Prostate Cancer: Pearls and Myths from the Urologists

Don’t men die with prostate cancer and not because of it?
Every year 189,000 men are diagnosed with prostate cancer, making it the second most-commonly diagnosed cancer behind non-melanoma. It is also has the second highest death rate behind lung cancer at 30,000 deaths per year.

Shouldn’t men have symptoms of cancer?
Most men will be asymptomatic. Prostate cancer is usually diagnosed by an elevated PSA and/or abnormal digital rectal exam.
- Irritative symptoms (frequency, urgency, nocturia) are more common with BPH, prostatitis, or other inflammatory or infectious conditions of the prostate.
- New onset erectile dysfunction should raise suspicion of prostate pathology because enlargement of the gland can cause encroachment on the neurovascular bundles in the periprostatic tissue.
- A few patients will present with bone pain or signs of spinal cord compression in advance disease.

Who should I screen?
A very controversial issue. In general, if you are going to screen you should target patients in the age range of 50-70, as these patients have a higher likelihood of developing advanced disease given their longer life expectancy. Most do not favor screening patients in their 80s or in patients who have a less than 10 year life expectancy.

 Doesn’t a PSA of over 10 pretty much mean cancer?
No. PSAs can be elevated from Foley catheter placement, cystoscopy, UTIs, prostatitis, and other conditions. It could even be as high as 100! Repeat the PSA after several days before you panic.

What is the half-life of PSA?
Half-life is 5-7 days. This will help you determine how quickly the PSA should fall if the patient is responsive to therapy.

What is “free PSA” and when should I send it?
Free PSA measures the amount of PSA that is not bound to albumin or other proteins. The lower your free PSA the higher the likelihood that you have prostate cancer. In fact, if your free PSA is <10%, there is over 50% chance that you will have cancer on prostate biopsy. You should send the free PSA when the regular PSA is between 4-10.

Isn’t prostate biopsy terribly uncomfortable?
Actually, it can be done in the outpatient setting, takes about 3-4 minutes, and requires no anesthesia or sedation. The worst part is having the probe in your bottom (similar discomfort with the rectal exam). The 6-10 biopsy specimens feel like “a rubber band snapping on your hand”. 85% of cancers will be in the peripheral zone.

What is that Gleason score?
Dr. Gleason is a pathologist from Minneapolis who came up with a scoring system for the histologic appearance of prostate cancer. It consists of 2 numbers from 1 to 5 that are added together. 1 is the most differentiated cell type and 5 is the least differentiated. The first of the 2 numbers you hear is what the majority of the tumor cells are like. The second number is an assessment of the 2nd most common tumor population. A total score of 2-4 is considered low grade, 5-7 medium grade cancer, and 8-10 high grade aggressive cancer. Prognosis is based on the Gleason score.

Do I need to get a bone scan on every patient with an elevated PSA?
No. In patients with PSAs less than 10, the likelihood of organ confined disease is 70-80% versus less than 50% for patients with PSA greater than 10. In general, bone scans should be performed on patients with PSAs greater than 10.

Are there any medicines that lower your PSA?
For the following medications, you should double their PSA lab value, as they will lead you to believe that the PSA is lower than it actually is were they not taking the medications.
- Saw palmetto: herbal medicine used for prostatitis
- **Proscar** (finasteride) a 5-alpha reductase inhibitor used for BPH. It shrinks the prostate 30% after 6 months of therapy. Recall that 5-alpha reductase inhibitors stop the conversion of testosterone to dihydrotestosterone.

- **Propecia** (finasteride): This is the same as proscar but in 1mg rather than 5 mg dose. This is used to restore hair growth in men.

*What’s the reality about impotency and incontinence rates for radical prostatectomy?*

In organ confined disease, you can either do brachytherapy (radiation beads in the prostate) or radical prostatectomy. There is plenty of controversy about which has fewer side effects and which is more effective. Ultimately, incontinence rates and impotency rates are dependent on the surgeon’s skill, so pick your doctor carefully!

- Incontinence: after surgery, gross incontinence (requiring pads) is <5%. In radiation therapy it is <2%.
- Impotence: In nerve sparing radical prostatectomy, the average impotency rate is about 50%. In a skilled surgeon’s hands, the rate can be as low as 15-20%. For radiation therapy, the impotency rate initially will be low. After 2 years, however, the impotency rate is about 50%.

*Once you have recurrent or metastatic disease, what can you do?*

Basically, you want to stop androgen production. This can be done with orchiectomy or with medications that are GNRH-agonists. The GNRH-agonists will initially increase FSH, LH, and testosterone, but then feedback inhibition will down regulate production.

- **Orchiectomy**: Dr. Charles Huggins from the University of Chicago won the Nobel Prize for discovering that castration of dogs caused regression of prostate cancer. This is still a very effective therapy for patients today. Cost $3000-4000.
- **GNRH-agonists**: Leuprolide (lupron) is the most common and is given monthly. Since initially levels of testosterone rise, you can see a flare of disease before it improves. Each shot costs about $300.

*What are the main side effects of androgen blockade?*

Hot flashes are the most common complaint and are slightly less severe with orchiectomy than this medicaitons. Low dose estrogen or megace can help. Gynecomastia and lethargy are also cited. Many men worry about loss of libido before therapy and indeed do experience this. Many physicians note that patients care less about the loss of libido later on.

*What about this thing called “complete androgen blockade”?*

Recall that 30% of the body’s androgens are produced in the adrenals, with the rest being produced in the testes. To completely block influence of androgens on the prostate, you can add an antiandrogen which essentially blocks the androgen receptors. There are 3 kinds (flutamide, bicalutamide, nilutamide). These pills cost about $300/month and are often not covered by insurance. In significant disease, these medications should be used during the first two weeks of GNRH-agonist therapy to prevent the flare of disease (see above).

*Should I use a bisphosphonate?*

This is a bit controversial, as prostate cancer is mostly osteoblastic, although there is an element of osteoclastic activity. It has been shown to reduce the bone thinning effects of androgen blockade and to delay the degree of skeletal disease.

*What do I do once a patient has metastatic bone disease?*

Local beam radiation therapy can help reduce pain and progression in that area. There are other full body radiation therapies with isotopes, but these are not commonly used. If the patient hasn’t undergone androgen blockade, he should receive hormonal treatment. Unstable lesions in the long bones may need to be pinned.

*What do I do if there is impending spinal cord compression?*

Urgent orchiectomy is frequently necessary. Castration levels of androgens will be achieved in less than 24 hours. While the patient is getting ready for the OR, give high dose ketoconazole, as this achieves castration level of androgens in just a few hours. In not only inhibits androgen synthesis, but also has a direct cytotoxic effect on prostatic cancer cells. Call your neurosurgeons as well for help.