

Urinary Tract Infection

- Upper urinary tract Infections:
 - **Pyelonephritis**
- Lower urinary tract infections
 - **Cystitis** (“traditional” UTI)
 - **Urethritis** (often sexually-transmitted)
 - **Prostatitis**



Symptoms of Urinary Tract Infection

- Dysuria
- Increased frequency
- Hematuria
- Fever
- Nausea/Vomiting (pyelonephritis)
- Flank pain (pyelonephritis)



Findings on Exam in UTI

- Physical Exam:
 - CVA tenderness (**pyelonephritis**)
 - Urethral discharge (**urethritis**)
 - Tender prostate on DRE (**prostatitis**)
- Labs: Urinalysis
 - + leukocyte esterase
 - + nitrites
 - More likely gram-negative rods
 - + WBCs
 - + RBCs



Culture in UTI

- Positive Urine Culture = $>10^5$ CFU/mL
- Most common pathogen for **cystitis**, **prostatitis**, **pyelonephritis**:
 - *Escherichia coli*
 - *Staphylococcus saprophyticus*
 - *Proteus mirabilis*
 - *Klebsiella*
 - *Enterococcus*
- Most common pathogen for urethritis
 - *Chlamydia trachomatis*
 - *Neisseria Gonorrhea*



Lower Urinary Tract Infection - Cystitis

- Uncomplicated (Simple) cystitis
 - In healthy woman, with no signs of systemic disease
- Complicated cystitis
 - In men, or woman with comorbid medical problems.
- Recurrent cystitis



Uncomplicated (simple) Cystitis

- Definition
 - Healthy adult woman (over age 12)
 - Non-pregnant
 - No fever, nausea, vomiting, flank pain
- Diagnosis
 - Dipstick urinalysis (no culture or lab tests needed)
- Treatment
 - Trimethoprim/Sulfamethoxazole for **3 days**
 - May use fluoroquinolone (ciprofloxacin or levofloxacin) in patient with sulfa allergy, areas with high rates of bactrim-resistance
- Risk factors:
 - Sexual intercourse
 - May recommend post-coital voiding or prophylactic antibiotic use.

