

TerranearPMC Safety Share

Week of November 11, 2013 – The Prostate

Other than skin cancer, prostate cancer is the most common cancer for American men. The American Cancer Society estimates that about 238,590 new cases of prostate cancer will be diagnosed in 2013, while 29,700 of these cases will result in fatality.

Based on current information, about 1 man in 6 will be diagnosed with prostate cancer during his lifetime. Prostate cancer occurs mainly in older men with about 6 cases in 10 being diagnosed in men aged 65 or older, while rare before age 40. The average age at the time of diagnosis is about 67.

The prostate is a walnut-sized gland located between the bladder and the penis, situated just in front of the rectum. The word, "prostate" is derived from the Greek, *prostates*, literally meaning "one who stands before" or "protector", "guardian." It is a compound tubuloalveolar exocrine gland, excreting alkaline fluid (making up 50% -75% of semen) through a duct, of the male reproductive system in most mammals. It differs considerably among species anatomically, chemically, and physiologically.

There are many conditions of the prostate which require immediate attention. They are:

- Prostatitis: This is an inflammation of the prostate, sometimes caused by infection. There are acute and chronic forms of prostatitis. Treatment usually begins with taking an antibiotic for several weeks. If you begin to feel better, you may have to take the medicine for 2 to 3 months. In some cases, it is treated with antibiotics.
- Enlarged prostate: Called benign prostatic hypertrophy or BPH, **prostate growth affects virtually all men over 50**. Symptoms of difficult urination and increased frequency of urination tend to increase with age. Medicines or surgery can treat BPH.
- Prostate cancer: It's the most common form of cancer in men (besides skin cancer), but only one in 35 men die from prostate cancer. Surgery, radiation, hormone therapy, and chemotherapy can be used to treat prostate cancer. Some men choose to delay treatment, which is called watchful waiting.

The most prominent diagnostic test to evaluate the prostate is the digital rectal examination or DRE. While not something most men look forward to, it is still considered very reliable to detect an enlarged prostate, lumps or nodules associated with prostate cancer, or tenderness from prostatitis. Another examination is the prostate-specific antigen or PSA. This is a non-invasive technique (i.e. blood test) based on the prostate's ability to produce this antigen. If PSA is high, prostate cancer is more likely, but an enlarged prostate can also cause a high PSA. PSA is an enzyme produced in the prostate designed to liquefy semen. Most men have PSA levels under four nanograms per milliliter (ng/mL), which, in the past, has traditionally been used as the cutoff for concern about the risk of prostate cancer. Obviously, the larger the prostate, the greater the amount of PSA produced and therefore, serves as a potential warning sign. Men with prostate cancer often have PSA levels higher than four, although cancer is a possibility at any PSA level. According to published reports, men who have a prostate gland that feels normal on examination and a PSA less than four have a 15% chance of having prostate cancer. Those with a PSA between four and 10 ng/mL have a 25% chance of having prostate cancer and if the PSA is higher than 10, the risk increases to 67%.

Due to the findings from more recent studies, some medical experts recommend lowering the PSA cutoff level. Some researchers encourage using 2.5 or 3 ng/mL as a cutoff for normal values, particularly in

younger patients. Younger patients tend to have smaller prostates and lower PSA values, so any elevation of the PSA in younger men above 2.5 ng/mL is a potential concern.

Just as important as the PSA number is the trend of that number (whether it is going up, how quickly, and over what period of time). It is important to understand that the PSA test is not perfect. Most men with elevated PSA levels have noncancerous prostate enlargement, which is a normal part of aging. Conversely, low levels of PSA in the bloodstream do not rule out the possibility of prostate cancer. However, most cases of early prostate cancer are found by a PSA blood test.

Another method used to examine the prostate is ultrasound or transrectal ultrasound. This is a technique that uses sound waves to detect objects via reflective properties, thereby determining prostate size. An ultrasound probe is inserted into the rectum, bringing it close to the prostate. Ultrasound is often done with a biopsy to test for prostate cancer. A prostate biopsy is considered to be a much more thorough and definitive analysis, however, this procedure requires significantly greater preparation on the part of the patient and medical staff. A prostate biopsy involves a needle being inserted into the prostate to take tissue samples followed by laboratory analysis.

Treatment for an enlarged (non-cancerous) prostate can involve the use of alpha-blockers, as they tend to relax the muscles around the urethra in men. Urine then flows more freely. While medication is usually the first step for treatment, surgery may be the only option to improve symptoms and prevent complications.

Prostate Cancer Treatment typically involves surgery known as a prostatectomy where the prostate is removed with the goal of removing all the cancer. Other methods include:

- Radiation therapy: Radiation kills prostate cancer cells while minimizing damage to healthy cells.
- Radioactive seed implants: Instead of radiation pointed at the prostate from outside the body, radioactive seeds can be implanted into the prostate to kill cancer cells.
- Cryotherapy: Involves killing prostate cancer cells by freezing them.
- Hormone therapy: Prostate cancer cells grow in response to hormones. Hormone therapy helps block that effect.
- Chemotherapy: When prostate cancer is advanced, chemotherapy may help reduce the cancer's spread.

Because prostate cancer is often slow-growing, men of advanced years (75 or older), may be given the option to simply hold off on treatment as many times the advanced stage of prostate cancer may be predicted to occur when the patient is well into their 100's, and the treatment may be too aggressive for older men to cope.

Because prostate cancer receives considerable attention in the United States, medical advances are always being made. As such, clinical trials may be a feasible option. Through prostate cancer clinical trials, researchers test the effects of new medications on a group of volunteers with prostate cancer.

Because all these treatment methods have an inherent associated risk, the medical community strongly urges **men – especially those over the age of 50 - to be proactive and have regular scheduled examinations.**

It may be helpful to avoid alcohol, caffeine, and spicy foods such as hot peppers, chili, pickles, and salsa, especially if they make your symptoms worse.

There's a bit of magic in everything, and some loss to even things out.

Lou Reed (1942 – 10/27/2013)