
بنام خداوند جان و خرد

بنام خدا

نحوه برخورد با احتباس ادراری
در یک آقای ۵۸ ساله از دیدگاه پزشکی خانواده

استاد راهنما آقای دکتر طاووسیان متخصص ارولوژی و عضو هیات علمی

ارایه دهنده کورش فرزین دستیار پزشکی خانواده

بهمن ۱۴۰۱

- بیمار آقای ۵۸ ساله که با عدم توانایی ادرار کردن و درد زیر شکم از شب قبل از مراجعه که بتدریج افزایش یافته بود علایم عمومی مثل تب و لرز و درد پهلو ها را ذکر نمیکند سابقه چنین حالتی را قبلا نداشته علایم ادراری خاصی از جمله ناکچوری زور زدن در هنگام ادرار کردن و احساس ادرار باقیمانده در مثانه بعد از ادرار کردن را ذکر نمیکند
- PMH - سابقه عمل جراحی و سنگ و عفونت ادراری را ذکر نمیکند سابقه فشار خون از ۵ سال پیش که تحت درمان است و در حال حاضر کنترل است سابقه چنین مشکلی را در خانواده ذکر نمیکند و سابقه ای از کانسر پروستات را در بستگان درجه اول ندارد
- Drug H- سابقه مصرف لوزارتان ۲۵ روزی دوبار از ۵ سال پیش ومصرف داروی خاص دیگری را ذکرنمیکند شب گذشته بخاطر درد یک عدد قرص ژلوفن ۴۰۰ مصرف کرده است
- Habitual H – مصرف سیگار ازحدود ۳۰ سال پیش تقریبا روزانه یک پک مصرف الکل و مواد مخدر را ذکر نمیکند
- Family H – متاهل دارای دو فرزند شغل راننده پدر و مادر در قید حیات سابقه دیابت در مادر و فشار خون در هر دو والدین را میدهد مشکل پروستات را در پدر و برادرها که کوچکتر از او هستند را ذکر نمیکند

- Physical Exam - فشار خون ۱۳۵/۸۰ ضربان ۸۸ وزن ۹۵ کیلو دور شکم ۱۰۱ سانتیمتر قد ۱۷۲ سانت و نمایه توده بدنی ۳۲ دمای بدن ۳۷/۵
- ظاهر بیمارعرق کرده مضطرب و دردمند در معاینه سرو گردن یافته نداشت سمع قلب و ریه نرمال بود در معاینه شکم مقداری گاردینگداشت در لمس ناحیه سوپراپوبیک مثانه متورم قابل لمس بود گه در معاینه درد ناک و تندر بود cva تندرنس نداشت اندامها نرمال بدون ادم و دفورمیتی
-

- Paraclinic
- HB= ۱۳ Hct= ۴۳ Plat=۱۸۰۰۰۰ CRp= ۱+ WBC= ۸۷۰۰ neu=۴۵%
- BUN=۲۵ CREA= ۱/۴ Na=۱۳۵ K=۳/۲ Bs glucometer = ۱۲۰

Acute urinary retention

- Acute urinary retention (AUR) is the inability to voluntarily pass urine.
- most common urologic emergency
- AUR is rare in women
- The female to male incidence rate ratio is ١:١٣.
- Most frequently in men over age ٦٠
- ١٠ percent of men over the age of ٧٠
- One-third of men in their ٨٠s
- The most common mechanisms are outflow obstruction, neurologic impairment, or an inefficient detrusor muscle.
- Other causes include medications, infection, and trauma.

• PATHOGENESIS AND ETIOLOGIES

• Outflow obstruction

- In men, AUR is most often secondary BPH.
- Other causes of outflow obstruction in men include constipation, prostate or bladder cancer, urethral stricture, urolithiasis, phimosis, or paraphimosis
- In females, obstruction is generally secondary to anatomic distortion, including pelvic organ prolapse (eg, cystocele or rectocele), pelvic masses, or, less commonly urethral diverticulum

• Neurologic impairment

- Spinal cord injuries from trauma, infarct or demyelination, epidural abscess and epidural metastasis, Guillain-Barré syndrome, diabetic neuropathy, and stroke

• Inefficient detrusor muscle

- **Medications-** anticholinergic and sympathomimetic drugs
- **Infection**
- **Trauma**
- **Other-** postoperatively or in the postpartum period

- **CLINICAL PRESENTATION**
- Lower abdominal and/or suprapubic discomfort, restless and considerable distress
- In older adult patients, particularly those with dementia or other forms of cognitive impairment, AUR may present as an acute change of mental status
- Chronic urinary retention is often painless
- Acute-on-chronic urinary retention may present with overflow incontinence
- **EVALUATION OF SYMPTOMS**
- History and physical examination
- History of retention or lower urinary tract symptoms , prostate disease (hyperplasia or cancer), pelvic or prostate surgery, radiation, or pelvic trauma.
- The patient should also be asked about the presence of hematuria, dysuria, fever, low back pain, neurologic symptoms, or rash.
- A complete list of medications
- The initial physical examination should include lower abdominal palpation.

American Urological Association (AUA) urinary symptom score/International Prostate Symptom Score (IPSS)

Questions to be answered	Not at all	Less than ١ time in ٥	Less than half the time	About half the time	More than half the time	Almost always	Your score
١. Over the past month, how often have you had a sensation of not emptying your bladder completely after you finished urinating?	٠	١	٢	٣	٤	٥	٠ to ٧: Mild symptoms
٢. Over the past month, how often have you had to urinate again less than ٢ hours after you finished urinating?	٠	١	٢	٣	٤	٥	٨ to ١٩: Moderate symptoms
٣. Over the past month, how often have you found you stopped and started again several times when you urinated?	٠	١	٢	٣	٤	٥	٢٠ to ٣٥: Severe symptoms
٤. Over the past month, how often have you found it difficult to postpone urination?	٠	١	٢	٣	٤	٥	
٥. Over the past month, how often have you had a weak urinary stream?	٠	١	٢	٣	٤	٥	
٦. Over the past month, how often have you had to push or strain to begin urination?	٠	١	٢	٣	٤	٥	
٧. Over the past month, how many times did you most typically get up to urinate from the time you went to bed at night until the time you got up in the morning?	٠	١	٢	٣	٤	٥	

- **DIAGNOSIS**
- demonstrating retained urine by either bladder ultrasound or catheterization
- A bladder ultrasound is a good first choice for patients who are not in extreme distress
- A bladder volume on ultrasound ≥٣٠٠ cc suggests urinary retention
- If the patient is in discomfort and unable to void, a urethral catheter should be placed regardless of the estimated volume on bladder ultrasound.
- Patients with volumes < ٢٠٠cc likely do not have acute urinary retention. These patients should undergo further evaluation by a urologist in an outpatient setting.
- **POST-DIAGNOSTIC EVALUATION**
- Physical examination: rectal, pelvic, neurologic evaluation
- A normal prostate examination does not preclude BPH as a cause of obstruction.
- Laboratory studies : u/a, u/c, CBC, serum chemistries and creatinine,
- Do not check a PSA as it is expected to be elevated during an episode of AUR

- **ACUTE MANAGEMENT**
- Bladder decompression by catheterization(urethral or suprapubic), with urinalysis and culture.
- A ١٤ to ١٨ gauge French catheter should be inserted as first-line in most patients with AUR
- If initial urine volume of less than ٢٠٠ cc, immediate catheter removal and subsequent observation for recurrence is usually appropriate.
- If this volume exceeds ٤٠٠ cc, the catheter is typically left in place.
- ٢٠٠<urine<٤٠٠Patient comorbidities, mental status, ability to return to the hospital, back pain or neurologic symptoms, history of malignancy, intravenous drug abuse,
- leave the catheter in place for three to five days
- Urethral catheterization is contraindicated in patients who have had recent urologic surgery and suprapubic catheterization

- **Complications of decompression**
- Hematuria ۲ to ۱۶ percent
- Transient hypotension
- Post obstructive diuresis
- **Indications for hospitalization**
- Urosepsis, malignancy, acute myelopathy, acute renal failure
- Prophylactic antibiotics are not indicated for patients with an indwelling urinary catheter.

Pharmacologic agents associated with urinary retention

- **Sympathomimetics (alpha-adrenergic agents)**
- Ephedrine sulfate, Phenylephrine HCl, Phenylpropanolamine HCL, Pseudoephedrine HCl
- **Sympathomimetics (beta-adrenergic agents)**
- Isoproterenol, Metaproterenol, Terbutaline
- **Antidepressants**
- Imipramine, Nortriptyline, Amitriptyline, Doxepin, Amoxapine, Maprotiline
- **Antiarrhythmics**
- Quinidine, Procainamide, Disopyramide
- **Anticholinergics (selected)**
- Atropine, Scopolamine hydrobromide, Clidinium bromide, Glycopyrrolate, Mepenzolate bromide, Oxybutynin, Flavoxate HCl, Hyoscyamine sulfate, Belladonna, Homatropine methylbromide, Propantheline bromide, Dicyclomine HCl

- **Antiparkinsonian agents**
- Trihexyphenidyl HCl, Benztropine Mesylate, Amantadine HCl, Levodopa, Bromocriptine Mesylate
- **Hormonal agents**
- Progesterone Estrogen Testosterone
- **Antipsychotics**
- Haloperidol, Thiothixene, Thioridizine, Chlorpromazine, Fluphenazine, Prochlorperazine
- **Antihistamines(selected)**
- Diphenhydramine HCl, Chlorpheniramine, Brompheniramine, Cyproheptadine, Hydroxyzine
- **Antihypertensives**
- Hydralazine , Nifedipine
- **Muscle relaxants**
- Diazepam, Baclofen, Cyclobenzaprine
- **Miscellaneous**
- Indomethacin, Carbamazepine, Amphetamines, Dopamine, Vincristine, Morphine sulfate and other opioids Anesthetic agents

Prostate-specific antigen (PSA)

- A glycoprotein that is expressed by both normal and neoplastic prostate tissue
- The absolute value of serum PSA is useful for determining the extent of prostate cancer and assessing the response to prostate cancer treatment
- PSA is produced as a proenzyme (proPSA) by the secretory cells and secreted into the lumen
- The ratio of free to total PSA and complexed PSA (cPSA) as a means of distinguishing between prostate cancer and BPH as a cause of an elevated PSA.
- A concentration above ۴ ng/mL was considered abnormal
- In men without prostate cancer, serum PSA reflects the amount of glandular epithelium, which in turn reflects prostate size
- ۴۰ to ۴۹ years – ۰ to ۲٫۵ ng/mL
- ۵۰ to ۵۹ years – ۰ to ۳٫۵ ng/mL
- ۶۰ to ۶۹ years – ۰ to ۴٫۵ ng/mL
- ۷۰ to ۷۹ years – ۰ to ۶٫۵ ng/mL

- increasing BMI is associated with a lower mean PSA concentration
- ۵-alpha-reductase Inhibitors – Finasteride and dutasteride, approximately ۵۰ percent or greater decrease in serum PSA during the first three to six months of therapy
- who were regularly taking NSAIDs or acetaminophen had lower PSA levels
- Statins- median PSA levels dropped by ۴٫۱ percent over approximately one year after starting
- Thiazide diuretic use was associated with lower PSA levels
- **The major causes of an elevated serum PSA include:**
- Benign prostatic hyperplasia (BPH)
- Prostate cancer
- Prostatic inflammation/infection
- Perineal trauma and sexual activity

- Sexual activity can minimally elevate the PSA (usually in the ۰٫۴ to ۰٫۵ ng/mL range) for approximately ۴۸ to ۷۲ hours after ejaculation

Benign causes for an elevated PSA

Benign prostatic hyperplasia
Acute prostatitis
Subclinical inflammation
Prostate biopsy
Cystoscopy
TURP
Urinary retention
Ejaculation
Perineal trauma
Prostatic infarction

- **ADVANCES IN PSA TESTING**
- PSA density
- PSA velocity
- Free versus complexed or bound PSA
- PSA density -Serum PSA is then divided by prostate volume (with TRUS) to give a PSA density
- PSA density values (greater than ۰٫۱۵ ng/mL/cc) being more suggestive of prostate cancer
- Free/total PSA ratio [f/t PSA]) has been used to improve the sensitivity of cancer detection when total PSA is in the normal range (<۴ng/mL) and to increase the specificity of cancer detection when total PSA in the "gray zone" (۴٫۱ to ۱۰ ng/mL).

- **APPROACH TO SCREENING**
- The best available evidence suggests that screening confers a small absolute benefit for reducing prostate cancer mortality and the risk of developing metastatic disease.
- We do not stratify risk by obtaining a one-time measurement of PSA in men younger than age ♢· years, although some experts do
- **benign prostatic hyperplasia**
- BPH is a histologic diagnosis that refers to the proliferation of glandular epithelial tissue, smooth muscle, and connective tissue within the prostatic transition zone
- BPH can be asymptomatic, in which case it does not require treatment
- BPH results in benign prostatic enlargement (BPE) in some but not all men
- benign prostatic obstruction (BPO)
- bladder outlet obstruction (BOO)
- lower urinary tract symptoms (LUTS)
- overactive bladder symptoms (OAB)- frequency, urgency, and incontinence

- **Clinical presentation**
- Storage (irritative) symptoms – Urinary frequency, urgency, nocturia and incontinence
- Voiding symptoms – Slow urinary stream, straining to void, urinary intermittency or hesitancy, splitting of the voiding stream, and terminal dribbling
- **Laboratory tests**
- urinalysis for identify pyuria, glucosuria, proteinuria, ketonuria, or bacteriuria
- Other studies are not performed routinely but may be useful in certain circumstances:

  urine culture, Serum creatinine(result from BOO)
- If the serum creatinine concentration is high, renal ultrasonography is indicated to assess for the presence of upper-tract hydronephrosis
- PSA testing is not needed for diagnosis but can be used as a proxy for prostate volume when considering the use of a ۵- alpha reductase inhibitor
- These medications are only useful in men whose prostates are above ۳۵ grams, which correlates with a PSA >۱٫۵ ng/dL

- measurement of PVR volume in all patients presenting with LUTS/BPH symptoms to evaluate for retention
- PVR in normal men have less than ١٢ mL
- urologists are not concerned unless the PVR volume is greater than ٢٥٠ mL
- **INDICATIONS FOR UROLOGY REFERRAL**
- Severe symptoms or pain
- Men < ٤٥ years old
- Abnormality on digital rectal examination
- Hematuria
- Elevated prostate-specific antigen (PSA)
- Dysuria as a possible symptom of bladder cancer
- Incontinence
- Neurologic disease
- Urinary retention (post-void residual [PVR] urine volume >٢٥٠ mL, or a palpable bladder)
- Suspicion of other urological disease

- **Medical treatment of BPH**
- Lifestyle modifications:
- Limiting fluid intake before bedtime or prior to travel
- Limiting intake of mild diuretics (eg, caffeine, alcohol)
- Limiting intake of bladder irritants (eg, highly seasoned or irritative foods)
- Avoiding constipation
- Increasing activity, including regular strenuous exercise
- Weight control
- Kegel exercises at time of urinary urgency
- Timed voiding regimens
- Double-voiding techniques

- **MEDICAL THERAPY FOR SYMPTOM RELIEF**
- Alpha-adrenergic receptor blockers for most patients: The most commonly reported adverse effects of alpha-adrenergic receptor blockers include dizziness (٥ to ١٥ percent) and rhinitis (١٢ percent)
- Alpha-١ antagonists, particularly tamsulosin, have been associated with IFIS(Intraoperative floppy iris syndrome)
- **THERAPY TO PREVENT PROGESSION**
- ٥-alpha reductase inhibitors: Finasteride, dutasteride
- suppresses serum PSA levels by about ٥٠ percent
- Most experts recommend multiplying PSA value by two in patients receiving long-term (>٣ months of continuous treatment) ٥ARI therapy
- Sexual dysfunction
- post finasteride syndrome (PFS).

- **Patients with overactive bladder symptoms**
- **Beta-٣ adrenergic agonists or anticholinergics** for **OAB -** frequency, urgency, and incontinence
- urodynamic manifestations: detrusor overactivity
- preferred over anticholinergic agents as they do not cause dryness of the mouth.
- Without increased incidence of urinary retention
- Vibegron without a risk of hypertension or need for titration
- **Anticholinergics**
- treating predominantly irritative symptoms due to OAB in men with BPH who do not have an increased post-void residual.

Alpha-\-receptor antagonist for BPH

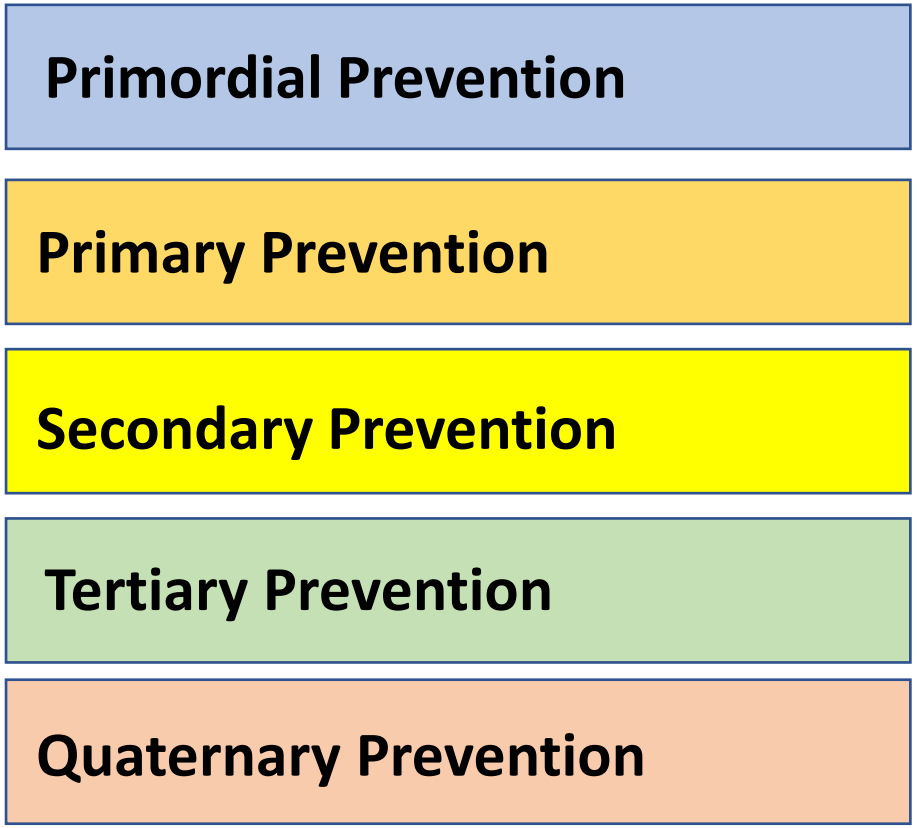
Dose titration schedule to reduce orthostatic effects [1]	
Terazosin standard (appropriate for most patients)	
Days 1 to 3	1 mg
Days 4 to 14	2 mg
Weeks 2 to 6	5 mg
Weeks 7 and thereafter	10 mg
Terazosin rapid (for selected patients)	
Days 1 to 3	1 mg
Days 4 to 14	2 mg
Weeks 2 to 3	5 mg
Weeks 4 and thereafter	10 mg
Doxazosin (immediate release)	
Days 1 to 3	1 mg
Days 4 to 14	2 mg
Weeks 2 to 6	4 mg
Weeks 7 and thereafter	8 mg
Doxazosin (extended release preparation only)	
Days 1 to 21	4 mg
Week 4 and thereafter	8 mg

Uroselective alpha-1 receptor antagonists ¶[2]	
Alfuzosin	
Initial and maintenance	10 mg
Tamsulosin	
Initial and maintenance	0.4 mg
If inadequate response after two to four weeks	0.8 mg
Silodosin	
Initial and maintenance	8 mg

Medications other than alpha-1-receptor antagonists used to treat lower urinary tract symptoms due to benign prostatic hyperplasia (BPH)

Pharmacologic class	Medication	Initial dose	Titration interval	Maximum dose
Phosphodiesterase-5 (PDE-5) inhibitor*	Tadalafil (Cialis)	5 mg daily	None	5 mg daily
5-alpha-reductase inhibitors (5-ARIs)¶	Finasteride (Proscar)	5 mg daily	None	5 mg daily
	Dutasteride (Avodart)	0.5 mg daily	None	0.5 mg daily

Pharmacologic class	Medication	Initial dose	Titration interval	Maximum dose
Beta-٣ adrenergic agonists	Mirabegron	٢٥ mg daily	May increase dose as needed and tolerated after ≥٤ weeks	٥٠ mg daily
	Vibegron	٧٥ mg daily	None	٧٥ mg daily
Anticholinergic agents	Fesoterodine	٤ mg daily	May increase dose as needed and tolerated after ≥٢ weeks	٨ mg daily
	Tolterodine	١to ٢ mg twice daily	none	٢mg twice daily
	Tolterodine ER	٢ to ٤ mg daily	none	٤mg twice daily
	Oxybutynin IR	٥ mg ٢ to ٣ times daily	May increase dose as needed and tolerated in ٥ mg increments every ١ to ≥٢ weeks	٥ mg ٤ times daily
	Oxybutynin ER	٥ to ١٠ mg daily	May increase dose as needed and tolerated in ٥ mg increments every ١ to ≥٢ weeks	٣٠ mg daily
	Darifenacin	٧٫٥ mg daily	May increase dose as needed and tolerated after ≥٢ weeks	١٥ mg daily
	Solifenacin	٥ mg daily	May increase dose as needed and tolerated after ≥٢ weeks	١٠ mg daily


Primordial Prevention
Primary Prevention
Secondary Prevention
Tertiary Prevention
Quaternary Prevention

Primordial Prevention

- ۱- اقدام در خصوص ترویج سبک زندگی سلام تغذیه مناسب، ورزش و پرهیز از چاقی و اضافه وزن
- ۲- آموزش در خصوص تشکیل پرونده الکترونیک سلامت جهت تمامی آحاد جمعیت کشور و ارزش و اهمیت انجام مراقبتهای لازم در هر گروه سنی
- ۳- آموزش های لازم در سطح ملی برای آشنایی با علایم بیماری ریسک فاکتورها

Primary Prevention

۱- انجام مراقبتهای دورهای در هرگروه سنی حسب مورد
۲- شناسایی افراد پر خطر و در معرض ریسک جهت توصیه های لازم بهداشتی در خصوص کنترل وزن انجام فعالیت بدنی و سبک زندگی سالم
۳-کنترل وزن و رسیدن به BMIایدهآل

Secondary Prevention

۱- بیماریابی بموقع در جمعیت در معرض ریسک و انجام اقدامات تشخیصی اولیه

۲- انجام اقدامات تشخیصی اولیه و بموقع جهت بیماریابی

۳- غربالگری کوموربیدتی های زمینه ای

Tertiary Prevention

- ۱- درمان بموقع و مقتضی براساس آخرین و جدیدترین مطالعات
- ۲- درمان کوموربیدیتی های همراه واقدامات پیشگیرانه جهت کنترل پیشرفت بیماری به مراحل شدید و غیر قابل برگشت
- ۳-مراقبت و مونیتورینگ بموقع بیماران

Quaternary Prevention

- ۱- مونیتورینگ دقیق و درمان بموقع جهت جلوگیری از عوارض احتمالی
- ۲- عدم انجام اقدامات پاراکلینیکی و دارویی که تاثیر خاصی بر پیش آگهی و عوارض بیماری ندارد