

**KAISER PERMANENTE OHIO  
URINARY TRACT INFECTIONS (ADULT FEMALE)**

|   |                     |            |
|---|---------------------|------------|
| Methodology: Evidence-Based                     | Issue Date:         | 1-98       |
| Champion: Internal Medicine                     | Most Recent Review: | 4-10, 4-12 |
| Key Stakeholders: IM, Urology,<br>Pharmacy, Lab | Next Review:        | 4-14       |

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**RECOMMENDATION**

**Assessment**

a.) What to assess:

**History**

- Age
- Sex
- Current medications
- LMP/Pregnancy
- Diaphragm and spermicide use
- #UTI in past year
- UTI within 3 months and compliance with treatment
- Chronic illnesses such as: diabetes, cancer, AIDS, illness requiring steroids

**Symptoms**

- Fever > 101
- Postcoital signs/symptoms
- Flank pain
- Hematuria
- Vomiting
- Vaginal itch/pain/discharge
- Dysuria, nocturia, lower abdominal pressure
- Onset of signs/symptoms < or > 48 hours

b) Frequency: As needed

**Treatment Regimens for Bacterial Urinary Tract Infections**

| Condition                             | Laboratory tests  | Characteristic Pathogen   | Mitigating Circumstances  | Recommended Empirical treatment   |
|---------------------------------------|---|---|---|---|
| Acute uncomplicated cystitis in women | If leukocyte esterase or nitrite is positive or pyuria is detected upon microscopic examination no culture is necessary.<br><br><b>Note:</b> lab will not auto culture under the above conditions unless the physician requests a culture | <i>E. coli</i> ,<br><i>S.saprophyticus</i><br><i>P.mirabilis</i> ,<br><i>K.pneumoniae</i> | If no UTI in last 3 months<br><br>For recurrent UTI's<br><br>Members with Sulfa allergy | <b>First Choice 3-day regimen:</b><br>Trimethoprim-Sulfamethoxazole (160 mg/800 mg q12hr)<br><br>Cipro 250 mg p.o. BID x 3 days<br><br><b>Alternate:</b><br><b>3 day treatment:</b><br>Trimethoprim (100 mg q 12hr)<br><b>7 day treatment:</b><br>Cephalexin (250 mg q 6hr) |



| Condition                                     | Laboratory tests                                  | Characteristic Pathogen | Mitigating Circumstances | Recommended Empirical treatment |
|---|---|-------------------------|--------------------------|---------------------------------|
| from cystitis with mild flank pain to sepsis) | culture two weeks after the completion of therapy |                         |                          |                                 |

Factors associated with complicated UTI:

Male sex, Pregnancy, Recent antimicrobial use, Diabetes, Immunosuppression, Indwelling urinary catheter, Recent urinary tract instrumentation, Functional or anatomic abnormality of the urinary tract

|                 |  |   |  |  |
|-----------------|--|---|--|--|
| Complicated UTI | Urine culture is essential and should be repeated 1-2 weeks after completion of treatment. | <i>E. coli</i> , Proteus species, Klebsiella species, Pseudomonas species, Serratia species, Enterococcus, Staphylococcus | Mild to moderate illness, no nausea or vomiting-outpatient therapy<br><br>For members with sulfa and trimethoprim allergy<br><br>For members with sulfa allergy and age greater than 18 years only | <b>Consider 10-14 day regimen:</b><br>Ciprofloxacin (500 mg q 12 hrs)<br>Initial treatment choice pending culture results<br><br>Trimethoprim-Sulfamethoxazole (160mg/800mg q12hrs)<br><br><b>Alternate :</b><br>Cephalexin (500 mg QID) |
|-----------------|--|---|--|--|

### Recurrent Infection in Women (Refer to Attached Algorithm)

**Urology Referral:** Consider Urology referral if greater than 3 UTIs in the past 6 months

### MEMBER EDUCATION

**Recurrent Infections:** Members should be told that the use of diaphragms and spermicides have been associated with recurrence in some patients and they should consider changing contraceptive methods. In women with recurrent episodes who comply with treatment, patient-initiated therapy undertaken when symptoms arise provide a convenient, safe, and effective management strategy. Postmenopausal women should be made aware of antimicrobial prophylaxis and topically applied estradiol cream as preventive measures. For post-coital prophylaxis members should be advised to empty their bladders after sexual intercourse.

## **KP SELF-CARE/SELF-MANAGEMENT RESOURCES**

- KP Healthwise Handbook
- [www.kp.org](http://www.kp.org) health encyclopedia
- Health Education core library: bladder infections/urinary tract infections brochures

## **SYSTEM SUPPORT**

Pharmacy, Lab, Nurse Clinics, Urology

## **PROPOSED OUTCOME & PROCESS MEASURES**

Outpatient visits for cystitis, #urine cultures/ Total number of UTIs, Use of ciprofloxacin, Percentage using three day therapy for cystitis

## **RATIONALE & SUMMARY OF EVIDENCE**

- Leukocyte esterase: 75-96% sensitive for pyuria, 94-98% specific
- 80-90% of illness caused by *E. coli*; 2-20% *S. saprophyticus*
- Gold standard for diagnosis: culture of > 100,000 colony forming units of a single pathogen per ml of urine
- In uncomplicated UTI a three day regimen is as good as a seven day regimen. Single- dose though favored by few, has a higher relapse rate. Consideration for 7 day regimen based on risk of recurrence e.g. age > 65, diabetes etc...
- 90% of recurrences in young women are episodes of exogenous reinfection typically months apart. Only rarely do such patients have anatomical or functional abnormalities of the urinary tract. Excretory urography, cystography, and cystoscopy are therefore of little use
- The routine use of imaging procedures for all young women who present with acute pyelonephritis is generally unrevealing and unnecessary.

## **REFERENCES**

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