

I.

Cancer is a group of diseases characterized by an uncontrolled growth of abnormal cells. If the spread of these abnormal cells is not controlled, cancer can cause death. Most cancers take the form of tumors, although not all tumors are cancers. A tumor is simply a mass of new tissue that serves no physiological purpose. It can be benign, like a wart, or malignant, like cancer. Benign tumors are made up of cells similar to the surrounding normal cells and are enclosed in a membrane that prevents them from penetrating neighboring tissues. They are dangerous only if their physical presence interferes with bodily functions. A malignant tumor, or cancer, is capable of invading surrounding structures, including blood vessels, the lymph system and nerves. It can also spread to distant sites by the blood and lymphatic circulation and so can produce invasive tumors in almost any part of the body.

In 1997, an estimated 1,359,150 people in the United States will be diagnosed with cancer and 554,740 will die of the disease. Early screening for cancer is believed to be able to drastically reduce the number of deaths due to the disease. Knowing what to look for when detecting cancer, as well as knowing if you are in a high risk population are two of the main factors of early intervention. Early intervention of cancer has proven to increase survival rates and lower the length and severity of treatments. Detection and protection are two types of ambulatory care for cancer that begin before the disease is ever diagnosed.

II.

Cancer often causes symptoms that you can watch for. These include: change in bowel or bladder habits; a sore that does not heal; unusual bleeding or discharge; thickening or lump in

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the breast or any other part of the body; indigestion or difficulty swallowing; obvious change in a wart or mole; and nagging cough or hoarseness. These symptoms are not always warning signs of cancer. They can also be caused by less serious conditions. It is important to see a doctor if any of these symptoms occur. Only a doctor can make a diagnosis. A person shouldn't wait to feel pain because early cancer usually does not cause pain.

Observation is the most widely available examination for the detection of cancer. It is useful in identifying suspicious lesions in the skin, lip, mouth, larynx, external genitalia and cervix. The second most available detection procedure is palpation. It is particularly valuable in detecting lumps, nodules, or tumors in the breast, mouth, salivary glands, thyroid, subcutaneous tissues, anus, rectum, prostate, testes, ovaries and uterus and enlarged lymph nodes in the neck, axilla or groin.

Internal cancers require an extension of observation through endoscopes, x-rays, magnetic resonance imaging, and ultrasound. Laboratory test, such as the Pap smear, and occult blood testing of the feces have also proven helpful for some of the cancers. However, concerns regarding effectiveness and yield play a particularly important role in decisions to screen for cancers not easily responsive to earlier detection through physical examination. The performance of these tests is usually measured in terms of sensitivity, specificity, and positive and negative predictive values.

The type, periodicity, and commencement of screening in high-risk populations for most cancers reflect the judgment of expert practitioners rather than evidence from scientifically-conducted test. Some individuals are known to be at high risk for cancer, such as those with a strong family history of cancer. Physician judgment is needed in such circumstances to

determine the most appropriate application of available screening methods. Once the high-risk person is identified, is counseled appropriately, and regularly undergoes screening procedures, the benefits of early detection and treatment are available to this person, yielding a proven higher chance of recovery. Those people considered high risk should take extra precautions when attempting to detect cancer.

III.

Important facts that a person should know about how to protect against getting cancer include: not using tobacco products; eating at least five servings of fruits and vegetables each day; if you are a woman, getting a mammogram, pelvic exam and Pap test every year; getting tests done as you get older for cancers of the colon and rectum; if you are a man, getting early detection tests for prostate cancer, avoiding too much sunlight by wearing protective clothing and sun screen; and avoiding unnecessary x-rays. If a person does have cancer, it is wise to find out what the treatment choices are and which are best suited for that person. Before getting treatment, it is advisable to get a second opinion from another doctor. These are all forms of protection that can be done by an ambulatory basis.

IV.

Four basic forms of treatment for cancer are currently practiced. These are surgery, radiation therapy, biological therapy and chemotherapy. All but surgery can be performed on an outpatient basis. The physician may use one form of therapy or a number of different forms in order to produce the desired results.

A.

Radiation therapy is one of the major ambulatory treatment modalities for cancer. Approximately 60% of all people with cancer will be treated with radiation therapy sometime during the course of their disease. Its effectiveness as a treatment for cancer was first reported in the late 1800s. Advances in equipment technology, combined with the science of radiobiology, have led to today's highly sophisticated treatment centers. Radiation therapy can now be delivered with maximum therapeutic benefits, minimizing toxicity and sparing healthy tissues.

Radiation therapy uses high-energy ionizing radiation to kill cancer cells. It is considered a local therapy because the cancer cells are destroyed only in the anatomical area being treated. The radiation causes a breakage of one or both strands of the DNA molecule inside the cells, therefor preventing their ability to grow and divide. While cells in all phases of the cell cycle can be damaged by radiation, the lethal effect of radiation may not be apparent until after one or more cell divisions have occurred. Although normal cells can also be affected by ionizing radiation, they are usually better able to repair their DNA damage.

Radiation treatments can be administered externally or internally, depending on the type and extent of the tumor, however only external radiation can be administered in an out-patient basis. Some patients have both forms, one after the other. X-rays, radioactive elements, and radioactive isotopes are most often used in these forms of treatment.

External radiation treatments are administered by machines that deliver high-energy radiation. These machines vary according to the amount and type of energy produced. The kind of machine will differ depending on the type and extent of the tumor. Technological advances have permitted the development of machines with increased energy, allowing for precise

treatments of deep seated tumors with less damage to superficial tissues.

Treatment of cancer with radiation can be costly. It requires very complex equipment and the service of many health care professionals. The exact cost of the radiation therapy will depend of the type and number of treatments given. Most health insurance policies cover charges for radiation therapy, and in some states the Medicaid program may help pay for the treatments.

The side effects of radiation treatment vary from patient to patient. Some may have no side effect or only a few mild ones through the course of treatment. Some may have more serious side effects. The side effects one has depends mostly on the treatment dose and the part of the body that is treated.

There are two main types of side effects: acute and chronic. Acute occurs close to the time of the treatment and usually are gone completely within a few weeks of finishing therapy. Chronic side effects may take months or years to develop and are usually permanent. The most common side effects are fatigue, skin changes, and loss of appetite. The can result from radiation to any treatment site. Other side effects are related to treatment of specific areas, such as hair loss as a result of radiation treatment to the head. The majority of side effects will go away in time.

B.

Biological therapy (sometimes called immunotherapy, biotherapy, or biological response modified therapy) is a promising new addition to the family of cancer treatments. Biological therapies use the body's immune system, either directly or indirectly, to fight cancer or to lessen side effects that may be caused by some cancer treatments.

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The body has a natural ability to protect itself against diseases, including cancer. The immune system, a complex network of cells and organs that work together to defend the body against attacks by foreign invaders, is one of the body's main defenses against disease.

Researchers have found that the immune system may recognize the difference between healthy cells and cancer cells in the body and eliminate those that become cancerous. Cancer may develop when the immune system breaks down or is overwhelmed. Biological therapies are designed to repair, stimulate or enhance the immune system's natural anticancer function.

Immune system cells and proteins called antibodies, which are part of the immune system, work against cancer and other diseases by creating an immune response against foreign invaders. This immune response is unique because antibodies are specifically programmed to recognize and defend against certain antigens. Antibodies respond to antigens by latching on to them. Biological therapies used to treat cancer target some of the defenses by boosting, directing or restoring the body's own cancer-fighting mechanisms.

C.

Chemotherapy is the use of medications or chemicals with cancer-fighting abilities. Chemotherapy drugs interfere with the cancer cells' ability to grow or multiply. Different groups of drugs act on cells in different ways. Identification of the type of disease is important because certain chemotherapies work best for certain diseases. Even patients diagnosed with the same disease may be treated with different agents, depending on what is known to be most effective for the particular circumstances. Chemotherapy can damage normal cells as well as cancer cells. Those normal cells most effected are ones which divide rapidly. These include the hair follicles, cells in the gastrointestinal tract and bone marrow.

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Chemotherapy can be given in different ways. The five most common methods are: intravenous, oral, intramuscular, intrathecal and intraperitoneal.

The intravenous route, or IV, is a very common way of giving medication directly into a vein. A small plastic needle is inserted into one of the veins in the lower arm. There is some discomfort during insertion because a needle stick is required to get into the vein. After that, the administration of the medication is usually painless. Chemotherapy flows from the IV bag through the needle and catheter into the bloodstream. Sometimes a syringe is used to push the chemotherapy through the tubing.

The oral method takes the form of either a pill, capsule or liquid taken by mouth. This is the easiest and most convenient method and can usually be done at home.

Intramuscular is when the chemotherapy is given by way of an injection into the muscle. There is a slight sting as the needle is placed into the muscle of the arm, thigh or buttocks. Although this procedure lasts only a few seconds, the effect of the intramuscular chemotherapy may last much longer. This is because the chemotherapy may be absorbed slowly through the muscular tissues and into the bloodstream.

Certain forms of cancer have a tendency to spread to the nervous system. To treat cancer that spreads to the spinal cord or brain, doctors may perform a spinal tap and inject chemotherapy into the spinal fluid. This is known as the intrathecal method of administration of chemotherapy.

Chemotherapy may also be given by an intraperitoneal port. This device sits under the skin and requires no specific home care. The port allows for placing chemotherapy directly into the abdominal cavity. This technique is used to increase the concentration of the chemotherapy

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that contacts tumors in the abdomen.

For some patients, IV insertions can eventually damage the veins in the arm. Some patients have small veins and some have very few accessible veins. Frequent IV insertions and too small or too few veins may prompt the doctor to recommend a permanent type of IV catheter. Permanent catheters allow patients to go home and receive chemotherapy without needing other IV's placed. Along with receiving chemotherapy and IV fluids through this catheter, patients can receive blood products and even have their blood drawn without painful needle sticks.

Chemotherapy may be given once a day, once a week, or even once a month, depending on the type of cancer and what research has shown is the best time period for treatment. How much chemotherapy costs will depend on a lot of things, such as the kind of drugs used and how often you take them. Some medical insurance pays for chemotherapy and government programs such as Medicare and Medicaid can also help cover the costs.

Side effects of chemotherapy vary from each patient. Some patients take chemotherapy and feel no changes at all. However, chemotherapy sometimes makes you feel sick after the drugs get into the body. This is because very strong drugs are being used. They go after any cell that is quickly dividing, whether it is a cancer cell or not. Cells in the hair, bone marrow, skin, mouth, and in the stomach normally divide quickly in the body. This is why the side effects of chemotherapy can mean hair loss or feeling tired. Sores in the mouth, dry skin and hair, or sickness to the stomach are also common side effects of chemotherapy.

There are some medications that a person can take that could help get rid of some of the side effects. There are few lasting problems, and unpleasant symptoms often go away as soon as the treatment is finished.

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Chemotherapy might be taken before or after surgery. Or, it could be administered with radiation treatment. Some people also have chemotherapy without surgery or radiation. Chemotherapy is not new. It has been helping people since the early 1950s. Today it can be very effective in killing cancer cells.

V.

Cancer is a very serious disease, and is one which many people fear. Ambulatory treatment for cancer can be done in several different ways, but the most effective kinds of ambulatory care for cancer is prevention and early detection. This way, it is possible that a person will not have to undergo cancer treatments. However, if cancer is diagnosed in a person, ambulatory treatment options are available in attempts to rid the body of the cancer. With this in mind, today's cancer patients and those with a high-risk potential for acquiring cancer, will have many options available to them to manage the disease.