 2018 [72] Breast cancer affects 1 in 7 (14%) of women worldwide[73] (The most common form of cancer is non-invasive non-melanoma skin cancer; non-invasive cancers are generally easily cured, cause very few deaths, and are routinely excluded from cancer statistics.) Breast cancer comprises 22.9% of invasive cancers in women[74] and 16% of all female cancers [75]In 2012, it comprised 25.2% of cancers diagnosed in women, making it the most-common female cancer[76]
In 2008, breast cancer caused 458,503 deaths worldwide (13.7% of cancer deaths in women and 6.0% of all cancer deaths for men and women together). Lung cancer, the second most-common cause of cancer-related deaths in women, caused 12.8% of cancer deaths in women (18.2% of all cancer deaths for men and women together).



Symptoms: Breast cancer most commonly presents as a lump that feels different from the rest of the breast tissue. More than 80% of cases are discovered when a person detects such a lump with the fingertips[77] The earliest breast cancers, however, are detected by a mammogram[78,79] Lumps found in lymph nodes located in the armpits may also indicate breast cancer.

Causes: Breast cancer most often begins with cells in the milk-producing ducts (invasive ductal carcinoma). Breast cancer may also begin in the glandular tissue called lobules (invasive lobular carcinoma) or in other cells or tissue within the breast.

Inherited breast cancer: Doctors estimate that about 5 to 10 percent of breast cancers are linked to gene mutations passed through generations of a family.

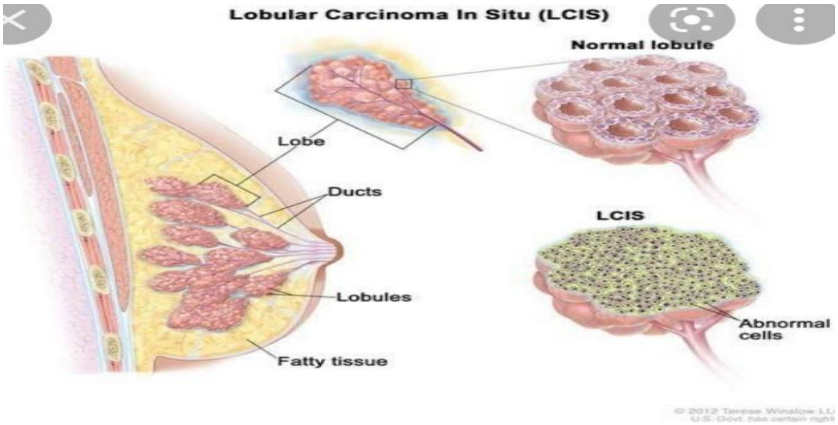
Type:

- Angiosarcoma
- Ductal carcinoma in situ (DCIS)
- Inflammatory breast cancer
- Invasive lobular carcinoma
- Lobular carcinoma in situ (LCIS)
- Male breast cancer
- Paget's disease of the breast
- Recurrent breast cancer

1. Ductal carcinoma in situ (DCIS): Ductal carcinoma in situ (DCIS) means the cells that line the milk ducts of the breast have become cancer, but they have not spread into surrounding breast tissue. DCIS is considered non-invasive or pre-invasive breast cancer.

2. Invasive lobular carcinoma: Invasive lobular carcinoma (ILC) is a type of breast cancer. ILC starts within the milk glands (lobules) of the breasts. As its name implies, ILC spreads to, or "invades" other breast tissue.

3. Lobular carcinoma in situ (LCIS): Lobular carcinoma in situ (LCIS) is a type of breast change that is sometimes seen when a breast biopsy is done. In LCIS, cells that look like cancer cells are growing in the lining of the milk-producing glands of the breast (called the lobules), but they don't invade through the wall of the lobules.



Risk factors: Being female, Obesity, Lack of exercise, Alcohol

Treatment: Surgery, Radiation therapy, Chemotherapy, Hormonal therapy, Targeted therapy

Radiation therapy: Historically, the three main divisions of radiation therapy are :

- external beam radiation therapy (EBRT or XRT) or Teletherapy;
- Brachytherapy or sealed source radiation therapy; and
- Systemic radioisotope therapy or unsealed source radiotherapy.

Chemotherapy: Some chemotherapy drugs are used in diseases other than cancer, such as in autoimmune disorders[80] and noncancerous plasma cell dyscrasia.

Hormonal therapy: Hormonal therapy in oncology is hormone therapy for cancer and is one of the major modalities of medical oncology (pharmacotherapy for cancer), others being cytotoxic chemotherapy and targeted therapy (biotherapeutics). It involves the manipulation of the endocrine system through exogenous or external administration of specific hormones, particularly steroid hormones, or drugs which inhibit the production or activity of such hormones (hormone antagonists). Because steroid

hormones are powerful drivers of gene expression in certain cancer cells, changing the levels or activity of certain hormones can cause certain cancers to cease growing, or even undergo cell death.

Targeted therapy: Targeted therapyor molecularly targeted therapy is one of the major modalities of medical treatment (pharmacotherapy) for cancer[81] others being hormonal therapy and cytotoxic chemotherapy. As a form of molecular medicine, targeted therapy blocks the growth of cancer cells by interfering with specific targeted molecules needed for carcinogenesis and tumor growth [82] rather than by simply interfering with all rapidly dividing cells (e.g. with traditional chemotherapy).

Allopathic medicine treating breast cancers

S no.	Drug name	Category name	Mode of action	Uses	Remarks
1.	Arimidex	Aromatase inhibitors	Inhibition of the aromatase engyme found predominantly in the adrenal gland , liver ,and fatty tissue,	Used to the treatment of breast cancer	Slow the growth of certain types of breast tumors
2.	Letroz	Non steroidal aromatase inhibitors	It blocks the active site , and therefore the electron transfer chain OF cyp 19A1	treatment of breast cancer	Used to treat infertility caused due to anovulation (during menstrual cycle egg cell from ovaries is not released)
3.	Captabond	Nucleoside metabolic inhibitor	Both normal and tumor cells metabolize 5-FU to 5-fluoro-2-dexyuridine monophosphate (fdUMP)and 5-fluorouridine triphosphate (FUTP)	treatment of breast cancer	Usead to treat metastatic colorectal cancer
4.	Arostane	Breast cancer	Works by shrinking the oil , or sebaceous, glands in the skin	treatment of breast cancer	Used to lower cholesterol and reduce the risk of heart disease
5.	Cyclophospha mide	Alkylating agents	Mainly due to cross-linking of strands of DNA and RNA and to inhibition of protein synthesis	Used to the treatment of breast cancer	Treat hodgkin's lymphoma
6.	Methotrexate	Antimetabolites	Inhibits the synthesis of DNA, RNA	Used to certain type of cancer .	control severe psoriasis or rheumatoid arthritis
7.	Flurouracil	Antimetabolites	Block an enzyme which converts the cytosine nucleotide into the deoxy derivative	Used to the anal, breast, stomach, head, neck, skin, cancer	Treat actinic or solar keratoses
8.	Vinorbine	Vinca alkaloids	Through binding to micritubular protein in the mitotic spindle	treatment of ,lund, cancer	Treat breast cancer
9.	Doxorubicin	Anthracyclines	Slow or stops the growth of cancer cells by blocking an enzyme called topo isomerise 2.	treatment of breast, bladder, stomach, lung, cancer	Decreased visual acuity

Herbal medicine Treating Breast Cancer

S no.	Drug name	Plant name	Chemical constituents	Plant parts	Uses	Remarks
1.	Allium sativum L/ Amaryllidacae	Garlic 	Ajoenes, thiosulfinates, vinyldithiins-1-3-dithiin, 3-vinyl-, sulphides disulfide,	Bulb, clove,	Used to a flavoring ingredient in food preparation including breast, gastric, and prostate cancer.	Hypertension, and hyperlipidemia,
2.	Pimpinella anism L/ Umberlliferace	Anise 	Ability to decrease bloating and settle the digestive tract	Leaves,flower , seeds,	As carminative, aromatic, disinfectant, and galactagogue	Analgesic in migraine
3.	Berberis vulgaris L/ Berberidaceae	B. vulgaris 	Berlambine, hyroxycanthine, isocorydine, lupeol, oleanolic acid,	Roots	Treat fever, cough, liver disease, depression, etc	Hyperlipidemia, hyperglycemia, and bleeding
4.	Aristolochia longa L/	Aristolochia	Talaumidin, veraguensin,galgravin	Roots	Used to trat snakebite,	Prevent seizures.

	Aristolochiaceae		, aristolignin, nectandrin, isonectandrin, nectandrin, columbin, etc.		intestinal pain, gallbladder pain arthritis, gout, weight loss,	
5.	Prunus persica (L)batsch/ Rosaceae	Peach 	Amygdalin and prunasin	Leaves	Treatment of constipation,in the elderly, cough, asthma, and menstrual disorder	Green leaves are very usefull diuretic,laxative, febrifugal, andparasiticide
6.	Nigella sativa L/ Ranunculaceae	Fennel flower 	Linoleic acid, oleic acid, palmitic acid, and trans-anethole,	Seeds	Asthma ,bronchitis,and inflammation,	Used as a spice and food preservative
7.	Thymus vulgaris L/ Lamiaceae	Garden thyme 	p-cymene,y-terpinene, and thymol	Aerial parts	Cure chest congestion, and induce saliva,	Effective for bronchitis, pharyngitis, whooping cough,
8.	Glycyrrhiza glabra L/ Fabaceae	Liquorice 	Glycyrrhizin, glycyrrhetic acid, isoliquiritin, isoflavones, etc	Roots	Skin, fever, stoach ulcer, epilepsy, paralysis,	Used to treat many diseases-such as respiratory disorder
9.	Atriplex halimus / Chenopodiaceae	Mediterranean saltbush 	Alkaline,saline, phytomass	Seeds	Livestock feed and soil protection and in traditional medicine	Used to breast cancer
10	Artemisia herba-alba L / Asteraceae	white wormwood 	Absinthin, essencial oil, thujone, isothujone,thjyl alcohol, and ester	Aerial parts	cough, stomach, and intestinal upset	Used to diabetes.

5. Melanoma;-

Melanoma, also redundantly known as malignant melanoma[83,84,85] is a type of skin cancer that develops from the pigment-producing cells known as melanocytes[86] Melanomas typically occur in the skin, but may rarely occur in the mouth, intestines, or eye (uveal melanoma)[87] In women, they most commonly occur on the legs, while in men, they most commonly occur on the back.About 25% of melanomas develop from moles.Changes in a mole that can indicate melanoma include an increase in size, irregular edges, change in color, itchiness, or skin breakdown.

Symptoms: Mole that is increasing in size has irregular edges, change in color, itchiness, or skin breakdown.

Cause: Melanomas are usually caused by DNA damage resulting from exposure to UV light from the sun. Genetics also play a role [88,89]Melanoma can also occur in skin areas with little sun exposure (i.e. mouth, soles of feet, palms of hands, genital areas)[90]

UV radiation: The UV radiation from tanning beds increases the risk of melanoma[91] The International Agency for Research on Cancer finds that tanning beds are "carcinogenic to humans" and that people who begin using tanning devices before the age of thirty years are 75% more likely to develop melanoma[92]

Genetics: A number of rare mutations, which often run in families, greatly increase melanoma susceptibility.

Type:

- Nodular melanoma
- Superficial spreading melanoma
- Acral lentiginous melanoma
- Lentigo maligna
- Amelanotic melanoma
- Ocular Melanoma
- Desmoplastic melanoma

1**. Nodular Melanomas:** Nodular melanomas are a faster-developing type of melanoma that can quickly grow downwards into the deeper layers of skin

Nodular melanoma tends to grow downwards into the deeper layer of the skin. They can grow quite quickly. There is often a raised area on the skin surface

2.Lentigo Malignant: Lentigo maligna melanoma accounts for approximately 5% of melanomas. Lentigo maligna melanomas are typically found on sun-exposed areas of the skin

3.Ocular Melanoma: Cutaneous melanoma – melanoma of the skin; Mucosal melanoma – melanoma of any mucous membrane, such as the throat, mouth, vagina or anus; Ocular melanoma.

Risk factors: Family history, many moles, poor immune function

Treatment:

Surgery: Excisional biopsies may remove the tumor, but further surgery is often necessary to reduce the risk of recurrence.

Mohs surgery has been reported with cure rate as low as 77%[93] and as high as 98.0% for melanoma-in-situ[94] CCPDMA and the "double scalpel" peripheral margin controlled surgery is equivalent to Mohs surgery in effectiveness on this "intra-epithelial" type of melanoma.

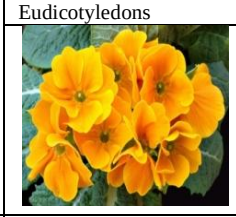
Biopsy of sentinel lymph nodes is a widely used procedure when treating cutaneous melanoma.[95,96]

Allopathic medicine treating melanoma

S no.	Drug name	Category name	Mode of action	Uses	Remarks
1.	Aldeukine	cytokines	stimulates the proliferation and maturation of T cells,	treat advanced renal cell carcinoma (RCC, a type of cancer that begins in the kidney)	These amino acid used by skeletal muscle to give energy during exercise.
2.	Binitinib	Antineoplastic Agents	Binimetinib, uncompetitive with ATP, binds to and inhibits the activity of MEK1/2 kinase	It works by slowing or stopping the growth of cancer cells	treat a type of skin cancer (melanoma).
3.	Braftovi	Antineoplastics, BRAF Kinase Inhibitor	Braftovi (encorafenib) is an oral small molecule BRAF kinase inhibitor.	treat people with a type of skin cancer called melanoma	treat colorectal cancer
4.	Cobimetinib fumarate	Antineoplastic agents	resulting in inhibition of extracellular signal-related kinase 2 (ERK2) phosphorylation and activation and decreased tumor cell proliferation.	treat: Melanoma	Used to melanoma and various type of skin cancer
5.	Cotellic	mitogen activated protein kinase	inhibits the catalytic activity of MEK1	-patients with unresectable or metastatic melanoma with a BRAF V600E or V600K mutation	Used tumor
6.	Sabra	a kinase inhibitor	selectively binds to and inhibits the	treat: Anaplastic thyroid	

			activity of B-raf,	cancer	
7.	Dacarbezin-	purine analogs	dacarbazine is not known. Its major action is through alkylating	Dacarbazine is used to treat melanoma (a type of skin cancer)	Treat Hodgkin's lymphoma
8.	Encorafinib	Antineoplastic Agent	Encorafenib acts as an ATP-competitive RAF kinase inhibitor, decreasing ERK phosphorylation and down-regulation of CyclinD1.	Works by slowing or stopping the growth of cancer cells	Encorafenib is used to treat certain types of skin cancer

Herbal medicine treating melanoma

S no.	**Common name /Family name**	**Plant name**	**Plant part**	**Chemical constituents**	**Uses**	**Remarks**
1.	Apignin/ Apiaceae	Chamomile plants 	the ligulate flowers	chamazulene, apigenin, and bisaboldisorders,	hay fever, inflammation, muscle spasms, menstrual disorders,	Antibacterial, antiviral
2.	Diosmin/ Rutaceae	Teucrium gnaphalodes 	citrus fruit peels	diosmetin substituted by a 6-O-(alpha-L-rhamnopyranosyl)-beta-D-glucopyranosyl moiety at position 7 via a glycosidic linkage	Diosmin is used to treat different blood vessel disorders, including hemorrhoids, varicose veins,	Used to trat swelling of the arms (lymphedema)
3.	Fisetin/ Fabaceae	Eudicotyledons 	fruit and vegeta bles,	Fisetin (7,3′,4′-flavon-3-ol) is a plant flavonol from the flavonoid group of polyphenols.	May improve Skin health by improving collagen, reducing UV damage,	Treat skin disease
4.	Luteolin/ Lamiaceae	Reseda luteola 	leaves	It is a 3'-hydroxyflavonoid and a tetrahydroxyflavone	Anti-oxidants, anti-inflammatory, memory increase.	Treating various diseases such as hypertension, inflammatory disorders, and cancer

II. Conclusion:

Hence cancer is second leading cause of death following heart diseases one should care about its prevention before the occurrence of disease by varies examination and if disease is already exists then one should go for its regular treatment. Recent treatment mainly included. Cell based immunotherapy, gene therapy, chemotherapy, are most widely used methods used for treatment of various type of cancer. A plan for the diagnosis and treatment of cancer is a key component of any overall cancer control plan. Its main goal is to cure cancer patients or prolong their life considerably, ensuring a good quality of life. In order for a diagnosis and treatment programme to be effective, it must never be developed in isolation

References: 1. "Cancer". World Health Organization. 12 September 2018. Retrieved 19 December 2018
[1]. Cancer – Signs and symptoms". NHS Choices. Archived from the original on 8 June 2014. Retrieved 10 June 2014.
[2]. Obesity and Cancer Risk". National Cancer Institute. 3 January 2012. Archived from the original on 4 July 2015.Retrieved 4 July 2015

[3]. Jayasekara H, MacInnis RJ, Room R, English DR (May 2016). "Long-Term Alcohol Consumption and Breast, Upper Aero-Digestive Tract and Colorectal Cancer Risk: A Systematic Review and Meta-Analysis". Alcohol and Alcoholism. 51 (3): 315–30. doi:10.1093/alcalc/agv110. PMID 26400678.

[4]. "Heredity and Cancer". American Cancer Society. Archived from the original on 2 August 2013. Retrieved 22 July 2013.

[5]. World Cancer Report 2014. World Health Organization. 2014. pp. Chapter 1.3. ISBN 978-92-832-0429-9. Archived from the original on 12 July 2017.

[6]. "SEER Stat Fact Sheets: All Cancer Sites". National Cancer Institute. Archived from the original on 26 September 2010. Retrieved 18 June 2014.

[7]. GBD 2015 Disease and Injury Incidence and Prevalence, Collaborators. (8 October 2016). "Global, regional, and national incidence, prevalence, and years lived with disability for 310 diseases and injuries, 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015". Lancet. 388 (10053): 1545–1602. doi:10.1016/S0140-6736(16)31678-6. PMC 5055577. PMID 27733282

[8]. Sciacovelli, Marco; Schmidt, Christina; Maher, Eamonn R.; Frezza, Christian (2020). "Metabolic Drivers in Hereditary Cancer Syndromes". Annual Review of Cancer Biology. 4: 77–97. doi:10.1146/annurev-cancerbio-030419-033612.

[9]. GBD 2015 Mortality and Causes of Death, Collaborators. (8 October 2016). "Global, regional, and national life expectancy, all-cause mortality, and cause-specific mortality for 249 causes of death, 1980–2015: a systematic analysis for the Global Burden of Disease Study 2015". Lancet. 388 (10053): 1459–1544. doi: 10.1016/s0140-6736(16)31012-1. PMC 5388903. PMID 27733281.

[10]. World Cancer Report 2014. World Health Organization. 2014. pp. Chapter 1.1. ISBN 978-92-832-0429-9.

[11]. World Cancer Report 2014. World Health Organization. 2014. pp. Chapter 1.1. ISBN 978-92-832-0429-9. Archived from the original on 12 July 2017.

[12]. Dubas LE, Ingraffea A (February 2013). "Nonmelanoma skin cancer". Facial Plastic Surgery Clinics of North America. 21 (1): 43–53. doi:10.1016/j.fsc.2012.10.003. PMID 23369588.

[13]. Cakir BÖ, Adamson P, Cingi C (November 2012). "Epidemiology and economic burden of nonmelanoma skin cancer". Facial Plastic Surgery Clinics of North America. 20 (4): 419–22. doi:10.1016/j.fsc.2012.07.004. PMID 23084294.

[14]. [3] Anand P, Kunnumakkara AB, Sundaram C, Harikumar KB, Tharakan ST, Lai OS, Sung B, Aggarwal BB (September 2008). "Cancer is a preventable disease that requires major lifestyle changes". Pharmaceutical Research. 25 (9): 2097–116. doi: 10.1007/s11095-008-9661-9. PMC 2515569. PMID 18626751.

[15]. Islami F, Goding Sauer A, Miller KD, Siegel RL, Fedewa SA, Jacobs EJ, McCullough ML, Patel AV, Ma J, Soerjomataram I, Flanders WD, Brawley OW, Gapstur SM, Jemal A (January 2018). "Proportion and number of cancer cases and deaths attributable to potentially modifiable risk factors in the United States". CA: A Cancer Journal for Clinicians. 68 (1): 31–54. doi:10.3322/caac.21440. PMID 29160902

[16]. Targeted Cancer Therapies". cancergov. National Cancer Institute. 26 February 2018. Retrieved 28 March 2018.

[17]. White V, Ruparelia P (2020). "Chapter 28". Kumar & Clark's Clinical Medicine (10th ed) Elsevier. p 975. ISBN 978-0-702078705

[18]. Lung Carcinoma:Tumors of the Lungs.Merck Manual Professional Edition.online edition. Retrieved 15th August 2007.

[19]. Non-small cell lung cancer Treatment-Patient Version(PDQ®).NCL.May 12,2015.retrieved 5 March 2016.

[20]. Stewart,edited by BemardW,Wild,ChristopherP.World cancer report2014. Lyon:IARC Press pp.350-352.ISBN 9789283204299.

[21]. World Cancer Report 2014.World Health Organization.2024.pp.Chapter 5.1.ISBN 9284304298.

[22]. World Cancer Report 2014.World Health Organization.2014.pp.Chapter 1.1.ISBN 9283204298.

[23]. https://www.medicinenet.com/image-collection/lung_cancer_picture/picture.htm

[24]. Horn L, Lovly CM (2018). "Chapter 74: Neoplasms of the lung". In Jameson JL, Fauci AS, Kasper DL, Hauser SL, Longo DL, Loscalzo J (eds.). Harrison's Principles of Internal Medicine (20th ed.). McGraw-Hill. ISBN 978-1259644030

[25]. Brown KM, Keats JJ, Sekulic A, et al. (2010). "Chapter 8". Holland-Frei Cancer Medicine (8th ed.). People's Medical Publishing House. ISBN 978-1-60795-014-1.

[26]. Alberg AJ, Brock MV, Samet JM (2016). "Chapter 52: Epidemiology of lung cancer". Murray & Nadel's Textbook of Respiratory Medicine (6th ed.). Saunders Elsevier. ISBN 978-1-4557-3383-5.

[27]. Peto R, Lopez AD, Boreham J, et al. (2006). Mortality from smoking in developed countries 1950–2000: Indirect estimates from National Vital Statistics. Oxford University Press. ISBN 978-0-19-262535-9. Archived from the original on 5 September 2007.

[28]. Lung Carcinoma: Tumors of the Lungs". Merck Manual Professional Edition, Online edition. July 2020. Retrieved 21 July 2021.

[29]. Yang IA, Holloway JW, Fong KM (October 2013). "Genetic susceptibility to lung cancer and co-morbidities". Journal of Thoracic Disease. 5 (Suppl. 5): S454–62. doi:10.3978/j.issn.2072-1439.2013.08.06. PMC 3804872. PMID 24163739.

[30]. Larsen JE, Minna JD (December 2011). "Molecular biology of lung cancer: clinical implications". Clinics in Chest Medicine. 32 (4): 703–40. doi:10.1016/j.ccm.2011.08.003. PMC 3367865. PMID 22054881.

[31]. Lu C, Onn A, Vaporciyan AA, et al. (2017). "Chapter 84: Cancer of the Lung". Holland-Frei Cancer Medicine (9th ed.) Wiley Blackwell. ISBN 9781119000846

[32]. small-cell carcinoma at Dorland's Medical Dictionary

[33]. "Small Cell Lung Cancer". National Organization for Rare Disorders.

[34]. Small cell carcinoma of the Lung and Bronchus". Surveillance, Epidemiology, and End Results (SEER) Relative Survival Rates by Time Since Diagnosis. U.S. National Cancer Institute. 2016.

[35]. https://www.researchgate.net/figure/Small-cell-lung-cancer-diagnosed-at-rapid-on-site-examination-ROSE_fig1_293798236/amp

[36]. Non-Small Cell Lung Cancer at eMedicine

[37]. "What Is Non-Small Cell Lung Cancer?" www.cancer.org

[38]. https://www.cancernetwork.com/view/drugs-pipeline-non-small-cell-lung-cancer

[39]. Lu C, Onn A, Vaporciyan AA, et al. (2017). "Chapter 84: Cancer of the Lung". Holland-Frei Cancer Medicine (9th ed.) Wiley Blackwell. ISBN 9781119000846.

[40]. Fromthe Greek: χειρουργική cheirourgikē (composed of χείρ, "hand", and ἔργον, "work"), via Latin: chirurgiae, meaning "hand work".

[41]. Alfarouk KO, Stock CM, Taylor S, Walsh M, Muddathir AK, Verduzco D, et al. (15 July 2015). "Resistance to cancer chemotherapy: failure in drug response from ADME to P-gp". Cancer Cell International. 15 (1): 71. doi:10.1186/s12935-015-0221-1. PMC 4502609. PMID 26180516.

[42]. Ben-Ari ET (April 2004). "Dual purpose: some cancer therapies used to treat autoimmune diseases" (PDF). Journal of the National Cancer Institute. 96 (8): 577–9. doi:10.1093/jnci/96.8.577. PMID 15100330.

[43]. Leukemia". Merriam-Webster.

[44]. Leukemia". NCI. 1 January 1980. Archived from the original on 27 May 2014. Retrieved 13 June 2014. Cancer that starts in blood-forming tissue, such as the bone marrow, and causes large numbers of abnormal blood cells

[45]. https://en.m.wikipedia.org/wiki/Leukemi
[46]. What You Need To Know About™ Leukemia". National Cancer Institute. 23 December 2013. Archived from the original on 6 July 2014. Retrieved 18 June 2014
[47]. Ross JA, Kasum CM, Davies SM, Jacobs DR, Folsom AR, Potter JD (August 2002). "Diet and risk of leukemia in the Iowa Women's Health Study". Cancer Epidemiol. Biomarkers Prev. 11 (8): 777–81. PMID 12163333. Archived from the original on 10 September 2017
[48]. Wiernik, Peter H. (2001). Adult leukemias. New York: B. C. Decker. pp. 3–15. ISBN 978-1-55009-111-3.
[49]. "Sr-90 is known to increase the risk of bone cancer and leukemia in animals and is presumed to do so in people; from google (nuclear reactor emit tritium) result 1, 2, 3". Archived from the original on 20 July 2017
[50]. "A Snapshot of Leukemia". NCI. Archived from the original on 4 July 2014. Retrieved 18 June 2014.
[51]. Hutter, JJ (June 2010). "Childhood leukemia". Pediatrics in Review. 31 (6): 234–41. doi:10.1542/pir.31-6-234. PMID 20516235.
[52]. "A Snapshot of Leukemia". NCI. Archived from the original on 4 July 2014. Retrieved 18 June 2014
[53]. Cordo V, Meijerink J (January 2021). "T-cell Acute Lymphoblastic Leukemia: A Roadmap to Targeted Therapies". Blood Cancer Discovery. 2: 19–31. doi:10.1158/2643-3230.BCD-20-0093
[54]. Corrie PG, Pippa G. (2008). "Cytotoxic chemotherapy: clinical aspects". Medicine. 36 (1): 24–28. doi:10.1016/j.mpmed.2007.10.012.
[55]. Cordo V, Meijerink J (January 2021). "T-cell Acute Lymphoblastic Leukemia: A Roadmap to Targeted Therapies". Blood Cancer Discovery. 2: 19–31. doi:10.1158/2643-3230.BCD-20-0093
[56]. Definition of targeted therapy – NCI Dictionary of Cancer Terms"
[57]. Felfly H, Haddad GG (2014). "Hematopoietic stem cells: potential new applications for translational medicine". Journal of Stem Cells. 9 (3): 163–97. PMID 25157450.
[58]. Mahla RS (2016). "Stem Cells Applications in Regenerative Medicine and Disease Therapeutics". International Journal of Cell Biology. 2016 (7): 6940283. doi:10.1155/2016/6940283. PMC 4969512. PMID 27516776.
[59]. Park B, Yoo KH, Kim C (December 2015). "Hematopoietic stem cell expansion and generation: the ways to make a breakthrough". Blood Research. 50 (4): 194–203. doi:10.5045/br.2015.50.4.194. PMC 4705045. P
[60]. MID 26770947.
[61]. "Ge.neral Information About Adult Brain Tumors". NCI. 14 April 2014. Archived from the original on 5 July 2014. Retrieved 8 June 2014
[62]. "Adult Brain Tumors Treatment". NCI. 28 February 2014. Archived from the original on 5 July 2014. Retrieved 8 June 2014.
[63]. Longo, Dan L (2012). "369 Seizures and Epilepsy". Harrison's principles of internal medicine (18th ed.). McGraw-Hill. p. 3258. ISBN 978-0-07-174887-2.
[64]. "Cancer of the Brain and Other Nervous System - Cancer Stat Facts". SEER. Retrieved 22 July 2019
[65]. Merrell RT (December 2012). "Brain tumors". Disease-a-Month. 58 (12): 678–89. doi:10.1016/j.disamonth.2012.08.009. PMID 23149521.
[66]. World Cancer Report 2014. World Health Organization. 2014. pp. Chapter 1.3. ISBN 978-9283204299.
[67]. "Doctor's surgery". Collins English Dictionary. Archived from the original on 10 February 2018. Retrieved 10 February 2018
[68]. CK Bomford, IH Kunkler, J Walter. Walter and Miller's Textbook of Radiation therapy (6th Ed), p311
[69]. Alfarouk KO, Stock CM, Taylor S, Walsh M, Muddathir AK, Verduzco D, et al. (15 July 2015). "Resistance to cancer chemotherapy: failure in drug response from ADME to P-gp". Cancer Cell International. 15 (1): 71. doi:10.1186/s12935-015-0221-1. PMC 4502609. PMID 26180516.
[70]. Breast Cancer". NCI. January 1980. Archived from the original on 25 June 2014. Retrieved 29 June 2014.
[71]. "Breast Cancer Treatment (PDQ®)". NCI. 23 May 2014. Archived from the original on 5 July 2014. Retrieved 29 June 2014.
[72]. McGuire A, Brown JA, Malone C, McLaughlin R, Kerin MJ (May 2015). "Effects of age on the detection and management of breast cancer". Cancers. 7 (2): 908–29. doi:10.3390/cancers7020815. PMC 4491690. PMID 26010605.
[73]. "acer". World Health Organization. 12 September 2018. Retrieved 16 July 2020
[74]. Balasubramanian R, Rolph R, Morgan C, Hamed H (2019). "Genetics of breast cancer: management strategies and risk-reducing surgery". Br J Hosp Med (Lond). 80 (12): 720–725. doi:10.12968/hmed.2019.80.12.720. PMID 31822191. S2CID 209314404.
[75]. "World Cancer Report". International Agency for Research on Cancer. 2008. Archived from the original on 31 December 2011. Retrieved 26 February 2011. (cancer statistics often exclude non-melanoma skin cancers such as basal-cell carcinoma, which are common but rarely fatal)
[76]. "Breast cancer: prevention and control". World Health Organization. Archived from the original on 6 September 2015.
[77]. World Cancer Report 2014. International Agency for Research on Cancer, World Health Organization. 2014. ISBN 978-92-832-0432-9
[78]. Merck Manual of Diagnosis and Therapy (February 2003). "Breast Disorders: Breast Cancer". Archived from the original on 2 October 2011. Retrieved 5 February 2008
[79]. American Cancer Society (2007). "Cancer Facts & Figures 2007" (PDF). Archived from the original (PDF) on 10 April 2007. Retrieved 26 April 2007
[80]. Boyd NF, Guo H, Martin LJ, Sun L, Stone J, Fishell E, et al. (January 2007). "Mammographic density and the risk and detection of breast cancer". The New England Journal of Medicine. 356 (3): 227–36. doi:10.1056/NEJMoa062790. PMID 17229950
[81]. Ben-Ari ET (April 2004). "Dual purpose: some cancer therapies used to treat autoimmune diseases" (PDF). Journal of the National Cancer Institute. 96 (8): 577–9. doi:10.1093/jnci/96.8.577. PMID 15100330
[82]. Cordo V, Meijerink J (January 2021). "T-cell Acute Lymphoblastic Leukemia: A Roadmap to Targeted Therapies". Blood Cancer Discovery. 2: 19–31. doi:10.1158/2643-3230.BCD-20-0093
[83]. "Definition of targeted therapy – NCI Dictionary of Cancer Terms".
[84]. Schwartzman, Robert Mayer; Orkin, Milton (1962). A Comparative Study of Diseases of Dog and Man. Springfield, IL: Thomas. p. 85. The term 'melanoma' in human medicine indicates a malignant growth; the prefix 'malignant' is redundant.
[85]. Bobonich, Margaret; Nolen, Mary E. (2015). Dermatology for Advanced Practice Clinicians. Philadelphia: Wolters Kluwer. p. 106. The term malignant melanoma is becoming obsolete because the word 'malignant' is redundant as there are no benign melanomas.
[86]. Farlex Partner Medical Dictionary. 2012. Retrieved March 4, 2021. Avoid the redundant phrase malignant melanoma.
[87]. "Melanoma Treatment – for health professionals". National Cancer Institute. June 26, 2015. Archived from the original on 4 July 2015. Retrieved 30 June 2015.
[88]. World Cancer Report (PDF). World Health Organization. 2014. pp. Chapter 5.14. ISBN 978-9283204299. Archived (PDF) from the original on 2014-05-30.

[89]. Melanoma Risk factors". Mayo Clinic. Archived from the original on 2017-04-10. Retrieved 2017-04-10.
[90]. Greene MH (December 1999). "The genetics of hereditary melanoma and nevi. 1998 update". Cancer. 86 (11 Suppl): 2464–77. doi:10.1002/(SICI)1097-0142(19991201)86:11+<2464::AID-CNCR3>3.0.CO;2-F. PMID 10630172.
[91]. Goydos JS, Shoen SL (2016). "Acral Lentiginous Melanoma". Cancer Treatment and Research. 167: 321–9. doi:10.1007/978-3-319-22539-5_14. ISBN 978-3-319-22538-8. PMID 26601870.
[92]. Boniol M, Autier P, Boyle P, Gandini S (July 2012). "Cutaneous melanoma attributable to sunbed use: systematic review and meta-analysis". BMJ. 345: e4757. doi:10.1136/bmj.e4757. PMC 3404185. PMID 22833605.
[93]. El Ghissassi F, Baan R, Straif K, Grosse Y, Secretan B, Bouvard V, et al. (WHO International Agency for Research on Cancer Monograph Working Group) (August 2009). "A review of human carcinogens--part D: radiation". The Lancet. Oncology. 10 (8): 751–2. doi:10.1016/S1470-2045(09)70213-X. PMID 19655431.
[94]. Mohs FE, Mikhail GR (January 1991). Mohs micrographic surgery. W.B. Saunders. pp. 13–14. ISBN 978-0-7216-3415-9. Archived from the original on 2016-01-07.
[95]. Bene NI, Healy C, Coldiron BM (May 2008). "Mohs micrographic surgery is accurate 95.1% of the time for melanoma in situ: a prospective study of 167 cases". Dermatologic Surgery. 34 (5): 660–4. doi:10.1111/j.1524-4725.2007.34124.x. PMID 18261099. S2CID 23386371. Cure rate as high as 98% for small melanoma in situ, and as high as 95% noted for lentigo maligna variant of melanona in situ has been reported with Mohs surgery.
[96]. Crowson AN, Haskell H (October 2013). "The role of sentinel lymph-node biopsy in the management of cutaneous melanoma. Giornale Italiano di Dermatologia e Venereologia. 148 (5): 493–9.PMID 24005142.
[97]. Ross MI, Gershenwald JE (May–Jun 2013). "Sentinel lymph node biopsy for melanoma: a critical update for dermatologists after two decades of experience".Clinics in Dermatology. 31 (3): 298–310. doi:10.1016/j.clindermatol.2012.08.004. PMID 23608449