PROSTATE CANCER

Cancer of the prostate, a common form of cancer, is a disease in which cancer (malignant) cells are found in the prostate. The prostate is one of the male sex glands and is located just below the bladder (the organ that collects and empties urine) and in front of the rectum (the lower part of the intestine). The prostate is about the size of a walnut. It surrounds part of the urethra, the tube that carries urine from the bladder to the outside of the body. The prostate makes fluid that becomes part of the semen, the white fluid that contains sperm.

Cancer of the prostate is found mainly in older men. As men age, the prostate may get bigger and block the urethra or bladder. This may cause difficulty in urination or can interfere with sexual functions. The condition is called benign prostatic hyperplasia (BPH), and although it is not cancer, surgery may be needed to correct it. The symptoms of BPH or of other problems in the prostate may be similar to symptoms for prostate cancer.

A doctor should be seen if any of the following symptoms appear: weak or interrupted flow of urine, urinating often (especially at night), difficulty urinating, pain or burning during urination, blood in the urine, or nagging pain in the back, hips, or pelvis. Often there are no symptoms of early cancer of the prostate. When examining a patient, a doctor will insert a gloved finger into the rectum (a rectal examination) to feel for lumps in the prostate. A special test called an ultrasound, which uses sound waves to make a picture of the bladder, may also be done.

If the doctor feels anything that is not normal, he or she may need to take cells from the prostate and look at them under a microscope. The doctor will usually do this by putting a needle into the prostate to remove some cells. To get to the prostate, the doctor may put the needle through the rectum or through the space between the scrotum and the anus (the perineum). This is called a fine needle aspiration or a needle biopsy.

The chance of recovery (prognosis) and choice of treatment depend on the stage of the cancer (whether it is just in the prostate or has spread to other places in the body) and the patient's general health.

STAGES OF PROSTATE CANCER

Stages of cancer of the prostate

Once cancer of the prostate has been found (diagnosed), more tests will be done to find out if cancer cells have spread from the prostate to tissues around it or to other parts of the body. This is called "staging." To plan treatment, a doctor needs to know the stage of the disease. The following stages are used for cancer of the prostate:

Stage I (A)

Prostate cancer at this stage cannot be felt and causes no symptoms. The cancer is only in the prostate and usually is found accidentally when surgery is done for other reasons, such as for benign prostatic hyperplasia. Cancer cells may be found in only one area of the prostate or they may be found in many areas of the prostate.

Stage II (B)

The tumor may be found by a needle biopsy that is done because a blood test (called a prostate-specific antigen (PSA) test) showed an elevated PSA level or it may be felt in the prostate during a rectal examination, even though the cancer cells are found only in the prostate gland.

Stage III (C)

Cancer cells have spread outside the covering (capsule) of the prostate to tissues around the prostate. The glands that produce semen (the seminal vesicles) may have cancer in them.

Stage IV (D)

Cancer cells have spread (metastasized) to lymph nodes (near or far from the prostate) or to organs and tissues far away from the prostate such as the bone, liver, or lungs

Recurrent

Recurrent disease means that the cancer has come back (recurred) after it has been treated. It may come back in the prostate or in another part of the body.

SCREENING TESTS FOR PROSTATE CANCER

Digital Rectal Examination - A digital rectal examination (DRE) is performed by a doctor during a regular office visit. For this examination, the doctor inserts a gloved finger into the rectum and feels the prostate gland through the rectal wall to check for bumps or abnormal areas. Although this test has been used for many years, whether DRE is effective in decreasing the number of deaths from prostate cancer has not been determined.

Transrectal Ultrasonography - During this examination, high-frequency sound waves are sent out by a probe about the size of the index finger, which is inserted into the rectum. The waves bounce off the prostate gland and produce echoes that a computer uses to create a picture called a sonogram. Doctors examine the sonogram for echoes that might represent abnormal areas. Whether ultrasonography is effective in decreasing mortality from prostate cancer has not been determined.

PSA - For this test, a blood sample is drawn and the amount of prostate- specific antigen (PSA) present is determined in a laboratory. PSA is a marker that, if present in higher than average amounts, may indicate prostate cancer cells. However, PSA levels may also be higher in men who have noncancerous prostate conditions. Scientists are studying ways to improve the reliability of the PSA test.

Because unnecessary treatment due to false screening results could be harmful, research is being done to determine the most reliable method for prostate cancer screening. For example, scientists at the National Cancer Institute are studying the value of early detection by DRE and PSA on reducing the number of deaths caused by prostate cancer.

TREATMENT FOR PROSTATE CANCER

There are treatments for all patients with cancer of the prostate. Five kinds of treatment are commonly used:

- surgery (taking out the cancer)
- radiation therapy (using high-dose x-rays or other high-energy rays to kill cancer cells)
- hormone therapy (using hormones to stop cancer cells from growing)
- chemotherapy (using drugs to kill cancer cells)
- biological therapy (using the body's immune system to fight cancer)

Surgery is one of the common treatments of cancer of the prostate. A doctor may take out the cancer using one of the following operations. Surgery is usually reserved for patients in good health, who are younger than 70 years of age, and who elect surgical intervention.

Radical prostatectomy is the removal of the prostate and some of the tissue around it. The doctor may do the surgery by cutting into the space between the scrotum and the anus (the perineum) in an operation called a perineal prostatectomy or by cutting into the lower abdomen in an operation called a retropubic prostatectomy. Radical prostatectomy is done only if the cancer has not spread outside the prostate. Often before the prostatectomy is done, the doctor will do surgery to take out lymph nodes in the pelvis to see if they contain cancer. This is called a pelvic lymph node dissection. If the lymph nodes contain cancer, usually the doctor will not do a prostatectomy and may or may not recommend other therapy at this time. Impotence and leakage of urine from the bladder can occur in men treated with surgery.
Transurethral resection is a procedure in which the cancer is cut from the prostate using a tool with a small wire loop on the end that is put into the prostate through the urethra. This operation is sometimes done to relieve symptoms caused by the tumor before other treatment or in men who cannot have a radical prostatectomy because of age or other illness.
Cryosurgery is a type of surgery that kills the cancer by freezing it.

Radiation therapy is the use of high-energy x-rays to kill cancer cells and shrink tumors. Radiation may come from a machine outside the body (external radiation therapy) or from putting materials that produce radiation (radioisotopes) through thin

plastic tubes in the area where the cancer cells are found (internal radiation therapy). Impotence may occur in men treated with radiation therapy.

Hormone therapy is the use of hormones to stop cancer cells from growing. Hormone therapy for prostate cancer can take several forms. Male hormones (especially testosterone) can help prostate cancer grow. To stop the cancer from growing, female hormones or drugs called LHRH agonists that decrease the amount of male hormones made may be given. Sometimes an operation to remove the testicles (orchiectomy) is done to stop the testicles from making testosterone. This treatment is usually used in men with advanced prostate cancer. Growth of breast tissue is a common side effect of therapy with female hormones (estrogens). Other side effects that can occur after orchiectomy and other hormone therapies include hot flashes, impaired sexual function, and loss of desire for sex.

Chemotherapy is the use of drugs to kill cancer cells. Chemotherapy may be taken by pill, or it may be put into the body by inserting a needle into a vein or muscle. Chemotherapy is called a systemic treatment because the drug enters the bloodstream, travels through the body, and can kill cancer cells outside the prostate. To date, chemotherapy has not had significant value in treating prostate cancer, but clinical trials are in progress to find more effective drugs.

Biological therapy tries to get the body to fight cancer. It uses materials made by the body or made in a laboratory to boost, direct, or restore the body's natural defenses against disease. Biological treatment is sometimes called biological response modifier (BRM) therapy or immunotherapy.

PREVENTION OF PROSTATE CANCER

Diet and Lifestyle

> A diet high in fat, especially animal fat, may be associated with an increased risk of prostate cancer. Increased dietary intake of fruits and vegetables has been associated with a reduced risk of prostate cancer in some studies.