Executive Summary on Management of Urinary Tract Infections

Urine cultures:

- Only obtain when symptoms of UTI (dysuria, frequency or urgency, suprapubic or CVA tenderness) are present.
- If cultures are positive but patient has no symptoms, **<u>do not treat</u>**. Exceptions to this are:
  1. Pregnant women and
  2. Patients undergoing urologic surgery with risk of mucosal bleeding (e.g., TURP, etc.)
- **It is important to remove and then replace a urinary catheter <u>before</u> drawing a culture. Do not draw cultures from a urine drainage bag.**
- <u>Pyuria is not an indication for treatment</u>. It is evidence of genitourinary inflammation, which can be seen in patients with catheter use, sexually transmitted diseases, interstitial nephritis, or asymptomatic bacteriuria.

Table 1: Recommended Regimens for Management of Uncomplicated UTI

First-line agents:

- Nitrofurantoin monohydrate/macrocrystals 100 mg BID **x 5 days** (~$40)*
  - Associated with significantly higher likelihood of clinical and microbiological cure compared with fosfomycin
  - Avoid use in patients with CrCl <30 mL/min

OR

- Trimethoprim-sulfamethoxazole 160/800 mg (one DS tablet) BID **x 3 days** ($5-10)*

OR

- Fosfomycin tromethamine 3g **single dose** (~$100)*

Second-line agents:

- Beta-lactams **x 5-7 days** (agents with dosing below)

OR

- Fluoroquinolones **x 3 days** (ciprofloxacin or levofloxacin)
  - Increased risk of *C. difficile* infection and resistance prevalence high

**Price without insurance*

Table 2: Outpatient Management of Complicated and/or Catheter-Associated UTI

First-line agents:

- Trimethoprim-sulfamethoxazole 160/800 mg (one DS tablet) BID **x 7 days** OR
- Levofloxacin 500mg PO daily or ciprofloxacin 500 mg PO BID x **5-7 days**

Second-line agents:

- Nitrofurantoin 100 mg PO BID **x 7-10 days**
  - Not recommended in patients with concern for pyelonephritis or CrCl <30 mL/min)
- Oral beta-lactams (agents with dosing below) **x 7 days**

Table 3: Inpatient Management of Complicated and/or Catheter-Associated UTI

Initial/First-line agents:

- Ceftriaxone 1g daily (2g if ≥80 kg) OR
- Ertapenem 1g IV q24h (Use if patient has history of an ESBL-producing organism)
- Piperacillin/tazobactam 4.5g IV q8h, infused over 4 hours (Use if patient has history of *Pseudomonas aeruginosa*)

Step-down/Second-line agents:

- Nitrofurantoin 100 mg PO BID **x 7 days total course (including initial IV)**
  - Not recommended in patients with concern for pyelonephritis or CrCl <30 mL/min)
- Trimethoprim-sulfamethoxazole 160/800 mg (one DS tablet) BID **x 7 days total course**
- Oral beta-lactams (agents with dosing below) **x 7 days total course (including initial IV)**

Table 4: Oral Beta-Lactam Regimens for Cystitis

Agent	Dosing
Cephalexin	500 mg BID
Cefuroxime	250 mg BID
Cefdinir	300 mg BID
Cefpodoxime-proxetil	100 mg BID
Amoxicillin-clavulanate	500 mg BID

Table 5: Recommended Regimens for Management of Pyelonephritis

Non-hospitalized:

Due to high resistance rates in *E. coli*, all patients should receive an initial one-time IV dose of ceftriaxone 1 gram or a consolidated 24-hour dose of an aminoglycoside (gentamicin 5 mg/kg), then

- Levofloxacin 750 mg PO daily OR Ciprofloxacin 500 mg PO BID **x 5-7 days**

OR

- Trimethoprim-sulfamethoxazole 160/800 mg (one DS tab) PO BID **x 10-14 days**

Hospitalized

- No MDR risk factors
  - Ceftriaxone 1g IV q24h (2g if >80 kg)
  - If allergic, refer to NM Allergy Guidance
- Risk factors for MDR*
  - Piperacillin/tazobactam 4.5g IV q8h, infused over 4 hours **OR**
  - Ertapenem 1g IV q24h (Use if patient has history of an ESBL-producing organism) **OR**
  - Cefepime 1g q6h
  - If allergic, refer to NM Allergy Guidance

Patients with septic shock:

- Consider the addition of gentamicin 7 mg/kg IV q24h or vancomycin per pharmacy consult

A 7 day course of IV therapy is considered effective even with bacteremia, but up to 14 days total may be needed with oral antibiotics depending on the agent

**For a full list of MDR risk factors, refer to the full Urinary Tract Infection and Asymptomatic Bacteriuria Guidance Document*

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