e-ISSN: 2319-9865
p-ISSN: 2322-0104

Research & Reviews: Journal of Medical and Health Sciences

Cancer and Its Types

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Short Commentary

Received: 07/01/2015
Revised: 19/02/2015
Accepted: 28/02/2015

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Keywords: cancer, lung cancer, Sarcoma, Kaposi sarcoma, Non-Hodgkin lymphoma

Introduction

There are nearly and more than 100 types of cancer. Types of cancer are usually named for the organs or tissues where the cancers form. For example:

- lung cancer starts in cells of the lung
- brain cancer starts in cells of the brain

Cancers also may be described by the type of cell that they are formed by, such as an epithelial cell or a squamous cell.

Some categories of cancers that begin in specific types of cells are as follows:

Carcinoma

These are the most common type of cancer. They are formed by many types of epithelial cells (column-like shape cells cover the inside and outside surfaces of the body) [1]. Carcinomas that begin in different epithelial cell types have specific names are as follows:

Adenocarcinoma [1] (breast, colon, and prostate) is a cancer that forms in epithelial cells that produce fluids or mucus. Tissues with this kind of epithelial cell are called glandular tissues.

Basal cell carcinoma (outer layer of skin) is a cancer that begins in the lower or basal (base) layer of the epidermis.

Squamous cell (epidermoid) carcinoma [2-3] is a cancer that forms in squamous cells, which are epithelial cells that lie just beneath basal layer. Squamous cells also line many other organs (stomach, intestines, lungs, bladder, and kidneys). Squamous cells look flat, like fish scales (under microscope).

Transitional cell carcinoma is a cancer that forms in a type of epithelial tissue called transitional epithelium (urothelium). This tissue which can get bigger and smaller (made up of many layers of epithelial cells), is found in the linings of the bladder, ureters, and part of the kidneys (renal pelvis), and a few other organs [4].

Sarcoma

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Sarcomas are cancers that are formed in bone and soft tissues such as muscle, fat, blood vessels, lymph vessels, and fibrous tissue (such as tendons and ligaments).

Osteosarcoma [5] is the common cancer of bone. The common types of soft tissue sarcoma are leiomyosarcoma, Kaposi sarcoma [6-7], malignant fibrous histiocytoma, liposarcoma, and dermatofibrosarcoma protuberans [8].

Leukemia

Cancers that starts in the blood-forming tissue of the bone marrow [9] are called leukemias. These types of cancer do not form solid tumors. Instead, large numbers of abnormal white blood cells (leukemia cells and leukemic blast cells [10-11]) build up in the blood and bone marrow, crowding out normal blood cells. The low level of normal blood cells can make it harder for the body to get oxygen to its tissues, control bleeding or fight infections.

There are four types of leukemia, which are grouped on how quickly the disease gets worse (acute or chronic) and on type of blood cell the cancer starts in (lymphoblastic [13] or myeloid [12]).

Lymphoma

Lymphoma is cancer that begins in lymphocytes (T cells [14] or B cells [15]). These are disease-fighting white blood cells that are part of the immune system. In lymphoma, abnormal lymphocytes accumulate in lymph nodes and lymph vessels and in other organs of the body.

There are two main types of lymphoma:

Hodgkin lymphoma [16]: abnormal lymphocytes that are known as Reed-Sternberg cells. These cells usually form from B cells.

Non-Hodgkin lymphoma [17]: large group of cancers that start in lymphocytes. The cancers can grow quickly or slowly and can form from B cells or T cells [18-19].

Multiple Myeloma

Cancer that begins in plasma cells, another type of immune cell. The abnormal plasma cells, (myeloma cells) accumulate in the bone marrow and form tumors in bones all through the body. Multiple myeloma [20-21] is also called plasma cell myeloma [22] and Kahler disease.

Melanoma

Melanoma is cancer that begins in cells that become melanocytes, which are specialized cells that make melanin (the pigment that gives skin [23] its color [24]). Most melanomas form on the skin, but melanomas [25] can also form in other pigmented tissues, such as the eye.

Brain and Spinal Cord Tumors

There are different types of brain and spinal cord tumors. These tumors are named based on the type of cell in which they formed and where the tumor first formed in the central nervous system. For example, an astrocytic tumor begins in star-shaped brain cells called astrocytes, which help keep nerve cells healthy. Brain tumors can be benign (not cancer) or malignant (cancer) [26-27].

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Symptoms of cancer

Cancer is a progressive disease which has several stages. Each stage has number of symptoms. Some symptoms are seen early and may occur due to a tumor in an organ or a gland. As the tumor grows, it may overlap on the nearby nerves, organs, and blood vessels causing pain and some pressure which may be early warning signs of cancer.

The ACS has established symptoms as possible warning signs of cancer as follows:

1. changes in the size, color, or shape of a wart or a mole
2. a sore that does not heal
3. persistent cough, hoarseness, or sore throat
4. a lump or thickening in the breast or elsewhere
5. unusual bleeding or discharge
6. chronic indigestion or difficulty in swallowing
7. any change in bowel or bladder habits

Other diseases (besides cancer) could produce the same symptoms. Especially if they linger, it is important to have these symptoms checked, as soon as possible. The earlier a cancer is diagnosed and treated, the chance of being cured better. Many cancers such as breast cancer [28, 29] may not have any early symptoms. Therefore, it is important to undergo routine screening tests [30, 31] (breast self-exams and mammograms).

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