

Prostate Cancer 101: Testing and Treatment

Prostate Cancer for the Lay Public

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The prostate gland is a small organ about the size of a walnut which sits between the bladder and the urethra. Its major function is to make fluid to nourish semen; it has a role in controlling continence. This little organ has the potential to form a cancer. As you heard, approximately 235,000 new cases arise each year in the U.S., which comes down to one male every three minutes. Men still die of the disease; there is one death every 18 minutes. Fifteen years from now, in 2025, the number of men who are going to die from prostate cancer will double; we are going to have 60,000 men dead of this disease in 2025. That is not a decrease but rather an increase in the death rate.

Are there signs and symptoms of prostate cancer? Unfortunately, there really are not. If you do get blood in the urine, if you do get bony pain, most of the time, that is too late. The most common sign that we have is an elevated PSA. Prostate cancer is a disease of any age. There are more men getting prostate cancer, so we have to be aware of this and we have to educate our fellow men. How do we describe prostate cancer? The Gleason's grade is a way of looking at the disease under the microscope; this score identifies the aggressiveness of the cancer. The Gleason score assigned ranges from two to ten; the most common number seen is a Gleason six, which is a localized prostate cancer. In terms of staging, most of the cancers that we detect are confined to the prostate; it is not that common to have metastatic disease in the year 2010.

Who is at risk? The older you are, the more chance you have of getting prostate cancer. Factors contributing to a higher chance of developing prostate cancer include African-American race, diet, and family history. What can be done to have a healthy prostate? Go outside, get sunlight, drink green tea, eat soy products, lycopenes, and pomegranate juice. I no longer tell people about vitamin E and selenium since the SELECT trial did not show a benefit to that. Regarding prostate cancer detection, the two main components are DRE and PSA, which may lead to transrectal ultrasound with biopsy.

The absolute normal value for PSA is different depending on a man's age. PSA should be between zero and 2.5 for a man in his 40s, up to 6.5 for a man in his 70s. Best practice statement for PSA from the American Urological Association states that every man should have a baseline PSA sometime in his 40s. The higher the PSA, the greater the chance of having prostate cancer. In terms of organ confined disease, the lower the PSA, the more chance of having prostate cancer confined only to the prostate.

Assuming a man is diagnosed with a localized prostate cancer, what are his options? This is a multidisciplinary and individualized approach to the treatment of prostate cancer; not every option is applicable to every man and his cancer. Options range from active surveillance to surgery, cryosurgery, external beam radiation therapy or other forms of radiation therapy, and new technology.

Statistically, in the U.S., there are approximately 235,000 new cases for 2010. How are they divided up in terms of treatment? The number is approximately equal for radiation and surgery, while about 55,000 men choose active surveillance and that number is rising. You are the boss in prostate cancer; every man should remember that and ask specific questions about how a treatment is going to affect him, what are the odds of surviving disease, and what are the side effects associated with treatment.

Active surveillance is not watchful waiting. One does not want to just sit back and wait but rather be active in terms of treatment. Criteria for active surveillance vary among centers, but most include a Gleason score of six; anything higher than seven should not be part of a surveillance program. A man with a large amount of disease in the prostate is not a candidate for active surveillance. One must be prepared to undergo follow-up and rebiopsy at various time points in the future; usually the first one comes about one year after initial diagnosis.

Robotic surgery is the newest way of using technology to operate on the prostate. In the U.S., the majority of surgery today is performed with the Da Vinci robot. The robot makes quality of life better post-surgery. In terms of erectile function, it probably is equal to the best-of-hands during open surgery. In terms of control of urination, it offer speedier recovery to continence.

Two main concerns when undergoing any form of treatment is having erections and controlling urinary flow. Other factors which can influence erections include increased alcohol use, diabetes or other endocrine disorders, smoking or obesity, all of which must be taken into account when counseling men on erectile function following any type of treatment. Likewise, many men already have urinary incontinence but do not talk about it. Specific questions must be asked when treating a man for prostate cancer to determine what his baseline is.

Radiation therapy is another option. Different ways of delivering radiation are available, including outside or external beam, implantation of radioactive seeds, or implantation of temporary radiation such as high dose rate implants or combination treatments. Cryosurgery, or freezing the prostate, is yet another form of treatment for localized prostate cancer, involving putting probes into the prostate; ice balls form at the end of the probes and drop the temperature down to -20 degrees Centigrade. With technological improvements, cryosurgery is an exact technology and a good form of treatment. Novel technologies include high intensity focused ultrasound, which is nonsurgical and not approved in the U.S. but in clinical trials. A new approved treatment, a form of immunotherapy called Provenge, uses one's own immune system to fight the disease.

It is important for the patient to know he is in the driver's seat, and there is a team that works around him to counsel. Treatment of prostate cancer is very individualized, and many options are available.

In response to audience questions, there is a move towards doing focal cryosurgery; depending on the amount of disease in the prostate, one could potentially treat only that area of disease and thereby avoid treating the neurovascular bundles with less impact on erectile function. Also, an experienced surgeon who does open surgery can have outcomes equal to those of an experienced surgeon who does robotic surgery. Very good outcomes can be attained if one becomes comfortable with new technology; experience is the key. Also, there are centers in the U.S. which use such technology as protons, heavy metals, and cyberknives.