



Cancer: Causes, Symptoms, & Various Ways To Cure

PRAMOD KUMAR

Assistant Professor -Chemistry, Govt. Degree College Manikpur, Chitrakoot (U.P.) INDIA

Abstract : *Disease that is characterized by the presence of continuously dividing cells is called cancer. Initially localized at a point called a tumor, these cells later distribute throughout the body via the blood or lymphatic system, and eventually results in death. This appears as lumps, but if not detected at its early stages, it might lead to cancer in other parts of the body via the blood and lymphatic system, eventually leading to the death of the individual. Cancer is caused by a number of external or internal stimuli. Various kinds of cancer show their symptoms in different ways. Certain home remedies exist that aim at preventing cancer, while several others focus on stimulating the activities of the immune system. Certain kinds of foods are also beneficial when taken by patients undergoing chemotherapy or radiation therapy.*

Causes of cancer : Cancer can be caused by a number of things, these include environmental factors, lifestyle, and other behavioral patterns. Here, we have discussed all the major, minor and common factors that can lead to cancer, are as given below-

Tobacco and Smoking : Tobacco and smoking are enumerated as one of the main causes of cancer. They are one of the carcinogens that can cause lung cancer, throat cancer, cancer of the respiratory tract, esophagus, bladder and pancreatic cancer. Even the people who are exposed to cigarette smoke, indirectly, are at a risk of cancer. It is also believed that cigarette smoke is indirectly responsible for kidney, stomach and liver cancer. Although, it's not exactly tobacco that causes cancer, but it is the carcinogens or chemicals present in it that may result in cancer. These include benzene, carbon monoxide, ammonia, nicotine, lead, etc.

Carcinogens: Carcinogens include chemicals, physical, and biological agents. These are also cancer causing substances. Although, the presence of carcinogens is harmful, this doesn't mean that every item termed as a carcinogen may necessarily cause cancer. Other factors like the amount of exposure, genetic background equally influence in the development of this condition.

Viruses and other types of infection: Cancer can be resulted by many viruses and diseases, if not paid proper attention. These include hepatitis B, C, human papilloma virus, Epstein-Barr, etc. In developing and under-developed regions like Asia and Africa, the risk of parasitic organisms increases; like clonorchis sinensis, schistosoma haematobium, etc. Therefore, it is important that you live in proper hygienic conditions and drink clean water to avoid these parasites.

Though, rare, cancer can also be hereditary. Other than the above mentioned, cancer can also be a result of genetics or hormones.

Physical activity and Diet: Another cancer causing factor is a genetically modified diet that has chemical toxins in it. A diet filled with fat, sodium, sugar, etc. can trigger obesity, which can thereby result in cancer. Therefore, it is very important to pay proper attention to what you're eating and how you're physically straining yourself to get rid of these toxins.

Radiation from Sun: There are many places where one can be exposed to radiations, like the X-ray machines, mines, etc. But, they are not the most prominent cause of radiation based cancers. Too much exposure to UV rays from sun can immensely increase the risk of cancer. It can cause skin damage and also lead to skin cancer. This is not to say that sun is harmful; it just means that too much exposure to anything, even otherwise beneficial to health, can lead to drastic effects on your health.

Types of cancer: Cancer can manifest in a variety of different types based on their origins or mode of cell growth. Some of the most widely occurring cancer types are as given below:

Corresponding Author



CNS Cancer: Cancer of the components of the central nervous system like the spinal cord and brain.

Carcinoma: Cancer of the skin or outer cover-forming tissues

Leukemia: Cancer of blood forming cells.

Lymphoma: Cancer of the immune system cells.

Sarcoma: Cancer of the supportive tissues like cartilage and blood vessels.

How to identify cancer: signs & symptoms: Cells are induced to divide due to certain external or internal stimuli. In this state, if the growth of cells is localized, detectable, and can be removed, it is called a benign tumor. These can be treated or removed via surgery. If the cells have traveled to distant body parts and started their division again, it is a malignant tumor or cancer. This cannot be cured and often ends up in the death of an individual.

Cancer shows up as different symptoms in both men and women. They are sometimes clearly visible and other times hard to notice. They include:

In women: 1. Spotting or bleeding between periods, or bleeding after menopause can also be indicators of cancer. 2. Any changes in breast, like the formation of any lumps, nipple discharge, puckering of the breast skin, etc. These can be symptoms for breast cancer. 3. Excessive bloating that continues for more than two weeks, accompanied by weight loss and bleeding. These can be a warning sign for ovarian cancer.

In men: 1. Pain and tenderness in the hip bone and lower back. 2. Changes in the urine, these include difficulty in urinating, straining while urinating, blood in urine, etc. 3. Presence of lumps on the testicles.

4. Excessive coughing, without any nose stuffing and or fever. Blood in the mucus can also be a symptom of lung cancer.

Common symptoms include: 1. Lumps at the place of tumor 2. Unusual discharge from body 3. Indigestion 4. Slow healing of wounds 5. Persistent cough 6. Changes in the bladder or bowel movements

Cancer can be cured by many treatments, these include surgery, stem cell transplant, hormone therapy, chemo therapy, and more. These treatment for cancer usually various on the basis of the stage. To prevent the growth of cancer, you should also adopt a diet that is rich in antioxidants and has other immunity boosting qualities. We have discussed them all in detail as follows:

Chemotherapy: Drugs are administered inside the body for this treatment. These drugs may be effective in reducing tumor size, destroy cancer cells, etc. it is usually accompanied by other treatments. The treatment may be given through oral, intravenous, injections, intrathecal, topical, intra-arterial, or intraperitoneal means. It is performed in cycles, after one week of chemotherapy, you get a break of three weeks. Even chemotherapy has many side effects, these include, difficulty eating, nausea, loss of hair, loss of appetite etc.

Radiation therapy: In this therapy, cancer cells are directly targeted through high doses of radiation. It cures cancer by shrinking the tumor and killing the cancer cells. Although, there are many side-effects of a radiation therapy, these include fatigue, hair loss, changes in skin, nausea and vomiting, etc. A radiation therapy is almost always accompanied by other treatments for the same.

Surgery: Surgeries are most often used to remove cancerous tumor from the patient's body. There are many different types of surgeries that are used to rid the cancer, they involve anesthesia, scalpels and other sharp tools to cut through the different body parts and reach the tumor. Other surgeries, where the surgeons are not required to cut, include cryosurgery, lasers, hyperthermia and photodynamic therapy. They involve the risk of pain and infection.

Hormone therapy: this treatment targets at stopping or slowing down the growth of hormones that cause cancer. They can be given orally, through injections or via surgeries. Side effects may include hot flashes, fatigue, a lower sexual appetite, vaginal dryness, etc.



Immunotherapy: Immunotherapy treatment involves helps your immune system fight cancer cell. It makes use of living organisms to treat cancer. Monoclonal antibodies, adoptive cell transfer, cytokines, treatment vaccines, and Bacillus Calmette Guerin are all different types of immunotherapy treatments. It can cause side-effects like pain, swelling, soreness, redness, itchiness and rashes.

Other treatments for cancer include the use of precision medicine, targeted therapy, etc. most of the above treatments are used in combination of two or more treatments for effective results.

Though not directly curable, cancer can be prevented by certain precautionary measures and a balanced lifestyle. Once it has begun, it can be slowed down or put into dormancy, but it can never be completely eliminated. However, by eating healthy and nutritious food, you can ward off incoming pathogens and activate the immune system to fight against the cancerous cells. Research published in Journal of the American College of Nutrition lists foods to be avoided to reduce risk of cancer. An additional dietary regime is to be followed as the patient undergoes chemical or radiation therapy that tends to show various side effects like hair loss and nausea. This diet includes the consumption of broccoli, grapes, ginseng, myrrh, green tea, aloe vera, lycopene, maitake mushroom, soybeans, and wheat grass in ether direct or indirect forms.

Grapes: Grapes also contain a compound called proanthocyanidins that reduce the body's estrogen production. This leads to the effective treatment of lung, prostate, colon and breast cancer.

Ginseng: Ginseng helps in building resistance, and fights off infectious agents that seek to damage the body.

Broccoli: Broccoli has been found to be beneficial in treating certain kinds of colorectal cancers. These should be taken in the form of sprouts. Broccoli contains certain phytochemicals that have the ability to fight against cancer cells, but the exact compound has yet not been identified. These act as antioxidants and contain enzymes that aid in the detoxification of the body.

Green Tea: Prepare herbal green tea by boiling some in a glass of water until the volume is reduced by half. This has anti-inflammatory properties as well and is very effective against breast, prostate, liver, pancreatic and skin cancer.

Myrrh: Myrrh is an herb with a wide range of properties including anti-inflammatory, antibacterial, and antifungal qualities. It is a good home remedy for the treatment of all kinds of cancer.

Soybeans: According to the MD Anderson Cancer Center, soybeans contain phytoestrogens and several other entities that block cancerous cells from using estrogen. It also contains isoflavones that are needed for the prevention of cancer in its early stages. It can be taken either as sprouts or as cooked vegetables and demonstrates positive prevention against breast, prostate, colon and lung cancer.

Low-carb diet: Home remedies for cancer include intake of low-carb diet. Findings of a recent study suggests that intake of low-carb diet may reduce risk of colon cancer. Research suggests that low calorie diet may slow down the spread of breast cancer. New study suggests that a diet rich in dairy products may slightly extend lives of people diagnosed with colon cancer.

Wheat grass: This is known to be advantageous to many cancer patients. Wheat grass taken in the form of juice or in its raw form is shown to retard the growth of cancer cells as demonstrated by the Memorial Sloan-Kettering Cancer Center. It has the ability to enhance the immune system and gets rid of toxins and waste products.

Juicing: It is an established fact that juices are rich sources of vitamins and nutrients. Freshly obtained juice from fruits like apples, bananas, mangoes, and cherries should be given to cancer patients on a regular basis. This aids in boosting the immune system of the individual, making them strong enough to fight the incoming pathogens.

Aloe Vera: This herb can be consumed raw in the form of jelly. It is effective against both prostate and lung cancer.



Lycopene: According to the Academy of Nutrition and Dietetics, lycopene is found in abundant quantities in tomatoes, guava, papayas, grapes, apricots, and watermelon. These antioxidant compounds are even more effective than carotenoids in the removal of free radicals that stimulate cell division. Lycopene is effective in the treatment of prostate, lung, and stomach cancer.

Olive Oil: Olive oil is known for its health benefits. It also reduces risk of cancer. Recent research study suggests that hydroxytyrosol, a major component of olive oil may help prevent breast cancer in postmenopausal women.

Maitake Mushroom: As per the PDR Health, maitake or “dancing mushrooms” are good for the alternative treatment of cancer. They are known to increase the efficacy of chemotherapy and radiation therapy. They also reduce the side effects of these therapies by preventing hair loss and nausea. They can be consumed raw or grilled because cooking them absorbs a lot of the beneficial oils that they contain.

It is good to have cucumbers, carrots, bananas, corn, spinach, peas and lentils if you are a patient suffering from cancer. These can be consumed in soups, which prove to be very nutritious.

According to a recent study, intake of vegetable protein, vegetable fat, dietary fiber, and nuts during adolescence may help to reduce risk of breast cancer. Cancer patients are also advised to have lentils or sprouts as they are rich in protein.

It is advised to cut down on hot dogs, beef, lamb and pork as they contain a high amount of saturated fats. Eating less quantities of red meat would reduce the risk of prostate and colon cancer as well.

Exercise: Research suggests that exercising an hour daily reduces the risk of contracting breast cancer in women of any age and any weight. Research also suggests that physical activity and healthy diet may help to reduce risk of cancer. Exercising outside or in a gym may become difficult at times breaking your regime, indoor products like spin bikes are quite useful for getting quick and easy exercise at home.

References

1. Brahmer J, Reckamp KL, Baas P, et al. Nivolumab versus docetaxel in advanced squamous-cell non-small-cell lung cancer. *N Engl J Med.* 2015;373:123"135.
2. Chesney J, Rasku M, Clem A, Miller D. Denileukin diftitox depletes T regulatory cells and causes regression of melanoma metastases in humans. *Eur J Cancer Suppl.* 2006;4:12:84.
3. Cheung NV. Chapter 32: Therapeutic antibodies and immunologic conjugates. In: Niederhuber JE, Armitage JO, Doroshow JH, Kastan MB, Tepper JE, eds. *Abeloff's Clinical Oncology.* 5th ed. Philadelphia, Pa: Elsevier; 2014.
4. Dudley ME, Wunderlich JR, Robbins PF, et al. Cancer regression and autoimmunity in patients after clonal repopulation with antitumor lymphocytes. *Science.* 2002;298:850"854.
5. Fry TJ, Mackall CL. T-cell adoptive immunotherapy for acute lymphoblastic leukemia. *Hematology Am Soc Hematol Educ Program.* 2013;2013:348"353.
6. Garon EB, Rizvi NA, Hui R, et al. Pembrolizumab for the treatment of non-small-cell lung cancer. *N Engl J Med.* 2015;372:2018"2028.
7. [http://www.cell.com/cell/abstract/S0092-8674\(14\)00736-3](http://www.cell.com/cell/abstract/S0092-8674(14)00736-3)
8. <http://link.springer.com/article/10.1007%2Fs10549-014-2978-7>
9. <https://www.clinicaltrials.gov/ct2/show/study/NCT02068092>
10. <http://www.tandfonline.com/doi/abs/10.1080/07315724.2013.866527>
11. Grupp SA, Kalos M, Barrett D, et al. Chimeric antigen receptor-modified T cells for acute lymphoid leukemia. *N Engl J Med.* 2013;368:1509"1518.
