

Dysuria/UTI
Ambulatory Small Talk
Update September 2008
Mario M. Ray, MD

1. A 50 year old female presents to your office with a 6 day complaint of burning sensation with urinary frequency. She is healthy and has not had any similar symptoms in the past. She denies fever, back pain, suprapubic pain, hematuria or vaginal discharge.
 - a. What is the differential diagnosis?
 - b. What is your differential diagnosis in a male with similar symptoms?
 - c. What are the most common pathogens to consider?
 - d. How would you make the diagnosis?

2. Describe the appropriate method of obtaining a urine sample in the setting of suspected UTI from an ambulatory adult non-catheterized male or female.

3. The patient above supplies appropriately collected specimen for dipstick urinalysis which is read by the lab as having the presence of leukocyte esterase and blood but no nitrite.
 - a. Is this patient likely to have a UTI based on these results?
 - b. What does the absence of nitrite on a dipstick UA mean?
 - c. When is it necessary to perform a urine culture?
 - d. What is the definition of a positive culture?

4. What is the most appropriate empiric antimicrobial therapy in the following clinical setting?
 - a. 23 year old healthy female with cystitis
 - b. 48 year old female with diabetes and cystitis
 - c. 78 year old male with an indwelling foley catheter
 - d. 28 year old healthy homosexual male with his first episode of cystitis

5. What is the appropriate duration of antimicrobial therapy in the following clinical settings?
 - a. 23 year old healthy female with cystitis
 - b. 48 year old female with diabetes and cystitis
 - c. 78 year old male with an indwelling foley catheter
 - d. 28 year old healthy homosexual male with his first episode of cystitis

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1. A 50 year old female presents to your office with a 6 day complaint of burning sensation with urination and urinary frequency. She is healthy and has nor had any similar symptoms in the past. She denies fever, back pain, suprapubic pain, hematuria or vaginal discharge.
 - a. What is your differential diagnosis? **Inflammation of the urethra or bladder trigone (from pyelonephritis, cystitis, or urethritis) or inflammation of the vaginal labia (from local trauma, estrogen deficient states leading to dryness of urethral and vaginal mucosa etc.)**
 - b. What is your differential diagnosis in a male with similar symptoms? **Prostatitis should also be considered in addition to cystitis and urethritis. The presentation of acute prostatitis typically involves fever pelvic/perineal pain and cloudy urine though the presentation of chronic prostatitis may be more variable.**
 - c. What are the most common pathogens? **Escherichia coli, staphylococcus saprophyticus, Chlamydia trachomatis (more unusual pathogens in this patient would include Proteus mirabilis, Klebsiella, species, enterococci, and Neisseria gonorrhoeae)**
 - d. How would you make the diagnosis? **Directed history (history above, plus can explore symptoms of vaginal odor, perineal pruritis or dyspareunia) and physical exam (pelvic exam indicated if any symptoms suggesting urethritis or vaginitis: look for any signs of vaginitis, urethral discharge, herpetic ulcerations or evidence of cervicitis). Urinalysis may be obtained in cases where the diagnosis is uncertain (the H&P does not point to a dx of UTI alone). Urine culture can be obtained in special circumstances (see below) if complicated infection, atypical symptoms, patient has failed initial therapy or symptoms recurrent in <1 month.**
2. Describe the appropriate method of obtaining a urine sample in the setting of suspected UTI from an ambulatory adult non-catheterized male or female. **Local disinfection with a non foaming antiseptic solution should be performed; avoid contact with perineal mucosa; waste first voided specimen (obtain midstream sample); sample analyzed as soon as possible.**
3. The patient above supplies an appropriately collected specimen for dipstick urinalysis which is read by the lab as having the presence of leukocyte esterase and blood but no nitrate.
 - a. Is this patient likely to have a UTI based on these results? **Yes. Leukocyte esterase is very specific but has variable sensitivity for the presence of leukocytes in the urine.**

- b. What does the absence of nitrite on dipstick UA mean?
Enterobacteraceae convert urinary nitrate to nitrite. This test is sensitive and specific but can lose sensitivity at low bacterial counts therefore false negatives can occur. False positives for this test occur in the setting of phenazopyridine use or ingestion of beets (yum!)
 - c. When is it necessary to perform a urine culture? **If symptoms are not characteristic of UTI, persistent symptoms following treatment, recurrent symptoms <1 month after treatment or in complicated UTI's that have a higher potential for serious complications or treatment failures: diabetes, immunosuppression, nosocomial infection, known urological abnormality, pregnancy, recent or current urinary tract instrumentation, infants, elderly.**
 - d. What is the definition of a positive culture? **Classically, $\geq 100,000$ CFU/ mL but 2 recent small studies have shown a high rate of UTI among symptomatic women with pyuria and ≥ 1000 CFU/mL**
4. What is the most appropriate empiric antimicrobial therapy in the following clinical settings?
- a. 23 year old health female with cystitis **TMP-SMX (if no allergy, use of this drug recently or recent hospitalization), fluoroquinolone, nitrofurantoin (used in the patient with mild to moderate symptoms who cannot use TMP-SMX; meant to be a fluoroquinolone-sparing agent)**
 - b. 48 year old female with diabetes and cystitis **quinolones are first line; 3rd generation cephalosporin or an aminoglycoside can be used for fluoroquinolone-allergic patients; ampicillin or amoxicillin may be added for suspected gram positive infections**
 - c. 78 year old male with an indwelling foley catheter **same as b**
 - d. 28 year old healthy homosexual male with his first episode of cystitis **same as answer (a), but nitrofurantoin should be avoided as may not achieve appropriate tissue concentration for occult prostatitis**
5. What is the appropriate duration of antimicrobial therapy in the following clinical settings?
- a. 23 year old healthy female with cystitis **3 days (rx with nitrofurantoin requires 7 days)**
 - b. 48 year old female with diabetes and cystitis **7 to 14 days depending on severity of infection**
 - c. 78 year old male with an indwelling foley catheter **10 to 14 days depending on severity of infection**
 - d. 28 year old healthy homosexual male with his first episode cystitis **7 days**

New Guidelines for Management of UTI in Nonpregnant Women
From The American College of Obstetricians and Gynecologists (ACOG) practice
bulletin March 2008

- Screening for and treatment of asymptomatic bacteriuria is not recommended in nonpregnant, premenopausal women. For acute pyelonephritis, inpatient or outpatient treatment should continue for 14 days. Women with uncomplicated acute bacterial cystitis, including women 65 years or older, should receive antibiotics for 3 days.
- For uncomplicated acute bacterial cystitis in nonpregnant women, the preferred therapy is trimethoprim–sulfamethoxazole twice daily for 3 days. In areas where resistance to this antimicrobial agent is more than 15% to 20%, another regimen should be chosen.