

INTRODUCTION

In the American society, cancer is the disease most feared by the majority of people within the U.S. Cancer has been known and described throughout history.

In the early 1990s nearly 6 million cancer cases and more than 4 million deaths have been reported worldwide, every year. The most fatal cancer in the world is lung cancer, which has grown drastically since the spread of cigarette smoking in growing countries. Stomach cancer is the second leading form of cancer in men, after lung cancer. Another on the increase, for women, is breast cancer, particularly in China and Japan. The fourth on the list is colon and rectum cancer, which occurs mostly in older people.

In the United States more than one-fifth of the deaths in the early '90s was caused by cancer, only the cardiovascular diseases accounted at a higher percentage. In 1993 the American Cancer Society predicted that about 33% of Americans will eventually get cancer. In the United States skin cancer is the most dominating in both men and women, followed by prostate cancer in men and breast cancer in women. Yet lung cancer causes the most deaths in men and women. Leukemia, or cancer of the blood, is the most common type in children. An increasing incidence has been clearly observable over the past few decades, due in part to improved cancer screening programs, and also to the increasing number of older persons in the population, and also to the large number of tobacco smokers-- particularly in women. Some researchers have estimated that if Americans stopped smoking, lung cancer deaths could virtually be eliminated within 20 years.

The U.S. government and private organizations spent about \$1.2 billion annual for cancer research. With the development of new drugs and treatments, the number of deaths among cancer patients under 30 years of age is decreasing, even though the number of deaths from cancer is growing overall.

TYPES OF CANCER

1. Cancer is the common term used to designate the most aggressive and usually fatal forms of a larger class of the diseases known as neoplasms. A neoplasm is described as being relatively autonomous because it does not fully obey the biological mechanisms that govern the growth and the metabolism of individual cells and the overall cell interactions of the living organism. Some neoplasms grow more rapidly than the tissues from which they arise, others grow at a normal pace but because of the other factors eventually become recognizable as an abnormal growth and not normal tissue. The changes seen in neoplasm are heritable in that these characteristics are passed on from each cell to its offspring, or daughter cells. Neoplasm occurs only in multicellular organisms.

The main classification of the neoplasms as either benign or malignant relates to their behavior. Several relative differences classify these two classes. A benign neoplasm, for instance, is harmless, but malignant is not. Malignancies grow more rapidly than do benign forms and invade adjacent normal tissues. Tissue of a benign tumor is structured in a manner similar to that of the tissue from which it is derived, malignant tissue, however, has an abnormal and unstructured appearance. Most malignant tumors, in fact, exhibit abnormalities in chromosome structure, that is, the structure of the DNA molecules that constitute the genetic materials duplicated and passed on to later generations of cells. Most important, however, benign neoplasms do not begin to grow at sites other than the point of origin, whereas malignant tumors do. The term TUMOR is used to indicate a readily defined mass of tissue that is recognizable from normal living tissue. Thus a scar, an abscess, and a healing bone callus are all designated as tumors, but they are not neoplasms.

Besides being classified according to their behavior, neoplasms can also be classified according to the tissue from which they arose, and they are usually designated by a tissue-type prefix. A general system of nomenclature has also

arisen to distinguish benign and malignant neoplasms. The designation of the benign neoplasm usually is signified by the suffix-oma added to the appropriate tissue type prefix. Malignant neoplasms are separated into two general classes. Cancers arising from such supportive tissues as muscle, bone and fat are termed sarcomas. Cancers arising from such epithelial tissues as the skin and lining the mouth, stomach, bowel, or bladder are classified as carcinomas. Examples of benign neoplasms are a lipoma (from fat tissue) and an osteoma (from bone). Malignant counterparts of these neoplasms are a liposarcoma and an osteosarcoma. The term adenoma is used to indicate a benign neoplasm of glandular tissue, and corresponding malignancies are termed adenocarcinomas.

Exceptions to this form of nomenclature include thymomas, which are either malignant or benign neoplasms of the thymus gland, and such descriptive terms as dermoid, a benign tumor of the ovary. The suffix-blastoma denotes a primitive, usually malignant, neoplasm. Leukemia, literally meaning "white blood," is the term used to designate malignant neoplasms having a major portion of their cells circulating in the blood stream. Most leukemia's arise in the blood-forming tissues, such as the bone and in the lymphatic tissues of the body.

CAUSES OF CANCER

2. A cancer-causing agent-- chemical, biological, or physical--is termed a carcinogen. Substances are labeled carcinogens if, when administered to a population of previously untreated organisms, they cause a statistically significant increase in the incidence of the neoplasms compared with the incidence in subjects that are left untreated.

FOOTNOTES

- 1.) ACADEMIC AMERICAN ENCYCLOPEDIA (pp. 5-10)
- 2.) AMERICAN CANCER SOCIETY'S COMPLETE BOOK OF CANCER (25-27)

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