

نحوه اپروچ به بیمار آقای ۶۳ ساله با PSA بالا در درمانگاه پزشکی خانواده

استاد راهنما: آقای دکتر طاوسیان عضو هیئت علمی گروه اورولوژی

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chief complaint

→ آقای ۶۳ ساله با شکایت لمس توده در اسکروتوم راست



Present illness

بیمار آقای ۶۳ ساله که با شکایت لمس توده در ناحیه اسکروتوم راست به درمانگاه پزشکی خانواده مراجعه کرده است. در سونوگرافی همراه بیمار، توده کیستیک خوش خیم در اسکروتوم راست گزارش شده است. همچنین بیمار از کاهش فورس ادرار و ناکچوری شکایت دارد.

دیزوری -

درد لگن و پرینه -

تب و لرز -

کاهش وزن -

سابقه تروما -



➤ PMH: -

➤ DH: -

➤ AH: -

➤ HH: -

➤ FH: -



DDX

Lower urinary tract symptoms (LUTS)

- BPH
- Bladder outlet obstruction (BOO)
- UTI
- Prostatitis
- Interstitial cystitis
- Chronic pelvic pain syndrome (CPPS)

Elevated PSA

- BPH
- Prostate cancer
- Prostatitis
- Perineal trauma



LUTS (initial evaluation)

- **History** – the onset, duration, and severity of symptoms / Medications should be reviewed, as antidepressants, diuretics, bronchodilators, and antihistamines are associated with LUTS / any previous neurologic symptoms, injury, or disease
- **Physical Examination** – evaluation of the abdomen, pelvis, perineum, and a focused neurological exam / Digital rectal exam should be performed to estimate prostate size and detect any abnormalities suggestive of prostate cancer
- **U/A** – evaluate for hematuria, pyuria, and bacteriuria
- **PSA** – only in patients with life expectancy greater than 10 years. Another indication for measuring PSA is as a proxy for prostate volume. PSA is also needed before treatment with a 5-alpha reductase inhibitor, and monitoring for prostate cancer should be done during treatment, with the understanding that these medications effect the PSA levels.



Patient's tests results

- ▶ Prostate specific antigen = 63
- ▶ Free PSA = 4.1
- ▶ Free PSA / PSA ratio = 0.07



Indications for specialist referral

- Patients <45 years old
- Abnormality on prostate examination
- Presence of hematuria in the absence of infection
- Failure to respond to initial treatment for LUTS
- Patients who desire surgical treatment
- Patients with incontinence
- Patients with severe symptoms
- PVRs >300 to 400 mL that are increasing / palpable bladder
- Abnormal PSA




Prostate cancer


- ▶ Prostate cancer is among the most common cancers in men worldwide, with an estimated 1,600,000 cases and 366,000 deaths annually. The overall five-year survival rate is over 98 percent.



Risk factors

- **Age:** Clinically diagnosed prostate cancer rarely occurs before the age of 40, but the incidence rises rapidly thereafter, peaking between the ages 65 and 74.
- **Ethnicity:** Prostate cancer is more common in Black compared with White or Hispanic men


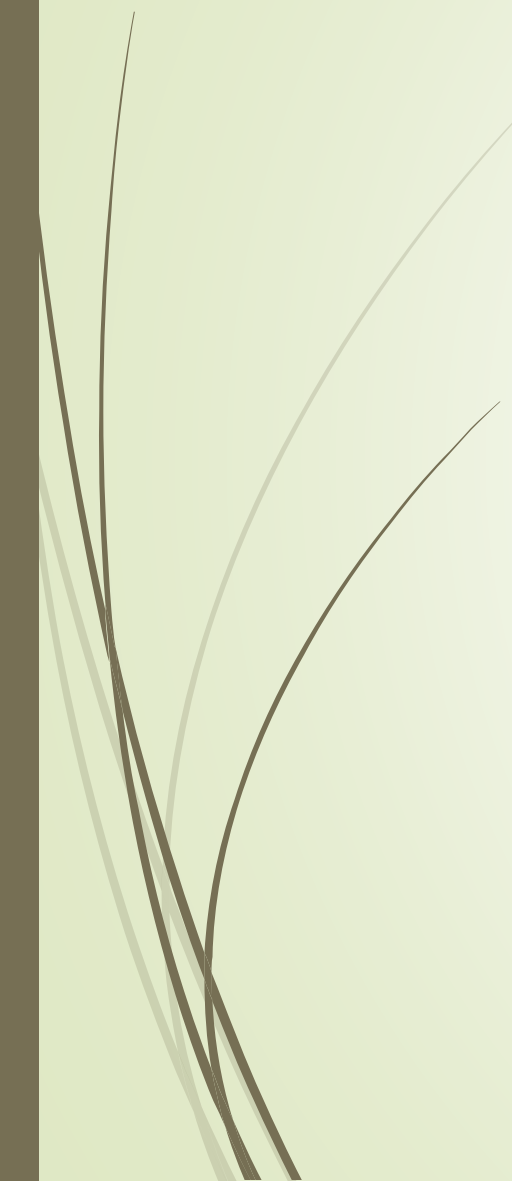
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- **Family history and genetic factors:** Men with a family history of prostate cancer on either side of the family, particularly those with a first-degree relative who was diagnosed at age <65 years / having a family history of other potentially heritable cancers (eg, breast cancer diagnosed at age <50 years, male breast cancer, colorectal cancer, ovarian cancer, pancreatic cancer, melanoma)
 - **Vegetables:** A diet low in vegetables may be another risk factor for prostate cancer

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- **Animal fat:** intake of large amounts of alpha-linolenic acid and low amounts of linoleic acid appear to be associated with increased risk; this combination is common in red meat and some dairy products
 - **Obesity:** increasing BMI is associated with a decrease in serum PSA which may minimize the diagnosis of prostate cancer based on PSA screening



Clinical presentation

- ▶ **Spectrum of disease at detection** – Clinical manifestations of prostate cancer are frequently absent at the time of diagnosis. At the time of diagnosis, 78 percent of patients have localized cancer, regional lymph node involvement is present in 12 percent, and 6 percent have distant metastases.

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- ▶ **Symptoms** – Uncommonly, prostate cancer may present with nonspecific urinary symptoms, hematuria, or hematospermia; however, these symptoms are more commonly due to nonmalignant conditions. Among the six percent of patients whose prostate cancer is metastatic at the time of diagnosis, bone pain may be the presenting symptom. Bone is the predominant site of disseminated prostate cancer, and pain is the most common manifestation of bone metastases.

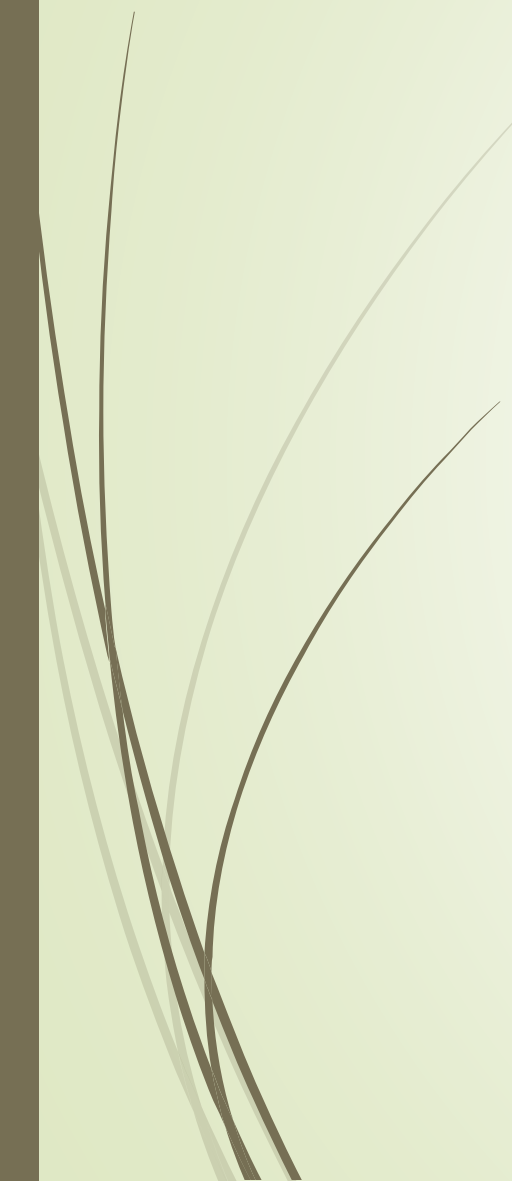



➤ **Signs** –

- ✓ **PSA testing:** The likelihood of prostate cancer increases with a more elevated PSA value. However, PSA is not specific for malignancy, and an elevated PSA can occur in a number of benign conditions; additionally, a PSA result in the normal range does not rule out the possibility of prostate cancer. Despite its lack of specificity for prostate cancer, PSA remains the most commonly used and most valuable test for early detection of prostate cancer. PSA testing in a man without a history of prostate cancer is most often done for screening purposes, although PSA is sometimes performed as part of an evaluation of symptoms.



Abnormal PSA value:


- ❖ compare the patient's PSA result with the age-specific reference range for the patient's age:
 - 40 to 49 years – 0 to 2.5 ng/mL
 - 50 to 59 years – 0 to 3.5 ng/mL
 - 60 to 69 years – 0 to 4.5 ng/mL
 - 70 to 79 years – 0 to 6.5 ng/mL
 - ❖ PSA above the upper value for the age range
 - ❖ PSA above the midpoint for the age range
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- ❖ compare the patient's PSA result with the prior year's PSA, if available
 - ❖ PSA increased more than 0.75 ng/dL in one year, even if the PSA value is not above the age-specific range
 - ❖ Some clinicians use a single total PSA cutoff of 4.0 for all age groups



Medications lowering PSA:

- 5-alpha-reductase-inhibitors (Finasteride / dutasteride) : 50% or greater decrease in PSA during the first 3 to 6 months of therapy
- NSAIDs and Acetaminophen
- Statins
- Thiazides

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- ✓ **DRE (digital rectal examination):** may detect prostate nodules, induration, or asymmetry that can occur with prostate cancer. However, prostate cancer is often not detectable by DRE, because DRE can only detect tumors in the posterior and lateral aspects of the prostate gland.

Tumors not detected by DRE include the 25 to 35 percent,

1. not reachable because they occur in other parts of the gland,
2. the small, stage T1 cancers that are not palpable



Urologic evaluation

- ▶ **Repeating the PSA** – Prior to further evaluation, we repeat an elevated or increased PSA test in a few weeks to confirm that the level remains elevated. If the repeated PSA is within the normal expected values for age, and is not increased more than 0.75 ng/dL compared with the prior year value, no further evaluation at that time is necessary, unless there is a palpable nodule, induration, or asymmetry on DRE.



► **Decision to biopsy** – we usually proceed to biopsy if:

Life expectancy is at least 10 years

AND

PSA is elevated above the range for the patient's age cohort, or PSA has increased more than 0.75 ng/mL over one year, or there is a palpable concerning abnormality on DRE



➤ **Potential adjunctive laboratory testing:**

- 1. PSA density:** PSA density is the ratio of PSA level (determined by blood testing) to prostate volume (measured using transrectal ultrasound). PSA density <0.15 ng/mL/cc is considered favorable.
- 2. Free or bound PSA:** Free PSA can be measured and used to calculate the ratio of free to total PSA (f/t PSA). An f/t PSA <10 to 15 percent is highly suspect for prostate cancer, whereas an f/t PSA >25 percent is highly likely to be due to BPH. F/t PSA ratios are of most value when deciding whether a repeat biopsy is necessary in an older patient who has a prior negative biopsy, but a PSA level that is still suspicious.



➤ **Imaging:**

1. MRI

2. Transrectal ultrasound (TRUS): even if TRUS does not show concerning findings, prostate biopsy is warranted if indicated based on other factors (eg, PSA results or DRE), because TRUS misses a substantial number of tumors.



Patient's MRI

- ▶ IMP: suspicious inner gland nodules: Rt. Sided nodule (PI-RADS: 2), Lt. sided nodule (PI-RADS: 4). Peripheral zone lesion (PI-RADS: 3)




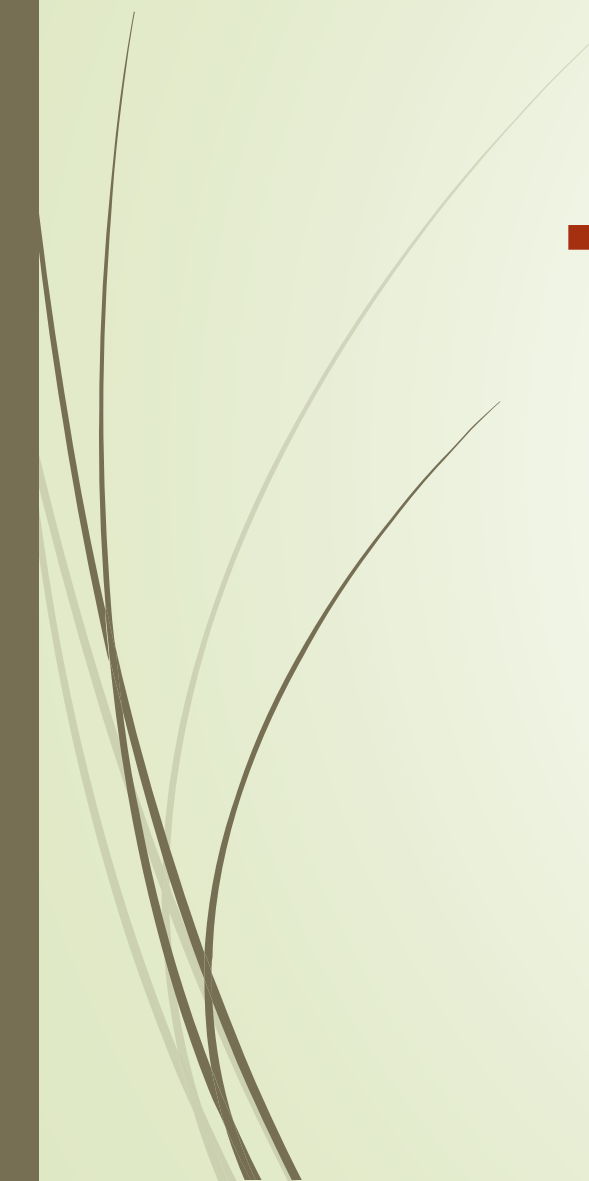
Patient's whole body bone scan

- ▶ Heterogeneous pattern along the lumbar spine (more uptake at the level of L3-L4 vertebrae) and mild linear uptake in posterior aspect of 8th (or 7th ?) rib are suspicious for osteoblastically active bony lesion (metastasis / advanced degenerative changes and traumatic event, respectively). However due to unknown primary pathology further evaluation and radiological correlation (especially lumbar spine MRI) are strongly recommended.
- ▶ otherwise, no clear evidence in favor of osteoblastically active bony lesion throughout the skeleton.



Screening for prostate cancer


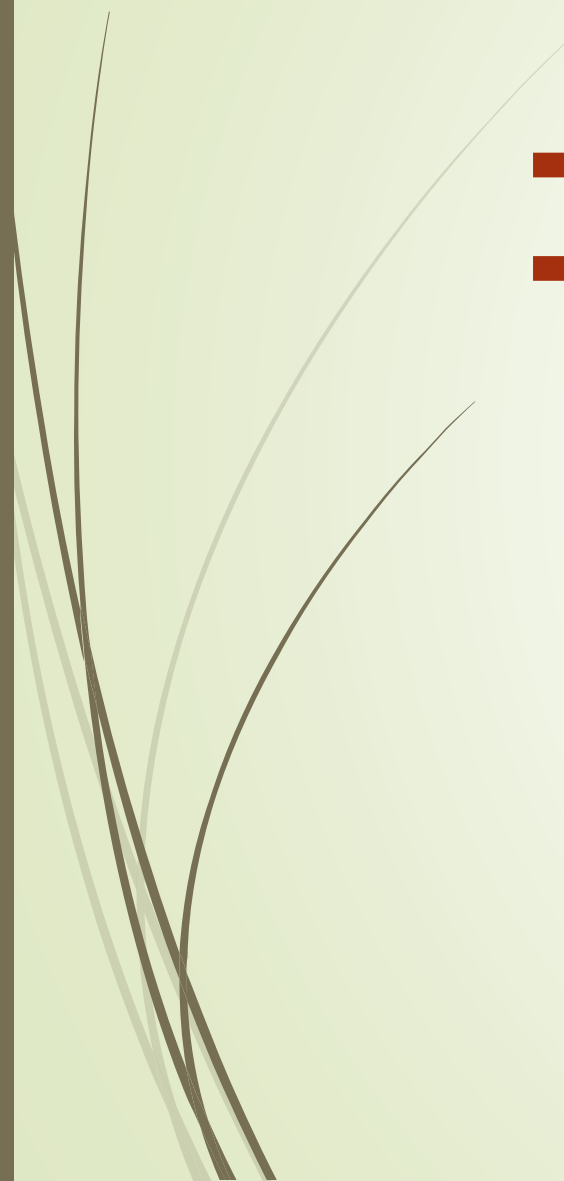
- **Risk-adjusted approach:** based on race, age and family history
 1. Average-risk men – at age 50
 2. BRCA carriers – at age 40
 3. Lynch syndrome (hereditary nonpolyposis colorectal cancer) – at age 40
 4. Other higher-risk men (black men / men with a family history of prostate cancer particularly in a first-degree relative diagnosed at age <65 years) – at age 40 to 45

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- ▶ **Screening with PSA:** DRE is generally not used as a screening test for prostate cancer. Studies have estimated that PSA elevations may precede clinical manifestations for prostate cancer by 5 to 10 more years.



► **Reasons to temporarily defer PSA testing:**

1. Bacterial prostatitis – 6 to 8 weeks after symptoms resolve
2. Acute urinary retention or urethral instrumentation – at least 2 weeks
3. Recent prostate biopsy or TURP- at least 6 weeks

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- **Frequency of PSA testing** – every 2 to 4 year
 - **Discontinuing screening** – we do not screen men for prostate cancer who have a life expectancy of <10 years. For men with a life expectancy of at least 10 years, most clinicians offer screening up to age 70 years (69 – 75)



سطوح پیشگیری

Primordial prevention

برگزاری کلاس های آموزشی برای پزشکان جهت مدنظر داشتن انجام غربالگری مناسب
برای افراد بر اساس ریسک فاکتورها

تهیه گایدلاین های دقیق و مناسب برای غربالگری کنسر پروستات و نیز اپروچ به بیماران آقا
با علائم ادراری



Primary prevention

■ آگاهی دادن به افراد جامعه در مورد ریسک فاکتورهای کنسر پروستات و انجام غربالگری بر اساس آن

Secondary prevention

- غربالگری افراد با life expectancy بیشتر از ۱۰ سال با تست PSA هر ۲ تا ۴ سال
- تعیین ریسک بیماری در افرادی که کانسر پروستات در آنها تشخیص داده شده و انتخاب درمان استاندارد از جمله
radical prostatectomy, radiation therapy, active surveillance

Tertiary prevention

در افرادی که جهت درمان کنسر تحت رادیکال پروستاتکتومی قرار میگیرند عوارضی از جمله بی اختیاری ادرار و erectile dysfunction رخ میدهد. در مورد بی اختیاری ادرار در ماه های اول اقدامات کانزرواتیو مثل تقویت عضلات کف لگن و بیوفیدبک انجام میشود تا به تدریج عملکرد اسفنکتر برگردد. در موارد پایدار و قابل توجه از درمان هایی چون urethral sling procedure و artificial urinary sphincter استفاده کرد. در موارد erectile dysfunction نیز درمان های موجود شامل PDE-5 inhibitors، penile injection therapy، vacuum erection devices و implantation of a penile prosthesis میباشد.

Quaternary prevention

عدم غربالگری افراد با life expectancy کمتر از ۱۰ سال با توجه به سیر آهسته کنسر پروستات (با توجه به اینکه این افراد نفع کمی از غربالگری میبرند و در این میان آسیب های ناشی از نتایج مثبت کاذب غربالگری از جمله بیوپسی پروستات، اضطراب و عوارض درمان به آنها تحمیل میشود)