**Cancer: types, symptoms and treatment**

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**What is cancer?**

Cancer or malignant neoplasm is a disease of un controlled proliferation of cells without any differentiation.A typical change of the cell, uncontrolled cells growth and no differentiation is also called cancer.

* The cancer cells invade and destroy the surrounding tissues. Tumor is any abnormal swelling, lump or mass in the body. The tumor is synonymous with neoplasm, especially solid neoplasm. The neoplasm is the scientific term to describe an abnormal proliferation of genetically altered cells. Neoplasm or tumor is of two types :

**Benign tumors and malignant tumors:**

Benign neoplasm or tumors is solid neoplasm or tumor that stops growing by itself and does not invade other tissues and remain confined to a particular site. It causes limited damage to the body and is noncancerous .it divides in an uncontrolled manner, though.

**Malignant neoplasm or tumor:**

This is the actual cancerous tumors which grows and invade other tissues showing metastasis.

**Characteristics of cancer cells:**

1. The cancer cells do not require extracellular growth factor to grow and divide.

**2**. There is no control over the cell cycle, so the cells continue to divide repeatedly.

3. The cells do not under grow differentiation although divide continuously.

4. Melanin, mucus and fat droplets are more.

5. Cell death is inhabited, so they are immortal cells.

6. The cells pass out from the tumour to new site for forming secondary tumours. This spreading of cancerous cells from one part to other parts through circulation or by forming secondary’s is called metastasis.

**Types of cancer:**

1. Sarcomas
2. Lymphomas
3. Carcinomas
4. Leukemia's
5. Germ cell tumor
6. Blastic tumors
7. Myeloma
8. Melanoma.

**Possible symptoms of cancer:**

1. A persistent cough or hoarseness in a smoker.

2. A persistent change in digestive and bowl habits.

3. A change in a warts or mole.

4. A lump or a hard area in the breast

6. Unexplained loss of appetite.

7. Unexplained loss of weight.

8. Any incurables ulcer.

9. Bleeding in vagina at times other than menstruation.

10. Non injury bleeding from the surface of the skin, mouth or any other opening of the body.

11. Indigestion or difficulty in swallowing.  
12. Sore that does not heal unusual bleeding or discharge.  
13. Change in bowel or bladder habits.

14. Unexplained low grade fever.

Detection and diagnosis of cancer:

It depends upon histological features of malignant structure:

**\* FNAC: fine needle aspiration cytological technique:**

It is a very easy and recent method. in this technique a fine needle use to collect samples of the cells and examined it.

**\*.Bone marrow biopsy and abnormal count of WBC in leukemia**

\* Biopsy of tissue, direct or through endoscopy, pap test is used for detecting cancer of cervix and others parts of genital tract.

**\* PET scan, MRI scans (magnetic resonance imaging), CT scan (computed tomography), x-ray are very useful to detect cancers of the internal organs.**

\* Monoclonal antibodies coupled to appropriate radio isotopes can detect cancer specific antigens and hence cancer.

**Treatment of cancer:**

Since cancer is not a single disease but causes wide spread effects, so far there is not a single treatment and of therapies are used simultaneously. Cancer is at present treated in many ways on the basis of cancer, location of tumors and extent or stage of the disease. The therapies are:

1**. Chemotherapy**: in chemotherapy a variety of anti cancer drugs are used that produce more injury to cancer cells than to normal cells. These drugs interfere with the cell division and growth and affect both normal and cancerous cells. Chemotherapy may lead to hair loss or anemia but both get corrected after treatment stopped.

2**. Radiotherapy**: it is used in addition to chemotherapy .the basic principle there is to bombard cancer cells with rays that damage or destroy the ability of cancer cell to grow and divide by damaging the DNA within the tumour cells, but produce minimum damages to the surrounding normal tissue. Cobalt60 are commonly used for the treatment.

**3. Surgrey:** it is removal of the cancerous cells surgically and has only limited usefulness. In breast tumors and uterine tumor, it is most effective.

**4. Immunotherapy**: immunotherapy is a form of treatment that enhancer the body's ability to recognize cancer cells and destroys them. The body’s immune system can usually destroy or help destroy most infections or the invaders like cancer cells. It can be given intravenously or by subcutaneous injection.

**5. Blood and marrow transplant**: high dose chemotherapy or radiation therapy can destroy ability to make blood cells. A blood or marrow transplant can be used to replace marrow stem cells which produce blood cells.

6. **Hormone therapy:** the growth of some cancer can be inhabited by providing or blocking certain hormone. E.g. Breast and prostate cancer. Removing or blocking estrogen or testosterone is often an important additional treatment.

7. **Angiogenesis inhibitor**: prevent the extensive growth of blood vessels that tumors requires to survive.eg. A monoclonal antibody bevacizumals has been approved as angiogenesis inhibitor.

**Important questions for examination:**

1. What is neoplasm?
2. Write the difference between benign tumor and malignant tumors.
3. Write two detect and diagnosis methods of cancer.

4. Write the possible symptoms of cancer.

5. What is cancer? Write the two treatment method of cancer.

6. What is chemotherapy?

**MCQ (NEET EXAM)**

1. Cancer of B lymphocytes is called -----a) sarcoma b) melanoma c) myeloma d) carcinoma.
2. Which one of the following cancers does not form a solid neoplasm? a) Leukemia b) Lymphoma c)Lipoma d) sarcoma
3. A cancer causing agent is known as a) carcinoma b) carcinogen c) sarcoma d) metastasis.
4. Which one of the following techniques is safest for the detection of cancer? a) MRI b) X-ray c) computed tomography d) histo pathological studies.
5. Which one of the following statements is correct? a) Benign tumours show the property of metastasis. B) Heroin accelerates body functions c) malignant tumours may exhibit metastasis d) patients who have undergone surgery are given cannabinoids to relieve pain.

**Thank you for watching this note. This note is useful for higher secondary final year students and NEET examination.** **Any query please contact our whatsapp number: +91-9707271107**

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