

Urinary Tract Infection

General Consideration

- Approximately 7% of febrile infants have a urinary tract infection
- About 7.8% of older patients with urinary symptoms and/or fever have a UTI
- The prevalence of UTI is highest in boys younger than one year and girls younger than four years
- Risk factors include female gender, lack of circumcision in males, white race, urinary obstruction, bowel and bladder dysfunction, vesicoureteral reflux, and sexual activity
- *Escherichia coli* accounts for 80% of UTIs in children. About 20% of *E.coli* are resistant to trimethoprim/sulfamethoxazole

Diagnosis

- UTI should be suspected in young children with fever without source
- Nitrites on a urine dipstick are fairly specific for UTI; while leukocyte esterase is sensitive, but not as specific
- A bag urine sample should not be used to diagnose UTI. A urine catheterization should be performed in younger children and a clean-catch sample is appropriate for older children
- A urine culture should be sent to confirm diagnosis and to guide therapy
- Always check previous cultures and sensitivities
- Pyelonephritis should be suspected in patients with fever and those with CVA tenderness

Treatment Recommendations – Uncomplicated Cystitis

1. First line - **Cephalexin**
 - Children < 12yr: 50 mg/kg divided three times daily for 10 days
 - 12yr and up: 50 mg/kg divided twice daily for 10 days
 - Max dose: 500 mg per dose
2. Second line – **Nitrofurantoin**
 - Infants and children: Furadantin/Macrochantin 5 mg/kg divided four times daily for 7 days
 - Adolescents: Macrobid 100 mg twice daily for 7 days
 - Max dose: Furadantin/Macrochantin 100mg four times daily. Macrobid 100 mg twice daily
3. Penicillin allergy (non-life threatening) – **Cefdinir**
 - 14 mg/kg divided twice daily for 10 days
 - Max dose: 300 mg twice daily
4. Cephalosporin allergy – **Trimethoprim/Sulfamethoxazole**
 - 8 mg TMP/kg/day divided twice daily for 10 days
 - Max dose: 160 mg TMP twice daily
 - Be aware that 20% of *E.coli* may be resistant
5. History of organism resistant to other agents – **Ciprofloxacin**
 - 20-40 mg/kg divided twice daily for 10 days
 - Max dose: 250 mg twice daily for uncomplicated cystitis

Treatment Recommendations – Pyelonephritis

1. First Line - **Cephalexin**
 - Children < 12yr: 50 mg/kg divided three times daily for 10 days
 - 12yr and up: 50 mg/kg divided twice daily for 10 days
 - Max dose: 500 mg per dose
2. Alternative – **Ceftriaxone plus cefixime**
 - Ceftriaxone 50 mg/kg up to 1g IV/IM once followed by
 - Cefixime 8 mg/kg daily for 10 days
 - Max cefixime dose: 400 mg daily
3. Cephalosporin allergy – **Trimethoprim/Sulfamethoxazole**
 - 8 mg TMP/kg/day divided twice daily for 10 days
 - Max dose: 160 mg TMP twice daily
 - Be aware that 20% of *E.coli* may be resistant
4. History of organism resistant to other agents – **Ciprofloxacin**
 - 20-40 mg/kg divided twice daily for 10 days
 - Max dose: 750 mg twice daily for complicated pyelonephritis

Not Recommended

- Trimethoprim/Sulfamethoxazole unless there is cephalosporin allergy or previous resistant organism
- Amoxicillin unless there is concern for *Enterococcus*
- Nitrofurantoin if there is any concern for pyelonephritis
- Fluoroquinolones unless there are no other alternatives

