Non-Cancerous Urinary Tract Disorders in Women Update

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Dr. Paladine is a family physician who lives and practices in Manhattan, New York, where she supervises residents and medical students, and treats a predominantly Latino, low-income patient population. She focuses on women’s health, including maternity care and reproductive health. In addition to her work as a physician, Dr. Paladine mentors residents and medical students as a preceptor in clinic and hospital environments. She is a member of the board of directors of the New York State Academy of Family Physicians and a member of its Education Commission. She believes that the United States needs a health care system based on primary care and that the public must learn more about family medicine to pave the way.
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Dr. Desai earned her medical degree from University of Cincinnati College of Medicine, Ohio, and completed residency training in family medicine at Carolinas Medical Center in Charlotte, North Carolina. She went on to complete a fellowship in faculty development at the University of Pittsburgh Medical Center, Pennsylvania, and a fellowship in integrative medicine at the University of Arizona in Tucson. Dr. Desai is board certified in both integrative medicine and family medicine. She serves as the director of the Integrative Medicine Consultation Clinic and the chair of the Clinical Competency Committee. She has published articles relevant to family medicine in peer-reviewed journals, including Journal of Family Practice and Evidence-Based Practice, and she was a contributing author for an edition of the AAFP monograph series FP Essentials. In addition to precepting residents and caring for her own patients, Dr. Desai trains medical students and residents at Columbia University in integrative medicine, which includes herbals/botanicals, nutritional supplements, aromatherapy, and mind-body therapies.

Learning Objectives

1. Establish evidence-based screening protocols in women who are at risk for identifying urinary tract disorders.

2. Counsel patients regarding first-line treatment options, including behavioral therapy and lifestyle modifications, emphasizing adherence and follow-up.

3.Prescribe second or third line treatment options if first-line therapies are unsuccessful, coordinating referral and follow-up care for surgical treatment as necessary.

4. Review preventive measures, the workup and non invasive treatments prior to referral.
Presentation Outline

1. Introduction

1. Review 3 common **lower urinary tract disorders** in women
   - Recurrent UTI
   - Urinary Incontinence
   - Pelvic Organ Prolapse

3. Summarize **practice recommendations** for patient care
**INTRODUCTION**

Lower Urinary Tract Symptoms (LUTS) in women

**Symptoms**

3 groups: storage, voiding, post-voiding

- frequency
- urgency
- nocturia
- dribbling
- weak stream
- hesitancy
- dysuria
- incomplete emptying
- genital and LUT pain

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**Poll Question 1:** Flo is a 34 year old healthy female who presents to you with her third episode of burning with urination, frequency, and urgency over the last 6 months. She is sexually active with her boyfriend of 8 months. You review the EMR and find the last time she came in with these symptoms she had a positive urine culture (100,000 CFU/ml of E. Coli). **Which of the following is true about recurrent UTIs (RUTIs) in women?**

A. Most women with RUTIs have an identifiable anatomic or physiological abnormality
B. Urine culture should be obtained in all patients with RUTIs to guide management
C. There is strong evidence that post coital voiding is associated with decreased frequency of RUTIs
D. Treatment should NOT be initiated until urine culture results are available to guide choice of antibiotic
Recurrent Urinary Tract Infections

What and Who?

**What: Definition**
- Recurrence of symptoms after an episode
- 3x/1 yr or 2x/6 mo
- Reinfection (same or different organism)
- Inadequate treatment

**Who: Epidemiology**
- Very common!
- 27% of college women 6 mo after 1st episode
- 53% of women age > 55 y/o
- usually healthy women *without* anatomical or functional abnormalities

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Recurrence Urinary Tract Infections

Risk Factors: It’s all about *sex* baby!

Risk Factors Associated with Recurrent UTIs: Odds Ratios

<table>
<thead>
<tr>
<th>Frequency of Sexual Intercourse</th>
<th>Odds Ratio</th>
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<tbody>
<tr>
<td>Intercourse &gt; 9x/month</td>
<td></td>
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<tr>
<td>Intercourse 4-</td>
<td></td>
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</tbody>
</table>

#1 Risk Factor for recurrent UTIs is **frequency of sexual intercourse**

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Recurrent Urinary Tract Infections

*Diagnosis: History alone is sufficient to diagnose UTI*

- combination of typical symptoms + absence of vaginal discharge
- **90% probability** of diagnosing UTI

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**Poll Question 2:** Flo is a 34 year old healthy female who presents to you with her third episode of burning with urination, frequency, and urgency over the last 6 months. She is sexually active with her boyfriend of 8 months. You review the EMR and find the last time she came in with these symptoms she had a positive urine culture (100,000 CFU/ml of E. Coli). Which of the following is/are appropriate management strategies for this patient (select all that apply)?

A. Wait for urine culture before initiating treatment  
B. Prescribe antibiotic based on previous urine culture and sensitivities  
C. Counsel patient to increase fluid intake to 1.5 liters per day  
D. Refer patient for renal ultrasound for further evaluation of cause of RUTIs  
E. Offer post coital antibiotic therapy for preventative treatment
Recurrent Urinary Tract Infections

3 Management Strategies

#1 Post-coital antibiotic

#2 Antibiotic prophylaxis x 6-12 months

#3 Self initiated antibiotic treatment x 3 days


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Recurrent Urinary Tract Infections

**Antibiotic prophylaxis**

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Dose and Administration</th>
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<tbody>
<tr>
<td>Nitrofurantoin</td>
<td>50-100 mg QHS; once post sex</td>
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<tr>
<td>Cephalexin</td>
<td>250 mg QHS; once post sex</td>
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<tr>
<td>Ciprofloxacin</td>
<td>125 mg QHS; once post sex</td>
</tr>
<tr>
<td>TMP-SMX</td>
<td>40/200 mg QHS; once post sex</td>
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Doc, I don’t really want to take antibiotics

Isn’t there something else I can take to prevent UTIs?

- Drink 1.5-3 L water per day and **urinate** more often
- **Urinate** when you gotta go!
- **Urinate** after sex
- Clean genital area before/after sex wiping front to back
- Keep out of vagina: douches, spermicides, diaphragms, bubble bath liquids, bath oils, vaginal oils/creams, deodorant sprays or soaps


Doc, I don’t really want to take antibiotics

Isn’t there something else I can take to prevent UTIs?

- **D-mannose** no different than nitrofurantoin
- **Cranberry** supplements may reduce the risk by 26% (small studies, variable products)
- **Probiotics**: intravaginal, oral supplements may reduce RUTIs (~20%)


Suspect complicated UTIs

- Diabetes
- Renal insufficiency
- Transplant patients

- Indwelling catheters
- Ureteral stents
- Nephrostomy tubes

- PCKD
- Vesicoureteral reflux
- Strictures
- Renal stones

- Cystocele
- Multiple sclerosis
- Neurogenic bladder

- Immunosuppression
- Instrumentation
- Structural abnormalities
- Voiding dysfunction


I'm really good at multitasking:
I can laugh, cough, sneeze, and pee all at the same time!
Urinary Incontinence - First Steps!

Voiding Diary

<table>
<thead>
<tr>
<th>Time</th>
<th>Oral Intake</th>
<th>Voided Urine</th>
<th>Pad change, leakage</th>
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</table>

(3 days)

Medication Triggers?
- muscle relaxants
- opioids
- sedatives
- anticholinergic SEs

Assess renal function
- BMP
- UA/Ucx (infxn)


5 Types of Urinary Incontinence

- **01 STRESS**: sphincter weakness
- **02 URGE**: detrusor overactivity
- **03 MIXED**: stress + urge
- **04 OVERFLOW**: overdistension of bladder
- **05 FUNCTIONAL**: cognitive/functional
Stress Incontinence

I know it will happen whenever I cough, sneeze, go jogging.
It’s only a small amount

STRESS
(cough, sneeze, laugh)

URGE

detrusor hyperactive

MIXED

AND sphincter with too little tone

OVERFLOW

bladder can’t hold anymore urine

sphincter with too little tone

detrusor hyperactive

detrusor hyperactive

low sphincter tone
Stress Incontinence: Diagnosis

Cough stress test

- periurethral injections
- sling
- urethropexy surgery

First line
- Weight loss
- Smoking cessation
- Fluid restriction
- Pelvic floor muscle exercises
- Bladder irritants

Second line
- extracorporeal magnetic innervation
- pessaries

Third line
- periurethral injections
- sling
- urethropexy surgery

Pelvic Floor Exercises

- Isolate muscles: hold urine while urinating
- Hold x 3-5 seconds → build up to 10 seconds
- 3 sets of 10 at least 3-4x/week
- Continue for at least 15-20 weeks

Stress Incontinence

Treatment

https://familydoctor.org/kegel-exercises-for-your-pelvic-muscles/

Urge Incontinence

It comes on suddenly
It happens when I hear running water or just when I’m coming home.
I have to pee all of the time!
Poll Question 3: Flo is a 34 year old healthy female who often has an uncontrollable urge to urinate when coming home from work. **Which of the following is/are first line treatments for urge incontinence?**

A. Pelvic floor muscle training (Kegel’s exercises)
B. Bladder training
C. Weight loss
D. Anticholinergic medications

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**Urge Incontinence Treatment**

- **First line**
  - Weight loss
  - Smoking cessation
  - Fluid restriction
  - Pelvic floor muscle exercises!
  - Bladder training
  - Bladder irritants

- **First or Second Line**
  - anticholinergic or beta-adrenergic medications

- **Third line**
  - botulinum toxin
  - nerve stimulation
Urge Incontinence: Bladder Retraining

- Don’t move
- Distraction and relaxation techniques to reduce urgency
- Walk slowly to the bathroom and void
- Extend the time that urination can be postponed
  - start with 5 minutes → aim to void every 3-4 hours without incontinence

https://familydoctor.org/bladder-training-urinary-incontinence/

Urge Incontinence: Bladder Irritants

- Caffeine
- Carbonated beverages
- Artificial sweeteners
- Acidic foods
- Alcohol
Urge Incontinence: Medications

- Oxybutynin (Ditropan)
- Tolterodine (Detrol)
- Trospium (Sanctura)

Start at low doses and titrate up. Watch for urinary retention!

Overflow Incontinence

I didn’t know I was peeing. My underwear was wet. I was dribbling urine. It’s hard to start peeing.
Poll Question 4: Flo reports that her underwear is often wet with urine but she did not realize she had to urinate. You suspect she has overflow incontinence. **Which of the following can be a cause of overflow incontinence?**

A. Pelvic organ prolapse  
B. Diabetes  
C. Fecal impaction  
D. Decongestants

**Overflow Incontinence: Diagnosis**

Diagnosed by PVR >200  
Rectal exam: neuropathy, r/o fecal impaction
Overflow Incontinence: Treatment

- Refer to urology!
- Clean intermittent or indwelling catheter
- Alpha adrenergic blockers (tamsulosin)

I think I’m losing my mind...
But as long as I keep the part that tells me when I need to pee, I’m ok.
Functional Incontinence

• Dementia
• Depression
• Physical frailty

Pelvic Organ Prolapse
What and Who?

What: Definition
• Herniation of pelvic structures into the vagina
• Can have anterior, posterior, or apical prolapse

Who: Epidemiology
• 50% with prolapse on exam
• 3-5% of post-menopausal women with sx
• elevated BMI
• increased parity
• chronic cough or constipation
• connective tissue disorders


Pelvic Organ Prolapse

I can feel a bulge near my vagina.
It’s uncomfortable to have sex.
I lose my urine.
I have to put a finger in my vagina to have a bowel movement.

Pelvic Organ Prolapse: Diagnosis
1. External exam
2. Use a split speculum
3. Look for vaginal atrophy, skin irritation
4. Ask pt to bear down
   may assess standing
Pelvic Organ Prolapse: POP Q

https://www.augs.org/patient-services/pop-q-tool/

Pelvic Organ Prolapse: Treatment

**Contraindications to observation:**
- Hydronephrosis
- Recurrent UTI
- Severe vaginal or cervical erosions

Surgery

(Kegels)

Pessary
Some evidence of improvement
Study included 6 months of supervised therapy


Pelvic Organ Prolapse Surgery

• Mesh controversy (more women require repeat surgery)
• Surgical treatment may lead to stress incontinence – women with anterior or apical prolapse
• 6-30% recurrence

Lower Urinary Tract Symptoms (LUTS) in Women Summary

Recurrent UTIs
  o Document at least 1 urine culture demonstrating a urinary pathogen
  o Imaging + cystoscopy are rarely necessary in otherwise healthy women
  o 3 options for prophylaxis:
    o post-coital, QHS x 6-12 mo, self initiated x 3 days
  o Don’t forget the behavioral modifications (pee a lot!) and supplements (cranberry, d-mannose, probiotics)
Lower Urinary Tract Symptoms (LUTS) in Women

Summary

Pelvic Organ Prolapse
- Symptoms are key; Do an exam! POP-Q
- Pessaries should be first line
- Surgery is not without risk

Urinary Incontinence
- 5 types of incontinence: stress, urge, mixed, overflow, functional
- For all types: voiding diary, assess medications, and assess renal fxn (BMP, UA)
- Stress, Urge, Mixed: behavioral modifications, pelvic floor muscle retraining
- Overflow: refer to urology
- Functional: evaluate underlying conditions

LUTS in Women: Practice Recommendations

<table>
<thead>
<tr>
<th>Practice Recommendation</th>
<th>SORT</th>
</tr>
</thead>
<tbody>
<tr>
<td>History alone is sufficient to diagnose an uncomplicated UTI</td>
<td>B</td>
</tr>
<tr>
<td>Continuous and postcoital antimicrobial prophylaxis have demonstrated effectiveness in reducing the risk of recurrent UTIs</td>
<td>A</td>
</tr>
<tr>
<td>Behavioral therapies are effective for both stress and urge incontinence</td>
<td>C</td>
</tr>
<tr>
<td>A post-void residual measurement should be used to confirm a suspected diagnosis of overflow incontinence</td>
<td>C</td>
</tr>
<tr>
<td>Pessaries are an effective treatment for many women with symptomatic pelvic organ prolapse</td>
<td>B</td>
</tr>
</tbody>
</table>
May your coffee, intuition, self-appreciation, and **pelvic floor** be strong.

THANK YOU!
Your feedback is important...
please complete the evaluation.

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Questions