

**Family Medicine Preceptorship
Discussion Cases
Dysuria**

Learning Objectives:

- Define and differentiate causes of dysuria.
- Identify patients with likely uncomplicated UTI and best method(s) of treatment.
- Learn laboratory tests that are helpful in differentiating causes of dysuria.
- Recognize subtypes of patients at risk for complicated UTI's and/or other causes of dysuria.

Suggested Readings:

Michels TC and Sands JE. Dysuria: Evaluation and Differential Diagnosis in Adults. American Family Physician. 2015; 92 (9): 778-788. <https://www.ncbi.nlm.nih.gov/pubmed/26554471>

Mody L and Juthani-Mehta M. Urinary Tract Infections in Older Women: A Clinical Review. JAMA, 2014; 311(8): 844-54. <https://www.ncbi.nlm.nih.gov/pubmed/24570248>

Bent S, Nallamotheu BK, et al, Does this woman have an acute uncomplicated urinary tract infection? JAMA, May 22/29, 2002;287(20):2701-10. <http://jama.ama-assn.org/cgi/content/full/287/20/2701>

Bergus GR, Dysuria (Chapter 27). In: Essentials of Family Medicine, 6th ed. Philadelphia, PA: Wolters Kluwer/Lippincott, Williams and Wilkins, 2012, 327-336.

CASE 1:

A 60 year old woman presents with 1 week of dysuria and denies vaginal or other urinary symptoms.

Question 1: What is your differential diagnosis of her dysuria? How would it change in men?

UTI , vaginitis, urethritis, perineal trauma, atrophic vaginosis (or other dermatologic conditions), bacterial vaginosis, candidiasis, trichomoniasis. In men, prostatitis or epididymitis may present as dysuria.

Question 2: What further evaluation would help you establish a diagnosis?

1.) *Physical exam: vitals, abdomen, CVA, genital, vaginal exam (if vaginal discharge reported)*

2.) UA		<u>sensitivity</u>	<u>specificity</u>
	LE	0.87	0.36
	Nitrite	0.53	0.88
	10 bac/hpf	0.85	0.99
	10 WBC/hpf	0.82	0.65

3.) *Possible urine CX-positive if >100 cfu/mL. Not necessary in uncomplicated UTI. Consider in children, men, older women, concern of upper tract infection or recurrent infection/concern about resistant organisms.*

4.) *Possible wet mount – if vaginal discharge*

Question 3: Assuming that her UA indicated infection, what is your first-line treatment?

Although many UTIs will clear without treatment, oral antibiotic therapy is recommended. Cranberry juice and increased fluid intake are not evidence-supported treatments. Treatment should be aimed at enteric bacteria (E.Coli being the most common). For uncomplicated infections, shorter courses of most antibiotics are equally effective with fewer adverse effects. TMP-SMX, Macrobid, and Fosfomycin are all first-line and, when these agents aren't safe or effective, Cephalexin or Ciprofloxacin are acceptable alternatives.

CASE 2:

21-year-old woman calls the clinic with 3d h/o urinary frequency and burning on urination. She has increased her water intake without benefit. She is a college student with a new male sexual partner, and uses OCP's. She denies fever, chills, back pain, or vaginal discharge. She is otherwise healthy. She had a UTI about a year ago.

Question 1: Does this female likely have uncomplicated UTI?

Yes. Patient reported frequency and dysuria predict UTI with probability of 80-90%.

Question 2: Does use of lab (UA / micro) at \$37.00 help your differential diagnosis?

No. The probability is high enough that the UA adds no predictive value. In the absence of vaginal symptoms or other complicating features, a telephone protocol for treatment of dysuria is sufficient in female patients 16-55 yo without risk factors (diabetes, pregnancy, recurrent or childhood UTI, anatomic abnormalities, or recent urologic instrumentation). This approach decreases costs with no detriment to patient outcomes. Patients should be instructed to follow-up if symptoms persist after completion of treatment.

Question 3: What are her risk factors for UTI?

Young, adult female; sexually active

Question 4: What are likely organisms causing a UTI?

E Coli – 75% +. Other possible organisms include: Staph Saprophyticus , Proteus mirabilis , S. Aureus, Enterocci , Klebsiella.

Question 5: What should you use to treat her?

*Antibiotics (Level A rec.) See above for regimens.
Cranberry juice - push fluids (Level C rec.)*

CASE 3:

34-year-old female presents with 10 d h/o dysuria, mild urinary frequency. She notes chills and aches, but has not taken her temperature. She is on Depo Provera so her LMP is unknown. She is uncertain about vaginal discharge. She had one UTI 8 years ago. On physical exam, vitals are normal. She has mild erythema of external genitalia, no vaginal discharge or cervicitis, no cervical motion tenderness. No CVAT. UA 1.015/ - LE/ - blood/ - nitrate.

Question 1: Does this woman have an UTI?

High probability, complicated UTI with chills

Question 2: Does she exhibit any red flags for complicated UTI?

Yes. Probable fever. Other red flags for complicated UTI include: Male gender, prepubertal or geriatric age, symptoms for more than 7 days, an immunosuppressing condition, an episode of acute pyelonephritis within the past year, known anatomic abnormality, diabetes mellitus, flank pain or tenderness.

Question 3: What (if any) treatment should be given?

TMP-SMX or Ciprofloxacin, longer duration depending on which one you choose, close follow-up. Parenteral antibiotics are indicated if she cannot maintain hydration or oral intake or is medically unstable.

Question 4: Should further testing be done?

Urine culture for antibiotic sensitivities. Consider pregnancy test. Consider wet prep & GC/Chlamydia testing.

CASE 4:

78-year-old female nursing home resident has several days of dysuria, worsening incontinence, and inability to sleep well because of nocturia. Her past medical history is significant for HTN, diet-controlled diabetes, high cholesterol, depression. She has had two UTI's in the past two years. She is afebrile. You will not be able to perform a physical until the end of the day and ask for a urine sample. UA 1.025 / neg LE / neg blood / 1 + glucose / 1+ nitrate. Microscopy shows 20-50 WBC / rare bacteria / 2-5 RBC/ 10-20 epithelial cells/ hpf.

Question 1: Do you need to ask further history or order other lab tests before beginning treatment? If so what?

Ask about prior UTIs, current meds, foley catheter use, and order urine culture.

Question 2: What concerns you regarding UTI in this patient?

Her age, urinary incontinence, prior UTI, diabetes, and nursing home residence all lead to higher probability of UTI.

Question 3: How would you treat a UTI in this case?

Longer course of antibiotic therapy (7 – 10 days, if uncomplicated or 10 – 14 days if pyelonephritis). Consider using fluoroquinolone as outpatient or parenteral antibiotics. Imaging is indicated if he has a prior UTI.

Question 4: Would you treat her if she had positive urine culture with no symptoms?

No. It is important to distinguish between UTI and asymptomatic bacteruria in older patients. Urinary frequency, urine odor, and incontinence are poorly predictive of UTI and are often attributable to other factors. Elderly women with incontinence may have bacteruria and pyuria without UTI and may not be clinically important. Asymptomatic bacteruria usually resolves spontaneously. Although treatment may resolve the bacteruria, it frequently recurs, causes adverse reactions, and contributes to the development of resistant organisms. Thus, in the absence of acute symptoms (acute dysuria, new incontinence, fever, flank pain, hematuria), it is advisable to hydrate, evaluate medications and alter them if needed, and monitor symptoms closely.

CASE 5:

24 yo male patient presents with pain on urination. He denies penile discharge and has no pelvic, flank, or abdominal pain. No urinary frequency or urgency. No fever or chills. He is otherwise healthy and takes no medications. He is sexually active and has had a couple of female partners in the past year.

Question 1: How could you distinguish the likely anatomic location of pathology based on history?

Ask about timing of dysuria. Initial dysuria is associated with urethritis, which would increase concern for Chlamydial or Gonorrheal etiology. Dysuria at the end of urination would increase concern for bladder etiology.

Question 2: What laboratory tests would you order?

UA would rule out urinary disease. GC/Chlamydia PCR can be obtained in a urine sample or a urethral swab (the latter is obviously less pleasant for the patient).

Question 3: What treatment and education would you provide?

- *Antibiotic therapy is indicated. Chlamydia is best treated with Doxycycline 100 mg BID for seven days (or Azithromycin 1 g PO once during pregnancy). Gonorrhea is treated with Ceftriaxone 500 mg IM for those < 150 kg or 1 g IM for those 150 kg or more. Many opt to treat for both Chlamydia and Gonorrhea if one is present, although this is not need if you have tested for both and the test for the other is negative.*
- *Abstinence is recommended for seven days after treatment.*
- *A test of cure is not recommended unless symptoms are persistent as cure rates are high. Retesting (for repeat infection) is recommended in three to six months.*
- *Consider testing for other STI (Hep B/C, HIV, Syphilis).*
- *HPV vaccine if not previously given.*
- *Partner notification and treatment (at least for partners in past 60 days).*
- *Discuss safe sex practices (condom use).*