

Urinary Tract Infection (UTI)

Includes: Febrile patients at least 2 months old with symptoms suggestive of UTI.

Excludes: Patients with risk factor (neurologic or anatomic abnormality, previous surgery, equipment, immunodeficiency) known to be associated with recurrent UTI or renal damage.

Diagnostic testing

Option 1: Obtain urine specimen via bladder catheterization or sterile clean catch specimen if toilet trained, for complete urinalysis (UA) and culture.

Option 2: Obtain urine specimen through most convenient means for UA. If UA suggests UTI (+ leukocyte esterase or + nitrite or microscopic analysis + for bacteria or leukocytes), then urine specimen should be obtained through catheterization for UA and culture.

Diagnosis of UTI

Presumptive UTI: Urinalysis from sterile specimen demonstrates + leukocyte esterase **OR** + nitrite **OR** microscopic analysis + for bacteria or leukocytes (≥ 5 WBC/HPF, ≥ 10 WBC/mm³)

Culture positive UTI: Presence of at least 100,000 colony forming units (CFU) from clean catch specimen or at least 50,000 CFU from catheterized specimen culture

NOTE: Testing must be performed on fresh specimen (<1hr after voiding if stored at room temperature; <4hr if refrigerated). False negative results for nitrites may occur if organism is Gram positive bacteria or from specimen that has not remained in bladder for at least 4hr (common in infants).

Patient ill appearing or has complex infection, unable to tolerate PO, failed outpatient therapy

Patient well appearing, able to tolerate PO

Intravenous management

- First line: **cefazolin** 12.5mg/kg/dose IV Q6hr (max 500mg/dose) (if local E coli susceptibility is >80%)
- Second line: **ceftriaxone** 50 mg/kg/dose IV Q24hr (max 2 g/dose) if local resistance to cefazolin
- Could consider TMP-SMX, ampicillin-sulbactam (decision based on local resistance)

Oral management

- First line: **cephalexin** 25mg/kg/dose PO TID (max 500mg/dose) (if local E coli susceptibility is >80%)
- Second line: 2nd or 3rd generation cephalosporin **OR** TMP-SMX **OR** amoxicillin-clavulanate (decision based on local resistance)
- Note:** Cephalexin is highly concentrated in urine, so intermediate or resistant bacteria sometimes still respond to treatment

Transition to oral antibiotics as soon as patient clinically improved, able to tolerate PO

Narrow antibiotic treatment choice as soon as urine culture identification and sensitivity available, e.g. enterococcal UTI

Complete shortened course of antibiotics if appropriate
 ≤ 10 days if < 2 years old;
 ≤ 7 days if ≥ 2 years old

FOLLOW UP:
 All febrile infants should undergo renal, bladder ultrasound

For pediatric hospitalist consultation or transfer, call Community Referral Line at 406 327 4726