Urology Fundamentals: What You Should Know

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Topics

- Kidney stones
- BPH
- OAB
- UTIs
- ED
- Hypogonadism*
- Prostate Cancer Screening*

Kidney Stones

- History, PE, Urinalysis
  - Not everyone has typical symptoms
  - Not everyone has hematuria

- Imaging
  - KUB
  - Renal ultrasound
  - CT

- Treatment
  - ESWL
  - Ureteroscopy
  - PCNL

- Medical Management (Prevention)
Medical Expulsive Therapy

Does use of an alpha blocker (or other) aid in stone passage?

Shah TT, Gao C, O'Keefe A, et al. Medically expulsive therapy (MET) has no benefit in improving spontaneous stone passage (SSP) in patients presenting with ureteric colic: Results from the MIMIC study. Data presented at the 33rd European Association of Urology Congress held in Copenhagen, Denmark, from March 16 to 20.


BPH

Address LUTS (Lower urinary tract symptoms)
- IPSS, AUASS

Confounding factors
- Hematuria
- Abnormal DRE/PSA, concern for prostate cancer
- Pain
- Infection
- Neurologic disease
- Urethral stricture disease
- Obstructive Sleep Apnea

Things to consider
- BOO (Bladder Outlet Obstruction)
- OAB (Overactive Bladder)
- Nocturnal Polyuria

BPH Treatment

Modifiable Factors
- Diet / Fluids
- Drugs
- Lifestyle
- Treatment for sleep apnea

Alternative Therapies

Medications
- Alpha blockers
- 5 alpha reductase inhibitors
- Combination
Surgical Management of Lower Urinary Tract Symptoms Attributed to Benign Prostatic Hyperplasia

EVALUATION AND PROGNOSTIC TESTING

- Noninvasive Evaluation
  - Initial medical history
  - Symptom assessment
  - Physical examination
- Additional Tests
  - Ultrasound (US) and transrectal ultrasound
  - Magnetic resonance imaging (MRI)
  - Transrectal ultrasound
  - Functional bladder capacity
  - Voiding cystourethrogram
  - Urodynamic testing

RATIONAL FOR TREATMENT

- Symptomatic therapy
- Hormonal therapy
- Minimally invasive therapies
- Open surgical procedures
- Robotic-assisted laparoscopic prostatectomy

SURGICAL OPTIONS

- Simple prostatectomy
- Transurethral resection of the prostate (TURP)
- Transurethral incision of the prostate (TUIP)
- Laser prostatectomy
- Open prostatectomy

Complications

- Pelvic infection
- Urinary incontinence
- Sexual dysfunction
- Adenocarcinoma of the prostate

Patient selection

- Patients with symptoms severe enough to affect quality of life
- Patients with prostatic obstruction causing urinary retention
- Patients with recurrent urinary tract infections
- Patients with gross hematuria

Decision making

- Shared decision-making with patients
- Consider patient preferences and lifestyle
- Consider comorbidities and life expectancy

Follow-up

- Periodic reassessment of symptoms and physical examination
- Monitor for complications and side effects

References

[Provide references as per the context of the content]
Rezūm

Overactive Bladder

History, PF, Urinalysis

Urine culture if indicated

At provider’s discretion:

- PVR
- Voiding and intake diary

Not on initial workup:

- Urodynamics
- Cystoscopy
- Renal and bladder ultrasound

Overactive Bladder - Management

First Line

- Observe
- Diet / Fluid modification
- Behavioral training
- Urgency suppression
- Bladder training
- Kegels

Second Line

- Antimuscarinics: Darifenacin, fesoterodine, oxybutynin, solifenacin, tolfenamine, trospium
- Beta agonist: Mirabegron

Third Line

- Percutaneous Tibial Nerve Stimulation (PTNS)
- Intravesical Botox injection
- Sacral Nerve Stimulation (SNS)
Sacral Neuromodulation

UTI – Uncomplicated Cystitis

Recurrent UTI
> 2 infections in 6 months, > 3 infections in 1 year
- Recurrence vs Persistence

Recurrent uncomplicated UTI may be successfully managed by family physicians

Referral to Urology when?
Cystoscopy or imaging not necessarily warranted with uncomplicated recurrent uti
Recurrent UTI - Treatment

Conservative measures... no conclusive evidence:
- Avoidance of spermicide use
- Voiding before and after intercourse
- Cranberry supplements
- Lactobacillus

Medications:
- Continuous low dose antibiotics
- Postcoital antibiotics
- Vaginal estrogen for postmenopausal women

Hydration and frequent voids

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Table 3. Suggested antibiotic prophylaxis

<table>
<thead>
<tr>
<th>Continuous (within 2 hours of sex)</th>
<th>Postcoital</th>
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<tbody>
<tr>
<td>Trimethoprim/sulfamethoxazole (TMP/SMX) 40 mg/800 mg daily or three weekly</td>
<td></td>
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<tr>
<td>Trimethoprim 100 mg/day*10</td>
<td></td>
</tr>
<tr>
<td>Ciprofloxacin 125 mg/day*8</td>
<td></td>
</tr>
<tr>
<td>Cephalexin 125 mg to 200 mg/day**</td>
<td></td>
</tr>
<tr>
<td>Cefadroxil 250 mg daily</td>
<td></td>
</tr>
<tr>
<td>Nitrofurantoin 50 mg to 100 mg/day</td>
<td></td>
</tr>
<tr>
<td>Norfloxacin 100 mg daily*10</td>
<td></td>
</tr>
<tr>
<td>Fosfomycin 3 g every 10 days**</td>
<td></td>
</tr>
<tr>
<td>Ofloxacin 100 mg*6</td>
<td></td>
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</tbody>
</table>

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ED
- PDE5i’s
- VED
- Injections
ED

- Viagra patent expired December 2017
  - Teva and Greenstone (Pfizer generic arm), still $25+ per pill

Cialis – patent extension?

Hypogonadism

Symptoms

Screening
- Only in patients with signs/symptoms of low T
- T not recommended for routine screening
- Distinguish primary and secondary hypogonadism
Hypogonadism

Treatment contraindicated:
- Men planning fertility
- PSA > 4 ng/mL
- PSA > 3 and high risk
- Elevated HCT
- Untreated severe OSA
- Severe LUTS
- Uncontrolled heart failure, MI, or stroke within 6 months
- Thrombophilia

T replacement not routinely recommended:
- For men > 65 yo, can be given with low T, symptoms, and explicit discussion
- For glycemic control in diabetics

Hypogonadism - Diagnosis

Significant day-to-day variation in T

2 separate morning levels need to be drawn

Can draw T with second lab draw if FSH is low
- Due to multiple conditions that can alter T
- Also recommended for borderline low (200-400 ng/dL)

Measure LH and FSH via T

Measure prolactin and iron studies if secondary hypogonadism suspected

Karyotype if Klinefelter’s Syndrome is suspected
Hypogonadism - Treatment

Treat to correct symptoms

Formulations
- Testosterone/ cypionate IM injections
- Transdermal gel
- Testosterone solution
- Transdermal patch
- Buccal tablets
- Testosterone pellets
- Long-acting Testosterone undecanoate injection

Hypogonadism – Side Effects

Erythrocytosis
- Cardiovascular (controversial)
  - Companies have labeling on products but no consistent evidence that testosterone replacement increases risk of heart disease

Venous thromboembolism
- Prostate
  - Does not cause prostate cancer, can worsen aggressive prostate cancer if present
  - Testosterone replacement can increase PSA concentrations
  - Increased risk of finding subclinical prostate cancer

LUTS
- T does not worsen LUTS in men who do not have symptoms prior to treatment

Fertility

Formulation-specific SE
- Gels: transfer, skin irritation, stickiness
- IM: mood fluctuation, pain at site, coughing with undecanoate form
- Pellets: infection, pain, expulsion
Hypogonadism – Monitoring

Explain R/B/A of prostate cancer monitoring

Evaluate pt 3-6 months after initiating treatment, then annually
- Assess adverse effects
- Assess response to treatment

Check T concentrations 3-6 months after starting, goal mid-normal range or improvement in symptoms
- IM: check midway between injections
- Gels: 2-8 hrs after administration, at least one week after treatment
- Pellets: end of dosing interval, alter pellet number as indicated
- Undecanoate: end of dosing interval

Hypogonadism – Monitoring

Hct
- Baseline, then 3-6 months, then annually
- >54%, stop treatment, assess for hypoxia/OSA, restart with reduced dose
- May require phlebotomy

Measure BMD after 1-2 years if have osteoporosis

PSA
- Baseline, 3-12 months after starting therapy, then yearly

Urology consult if:
- ↑ PSA >1.4 ng/mL within 12 months starting T
- PSA > 4 (depending on age)
- Abnormal DRE
- Worsening LUTS

Hypogonadism

Keep in mind: This industry has grown to generate more than $2 billion annually in recent years
Prostate Cancer Screening

Does UCA recommend prostate cancer screening? **YES!**
Difficulty...

- Everyone has different screening guidelines
  - AUA
  - NCCN
  - ASCO
  - ACS
  - USPSTF
  - CDC
  - NCI/NIH

UCA Biopsy Results

51% positive biopsy results
- Compared to around 25-30% national average
The American Urological Association’s Prevalent Cancer Screening Guideline: Which Cancer Will Be Missed in Average-risk Men Aged 40 to 54 Years?

Screening 40 to 54 year-old men...

Questions?
Incomplete emptying
Frequency
Intermittency
Urgency
Weak stream
Straining
Nocturia
Bother

WHAT IS NOCTIVA?
NOCTIVA™ (desogestrel acetate) Nasal Spray is the first and only
medicine approved by the FDA to treat nocturia due to nocturnal polyuria.
It helps reduce the amount of urine your kidneys produce at night. It’s
available in 2 doses. Your doctor will decide which dose is right for you.

INDICATION AND IMPORTANT SAFETY INFORMATION INCLUDING BOXED WARNING

Typical symptoms and signs
Non-specific symptoms
and signs
Reduced libido, erectile dysfunction
Decreased spontaneous (morning)
erections
Loss of body axillary and pubic hair
Sten (especially <5 mL) or shrinking
menses
Hypertension, low sperm count
Pathological fractures, low bone
mineral density
Generalized weakness
Reduced muscle bulk and strength
Diabetes mellitus or diabetes
Poor concentration and memory
Sleep disturbance, increased
somnolence
Memory loss (dose dependent)
Increased body fat and metabolic
imbalance
Table 2. Indications for further investigation of recurrent urinary tract infection

<table>
<thead>
<tr>
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<tr>
<td>Prior urinary tract surgery or trauma</td>
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<tr>
<td>Gross hematuria after resolution of infection</td>
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<td>Previous bladder or renal calculi</td>
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<tr>
<td>Obstetric symptoms (straining, weak stream, interstitial, hematuria, low voiding pressure or high PSA)</td>
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<tr>
<td>Unusual infecting bacteria on culture (e.g., Proteus, Yersinia)</td>
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<tr>
<td>Bacterial persistence after sensitivity-based therapy</td>
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<tr>
<td>Prior adenocarcinoma malignancy</td>
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<tr>
<td>Diabetes or otherwise diagnosed patient treated with chemotherapy</td>
</tr>
<tr>
<td>Prolonged febrile response (fever, chills, vomiting, CVA tenderness)</td>
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<tr>
<td>Asymptomatic microhematuria after resolution of infection should be evaluated as per CUA guidelines</td>
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</tbody>
</table>

NPS: year and month of PNL; underscoring of signals: CUA Canadian Urological Association