VANDERBILT UNIVERSITY

MEDICAL CENTER

Vanderbilt Adult Antimicrobial Stewardship Program

Urinary Tract Infections (Geriatrics) – Inpatient Management

This guidance document is meant to provide general recommendations and does not supersede clinical decision making.

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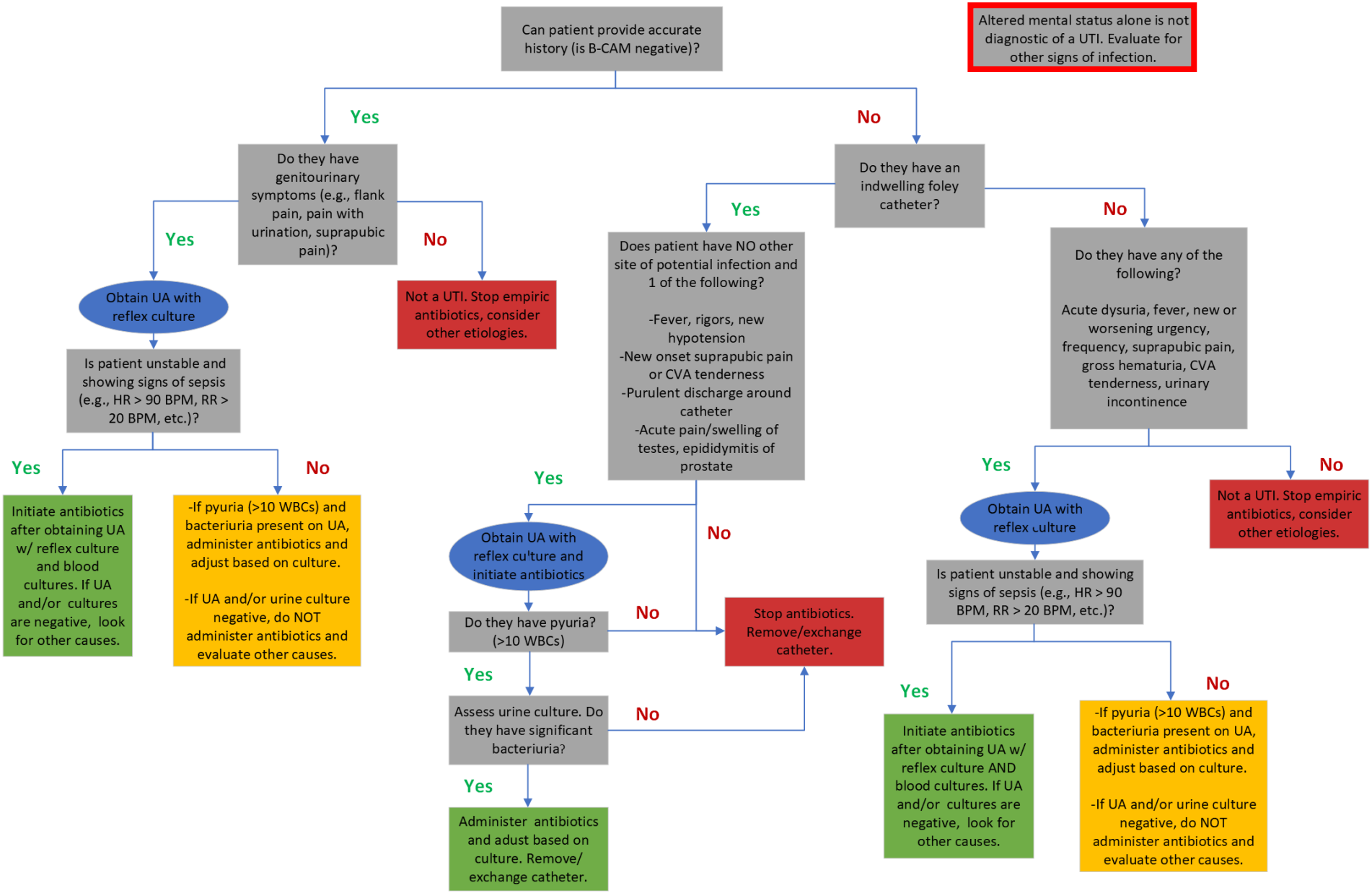
This algorithm applies to both community-dwelling and institutionalized geriatric patients and excludes patients with neutropenia (ANC <500), spinal cord injury, or urological instrumentation. General recommendations (<u>not</u> specific to geriatric patients) can be found via the Agile MD Pathway "*VASP Urinary Tract Infections – Inpatient Management*".



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Treatment

General Treatment Considerations

- Previous cultures from the last 3-6 months should inform empiric therapy selection.
- Treatment should be adjusted based on culture and susceptibilities.
- **Antimicrobial Considerations:**
  - Adjust doses based on renal function using the Antimicrobial Dosing Guidance.
  - Consider patient's comorbid conditions and drug interactions when selecting therapy.
  - **Fluoroquinolones** are NOT recommended for empiric therapy due to increasing rates of E. coli resistance and high propensity for collateral damage. Reserve for use when there are no suitable alternatives.
  - **Fosfomycin** is restricted to ID approval and should ONLY be used for *E. coli* and *E. faecalis.*
  - **Nitrofurantoin** is included in the Beers Criteria and should be avoided if CrCl <30 mL/min or for long-term suppression. Can be considered as an alternative if organism is susceptible (*E. coli* and susceptible gram-positive organisms).
  - **TMP-SMX** is included in the Beers Criteria for patients on concomitant warfarin or phenytoin and patients with renal insufficiency (especially with ACE-inhibitors/ARBs/ aldosterone antagonists).
  - When IV therapy is initiated, transition from **IV to PO** should be considered for patients who meet the following criteria:
    - Able to tolerate enteral medications
    - Signs of clinical improvement (defervesced, down-trending WBC, etc.)
- **Durations of Therapy:**
  - Recommendations are overall treatment durations that should account for both IV and PO days of therapy.
- This guidance does NOT include treatment for prostatitis or perinephric abscess; please consult ID for assistance if needed.

Clinical Syndrome	Treatment	Comments
Uncomplicated UTI (nonpregnant female or male patients with infection confined to the bladder and without obstruction, catheter, fever, bacteremia, or flank pain)	Empiric Therapy • Cephalexin 500 mg PO BID x 5 days • Amoxicillin-clavulanate 875/125 mg PO BID x 5 days • If patient cannot take PO meds: Ceftriaxone 2g IV daily x 3 days Alternatives (confirm susceptibility) • Amoxicillin 500 mg PO TID x 5 days • TMP-SMX 1 DS tablet (800/160 mg) PO BID x 3 days • Ciprofloxacin 500 mg PO BID or Levofloxacin 500 mg PO daily x 3 days • Fosfomycin 3g PO x 1 • Nitrofurantoin monohydrate 100 mg PO BID x 5 days • Gentamicin or tobramycin 5 mg/kg IV x 1	• Fluoroquinolones should be reserved for complicated UTIs. Susceptibility must be confirmed. • If IV is continued for the entire course, duration can be limited to 3 days total. • A single dose of an aminoglycoside does not require a pharmacy consult or levels. Use actual body weight for non-obese patients and adjusted body weight for obese patients. Avoid if CrCl <30 mL/min.

Complicated UTI
 	
(infection beyond the bladder in female or male patients including pyelonephritis, febrile UTI, sepsis, bacteremia from urinary source, and catheter-associated UTIs)
	Empiric Therapy
	• Ceftriaxone 2g IV daily
	• *Pseudomonas* or MDRO Risk Factors:
	  ○ Piperacillin-tazobactam 4.5g IV q8h
	  ○ Cefepime 2g IV q8h
		• If there is concern for *Enterococcus* spp. piperacillin-tazobactam is the preferred empiric agent.
		• ***Pseudomonas* or MDRO Risk Factors:** Recent isolation (within 3-6 months) of Pseudomonas or organism resistant to ceftriaxone, hospitalization with IV antibiotic use in last 90 days, immunocompromised (chemotherapy in last 6 months, neutropenia, SOT or BMT on immunosuppressive therapy, prednisone >20 mg/day or equivalent, HIV with CD4 <200, DMARD, etc.)
		• MRSA coverage is NOT usually indicated unless the patient has a history of MRSA UTI or has recent procedure or instrumentation.
		• Total duration of therapy is generally 7 days. Day 1 is the first day of active antibiotic therapy.

Stepdown to PO Therapy for Complicated UTI (confirm susceptibilities) Without bacteremia or pyelonephritis: • Cephalexin 500 mg PO q6h x 7 days • Amoxicillin-clavulanate 875/125 mg PO BID x 7 days • Amoxicillin 500 mg PO TID x 7 days • TMP-SMX 1 DS tablet (800/160 mg) PO BID x 7 days		

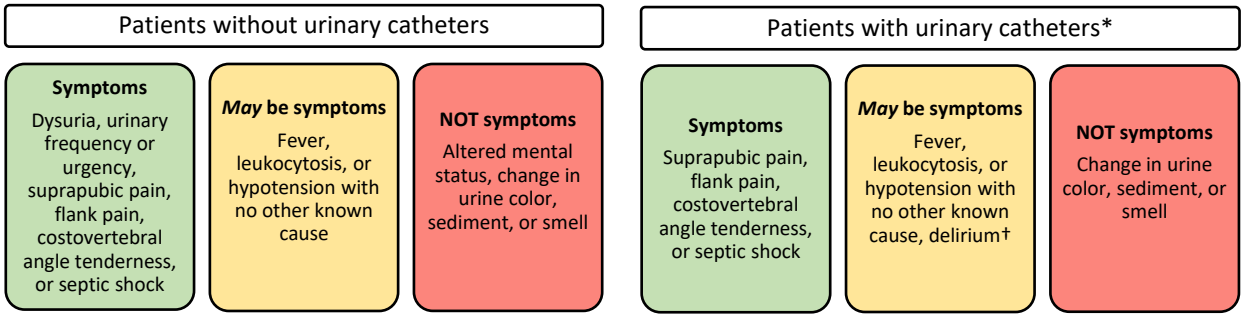
- Levofloxacin 500 mg PO daily x 5 days
- Ciprofloxacin 500 mg PO BID (750 mg BID for *Pseudomonas*) x 5 days

With bacteremia or pyelonephritis:

- Refer to the Guidance on Oral Options for Uncomplicated Bacteremia
- Regimens recommended for bacteremia may also be used to treat cUTI due to susceptible organisms in patients without bacteremia

Appendix

Signs and Symptoms of Urinary Tract Infections



*Catheter refers to foley catheters and suprapubic catheters
†Spasticity or autonomic dysreflexia in patients w/ spinal cord injury
Adapted from Claeys et al.[3]

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