Urinary Tract Infections

INFECTION	MOST LIKELY ORGANIMS	THERAPY CATEGORY	ANTIMICROBIALS	COMMENTS
URINARY TRACT INFECTION • 28 days of age or less • community-acquired	*Enterobacteriales* *Enterococcus* spp	First line	**Ampicillin IV**: Lexicomp dosages **AND** **Gentamicin IV** * : Lexicomp dosages	**If meningitis suspected**, refer to meningitis section * Refer to Protocol for the Use and Therapeutic Drug Monitoring of Aminoglycosides at the Montreal Children's Hospital (MCH)
URINARY TRACT INFECTION • more than 29 days of age • mild-moderate (not requiring hospitalization) • community-acquired	*Enterobacteriales* *Enterococcus* spp Staph *saprophyticus* (consider this as well as above in adolescent females)		**Cefixime 8 mg/kg/dose PO q24h** (max. 400 mg/**DAY**) **OR** **If *Enterococcus* suspected based on nitrite-negative urinalysis AND presence of risk factors for it*:** **Amoxicillin/clavulanate 45 mg/kg/DAY PO DIVIDED q8h** (max. 875 mg/dose) **If adolescent and more than 50 kg with cystitis:** **Nitrofurantoin (Macrobid) 100 mg PO q12h**	Consider doing a pregnancy test in sexually active females *Known underlying GU anomalies, recent urinary instrumentation
		Penicillin allergy	**Trimethoprim/ sulfamethoxazole (TMP/SMX) 6-12 mg TMP/kg/DAY PO DIVIDED q12h** (max. 160 mg TMP/dose)* **If *Enterococcus* suspected based on nitrite-negative**	*Higher rates of resistance, if used review urine culture results ** Known underlying GU anomalies, recent urinary instrumentation

			urinalysis AND presence of risk factors for it:** Consult ID	
URINARY TRACT INFECTION • more than 29 days of age • requiring hospitalization (e.g. cannot tolerate oral antibiotics, associated sepsis) • complicated (e.g. obstructed GU tract, renal transplant), community-acquired	*Enterobacteriales* *Enterococcus* spp *Pseudomonas*	First line	**Ampicillin 50 mg/kg/dose IV q6h** (max. 2 g/dose) **AND** **Gentamicin* 7.5 mg/kg/dose IV q24h** **If renal transplant and/or renal failure, use instead:** **Piperacillin-tazobactam dosed according to creatinine clearance**: Lexicomp dosages	Consider doing a pregnancy test in sexually active females Consider not adding ampicillin if nitrites are positive * Refer to Protocol for the Use and Therapeutic Drug Monitoring of Aminoglycosides at the Montreal Children's Hospital (MCH)
		Penicillin allergy	**Ceftriaxone 50 mg/kg/dose IV q24h** (max. 2g/dose)	
HEALTHCARE ASSOCIATED URINARY TRACT INFECTION (e.g. catheter-associated, procedure-related)	*Enterobacteriales* *Pseudomonas* *Enterococococcus* spp Rarely: Staph *aureus* *Candida* spp	First line	**Piperacillin-tazobactam 80-100 mg/kg/dose IV q6-8h** (max. 12 g/**DAY**) (*Refer to MCH formulary for neonatal dosages*)	Empiric antifungal therapy is not recommended as catheter-associated UTI due to *Candida* usually resolves with urinary catheter removal.
		Penicillin allergy	**Imipenem-cilastatin 25 mg/kg/dose IV q6h** (max. 500 mg/dose)	

REFERENCES:

Empiric Antimicrobial Therapy Guide: Version 9, May 2025