CLINICAL PRACTICE ALERT
URINARY TRACT INFECTIONS IN WOMEN

Introduction

More than one-half of women will have at least one urinary tract infection (UTI) during their lifetime and three to five percent of all women will have multiple recurrences. Because UTIs often occur in relation to intercourse, they are a common problem in women of reproductive age.

Key Points:

- A detailed history, and in some cases physical exam, is necessary to differentiate lower UTIs (acute bacterial cystitis, also referred to as a "bladder infection") from upper urinary tract infections (pyelonephritis).
- The initial diagnosis or treatment of a lower UTI does not routinely require a urine culture. Urine cultures in women with acute cystitis are limited to those who are pregnant, a recent history of recurrent UTIs, and those with treatment failure. Urine cultures are not a Family PACT benefit.
- Trimethoprim-sulfamethoxazole (TMP-SMX) given for 3 days is the preferred treatment regimen for UTIs, while nitrofurantoin for 5 days, ciprofloxacin for 3 days, and cephalexin given for 7 days are alternative regimens. All are covered by Family PACT.
- Acute and recurrent urethritis cause some of the same symptoms as a lower UTI.

Questions and Answers

What are the risk factors for urinary tract infection in premenopausal women?

The presence of risk factors may aid in the diagnosis of both acute and recurrent UTIs:

- Frequent or recent sexual activity, use of diaphragm and spermicidal agents, and higher parity
- A history of previous urinary tract infections
- Medical conditions such as diabetes, obesity, sickle cell anemia and trait, anatomic congenital abnormalities, and urinary tract stones

- Neurological disorders or medical conditions requiring indwelling or repetitive bladder catheterization

Should asymptomatic women be screened with a dipstick urinalysis?

No. Screening for and treatment of asymptomatic bacteriuria is not recommended in non-pregnant premenopausal women. Bacteriuria has not been shown to be harmful in this population nor does treatment decrease the frequency of symptomatic infections.

What are the presenting findings in women with UTIs?

History-taking is essential in differentiating uncomplicated from complicated urinary tract infection.

- Uncomplicated *acute cystitis* presents clinically as dysuria with symptoms of frequent and urgent urination. Women also may experience suprapubic pain or pressure and sometimes have hematuria. Fever is uncommon in women with uncomplicated lower UTI.
- *Acute urethritis* owing to infection from gonorrhea (GC) or *Chlamydia trachomatis* (CT), trichomonas, *Mycoplasma genitalium*, or genital herpes may present with similar clinical symptoms.
- *Acute pyelonephritis* (upper tract UTI) frequently occurs with a combination of fever and chills, flank pain, and varying degrees of dysuria, urgency, and frequency. Severe flank pain radiating to the groin is more indicative of kidney stones.
- Other factors that define *complicated UTIs* include pregnancy, diabetes, immunosuppression, previous pyelonephritis, symptoms lasting >14 days, recent hospitalization, presence of kidney stones, and structural abnormalities of the urinary tract.

How should women with UTI symptoms be evaluated?

Urine dipstick testing for pyuria with leukocyte esterase (LE) or nitrite (indicative of *E. coli* bacteriuria) is a rapid and inexpensive method with 75% sensitivity and 82% specificity. While a dipstick is a good initial test, women with negative dipstick test results and characteristic UTI symptoms may be treated presumptively. In addition, if urethral GC or CT are suspected based on sexual history or symptoms, collect a sample for a GC and CT nucleic acid amplification test (NAAT) from the vagina.

When is a urine culture necessary?

Urine culture is not indicated for the initial diagnosis or routine follow-up of an uncomplicated lower UTI. However, if clinical improvement does not occur within 48 hours, or in the case of a recurrent UTI, a urine culture is useful to help tailor treatment. Women with complicated UTIs also should have a urine culture performed (although it is not a Family PACT benefit; see below).

How should complicated acute cystitis in women be treated?

- Recommended: Sulfamethoxazole 800 mg and Trimethoprim 160 mg (TMP-SMX double strength) orally twice a day for 3 days is the preferred therapy for lower UTIs. SMX/TMP 400/80 mg tabs, 2 tabs twice a day for 3 days also can be used.
- Alternatives:

- Nitrofurantoin 100 mg orally twice a day for 5 days
- Cephalexin 500 mg orally twice a day or 250 mg orally four times a day for 7 days
- Ciprofloxacin 250 mg orally twice a day for 3 days
  - Flouroquinolones should not be used as a first line agent as overuse may hinder the ability to effectively use this class of antimicrobials in individuals with complicated UTIs and other infections.

Is a routine follow-up visit necessary after the treatment of a UTI?

Given the high cure rate after treatment for an uncomplicated UTI, a routine follow-up visit or test-of-cure urinalysis is not necessary. However, if the individual's symptoms do not respond to treatment, they should be re-evaluated for treatment failure or another condition.

How are recurrent UTIs categorized and managed?

Recurrent UTIs are defined as three or more episodes per year and may be due to relapse (failure to completely cure an initial infection) or re-infection with the same or a different organism. In addition to a urine culture and consideration of whether an anatomic cause may be present, the following interventions should be considered:

- Discontinuation of vaginal spermicides
- Drinking cranberry juice has been shown to decrease symptomatic UTIs. In a recent meta-analysis addressing the effectiveness of drinking cranberry juice and taking other formulations, it was reported that taking cranberry formulations was more effective compared with taking a placebo.
- Though not Family PACT benefits, the following interventions will reduce recurrent UTIs:
  - Intermittent (post-coital) or continuous prophylactic antimicrobial therapy prevent recurrences in 95% of cases.
  - Patient-initiated therapy with symptom onset. Women are given a prescription for one of the three-day dosage regimens and instructed to start therapy when symptoms develop. If symptoms do not improve in 48 hours, clinical evaluation should be performed.
- There is little evidence that aggressive hydration to prevent recurrences has any major effect, and this practice can theoretically worsen urinary retention issues, decrease urinary pH affecting the antibacterial activity of urine itself, and dilute antimicrobial concentrations in the urinary tract. It is currently not recommended for prevention of UTI recurrence.
- Post-coital voiding has not been proven effective, nor have douching or wiping techniques.

How is urethritis diagnosed and treated?

Acute and recurrent urethritis causes some of the same symptoms as a lower UTI.
Acute urethritis in women is mainly due to *Chlamydia trachomatis* (CT), gonorrhea (GC), trichomonas, or genital herpes. *Mycoplasma genitalium* can cause cervicitis and urethritis in females, although it is an unusual cause of acute urethritis.

Treatment of Acute Urethritis

- Recommended: Doxycycline 100 mg orally twice a day for 7 days
- Alternative: Azithromycin 1 g. orally in a single dose OR Azithromycin 500 mg orally in a

single dose; then 250 mg orally once a day for 4 days

- Consider treatment for gonococcal infection if the patient is at risk for gonorrhea or lives in a community where the prevalence of GC is high.
- To minimize transmission and re-infections, individuals treated for acute urethritis should abstain from sexual intercourse until they and their partner(s) have been treated (i.e., until completion of a 7-day regimen and symptoms have resolved or for 7 days after single-dose therapy). Individuals with acute urethritis should be tested for HIV and syphilis.
- Those with a specific diagnosis of chlamydia, gonorrhea, or trichomoniasis should be offered partner treatment services and instructed to return 3 months after treatment for repeat testing.

Treatment of Recurrent/Persistent Nongonococcal Urethritis

Symptomatic recurrent or persistent urethritis might be caused by treatment failure or re-infection after successful treatment. The most common cause of persistent or recurrent urethritis is *Mycoplasma genitalium*, especially after doxycycline therapy.

- Recommended: Doxycycline 100 mg orally twice a day for 7 days followed by moxifloxacin 400 mg orally once a day for 7 days
- Alternative: Doxycycline 100 mg orally twice a day for 7 days followed by azithromycin 1 g. orally initial dose, followed by 500 mg orally once a day for 3 additional days (2.5 g. total)

Application of Family PACT Policies

Can women with pyelonephritis or other "complicated" UTIs be treated under the Family PACT Program?

Family PACT providers may submit a Treatment Authorization Request (TAR) for the treatment of women with complicated UTIs that require antibiotics that exceed the limitations of Family PACT. However, these individuals often require referral for expert management, and occasionally hospitalization, which are not covered benefits.

For the complete text of the *Family PACT Standards*, official administrative practices, and billing information, please refer to the *Family PACT Policies, Procedures and Billing Instructions (PPBI)* manual.

Is the diagnosis and management of cystitis in men a covered benefit?

No. Bladder infections in reproductive-aged men rarely are STIs and therefore are outside of the scope of the Program.

What services are covered for evaluation and treatments of UTIs?

For the complete text of the *Family PACT Standards*, official administrative practices, and billing information, please refer to the *Family PACT Policies, Procedures and Billing Instructions (PPBI)* manual.

References

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