**OHSU HEALTH**
**Urinary Tract Infection Empiric Antibiotic Guidelines - Adult**

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| Doc. #: HCT-CKT-177-GUD Rev. 030821 | Category: Clinical Knowledge & Therapeutics Executive Committee (CKTEC) Guideline | |
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| Reviser (Title): Antimicrobial Subcommittee of CKTEC | Owner (Title): CKTEC | |

**PURPOSE:**

To provide guidance on empiric antibiotic selection for adult patients with urinary tract infections.

**PERSONS AFFECTED:**

This guideline applies to OHSU workforce members involved in prescribing, dispensing or administrating antibiotics for the treatment of urinary tract infections.

**DEFINITIONS:**

- Cx: Culture
- ESBL: Extended-spectrum beta-lactamases
- TMP-SMX: Trimethoprim-sulfamethoxazole
- UTI: Urinary tract infection

**GUIDELINE REQUIREMENTS:**

Refer to Table 1 below.

# Table 1. UTI empiric antibiotic guidelines

| Diagnosis | Acute Cystitis | Pyelonephritis/ Complicated UTI *Outpatient* | Pyelonephritis/ Complicated UTI *Inpatient* | Pyelonephritis/ Complicated UTI *ESBL organism** |
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| **Signs/symptoms** | If patient is not able to communicate, consider all possible reasons for their signs and symptoms. Patient must meet at least 1 of the following UTI criteria below before ordering a urine cx for UTI. If patient does **NOT** meet any of the criteria below†, UTI is unlikely and a urine cx is **NOT** recommended:<br>• New or worsening fevers<br>• Rigors<br>• Altered mental status<br>• Malaise or lethargy<br>• Flank pain or costovertebral angle tenderness<br>• Acute hematuria<br>• Pelvic discomfort<br>• Suprapubic pain or tenderness<br>Without alternative cause<br>If patient does not have an indwelling urinary catheter, also assess for:<br>• Dysuria, urinary frequency and urinary urgency<br><br>Cloudy and/or foul-smelling urine alone are **NOT** symptoms of a UTI and should NOT trigger urine culture<br><br>†Exceptions include urine cx and treatment of asymptomatic bacteriuria prior to urologic procedures that disturb mucosal integrity and in pregnancy<br><br>Complicating factors include: abscess, metastatic infection, structural abnormality, foreign body (e.g. nephrolithiasis, stent, catheter), recent instrumentation, renal insufficiency, renal transplant, immunosuppression, UTI treatment failure | | | |
| **Labs** | • Urinalysis with reflex urine culture | | | |
| **Preferred Agents** | Nitrofurantoin 100mg PO BID x 5 days<br>**OR**<br>TMP-SMX DS 1 tablet PO BID x 3 days<br><br>Close follow-up recommended if TMP-SMX used due to potential for resistance. | Ceftriaxone 2g IV/IM once, then PO regimen based on culture susceptibilities | Ceftriaxone 2g IV daily x7 days<br>**Switch to PO based on culture as tolerated** | Ertapenem 1g IV daily x7 days<br>**Switch to PO based on culture as tolerated** |
| **Alternative Agents** | Cephalexin 1g PO TID x 7 days‡<br><br>**OR**<br><br>Fosfomycin 3g PO once | **PO/De-escalation Options – ideally, based on urine cx results**<br>Levofloxacin 750mg PO daily x 5 days<br>**OR** TMP-SMX DS 1 tab PO BID x 7 days**<br>**OR** Cefpodoxime 200mg PO BID x 10 days**‡ | | |
| **Duration** | • Do not extend duration for bacteremia associated with UTI in the absence of complicating factors.<br>• Patients with certain complicating factors (e.g., nephrolithiasis, advanced HIV, urinary diversion) and cystitis symptoms **without** upper tract symptoms may be treated like acute cystitis as above if monitored closely.<br>• Patients with complicated UTI who do not have prompt symptom resolution may need 10-14 days of therapy. | | | |
| **Clinical Pearls** | * ESBL therapy should not be used empirically unless the patient has a known history.<br>‡ Only use oral beta-lactams if other agents are contraindicated. In general, non-carbapenem beta-lactams should not be used for treatment of ESBL organisms unless otherwise recommended by Infectious Diseases (ID)/Antimicrobial Stewardship pharmacist or ID team.<br>** Do not use empirically or while inpatient for pyelonephritis/complicated UTI due to resistance and efficacy concerns. May be used to de-escalate from ceftriaxone for susceptible organisms **and** a fluoroquinolone is contraindicated.<br># Fosfomycin is expensive. Reserve for resistant infections or severe allergy to other agents.<br># Reserve fluoroquinolones for pyelonephritis and complicated UTI due to risk for development of antibiotic resistance, severe adverse effects and *C. difficile* infection. | | | |

**RELEVANT REFERENCES:**

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**APPROVING COMMITTEE(S):**

Antimicrobial Subcommittee of CKTEC
CKTEC

**REVISION HISTORY**

**Revision History Table**

| Document Number and Revision Level | Final Approval by | Date | Brief description of change/revision |
|---|---|---|---|
| HC-CKT-177-GUD Rev. 030821 | CKTEC | 02/25/2021 | • New guideline created |
| HC-CKT-177-GUD | CKTEC | 05/18/2021 | • Minimal edits discussed at committee |