Objectives

- Identify key counseling pearls for common antibiotics used to prevent and treat urinary tract infections (uncomplicated and complicated cystitis and pyelonephritis)
Nitrofurantoin
(monohydrate/macrocrystals)

- *Used for Treatment & Prophylaxis of Uncomplicated UTI and Treatment of Complicated UTI*

- **Dosing:**
  - Uncomplicated: 100 mg po BID x 5 days
  - Complicated: Duration 7-14 days
  - Prophylaxis: 50-100 mg po QHS

- **Administration:**
  - Take with food

- **Adverse Effects:**
  - NVD, decreased appetite, urine discoloration, HA
Nitrofurantoin  
(monohydrate/macrocrystals)

**Caution:**
- Contraindicated CrCl $< 60$ ml/min
  - Efficacy: Drug needs renal clearance in order to get into urine
  - Toxicity: Toxic metabolite
- Concentrated in bladder and will not get into kidneys; cannot use if pyelonephritis suspected

**Other Pearls:**
- Long-term use for prophylaxis
  - Nitrofurantoin has not been shown to increase resistance
  - Safe and well-tolerated in prophylactic doses up to 12 months
    - However, it has been associated with RARE pulmonary reactions, chronic hepatitis and neuropathies
Trimethoprim/Sulfamethoxazole

- Used for Treatment of Uncomplicated & Complicated UTI and Pyelonephritis
  - IF resistant rates <20%, or if infecting organism is known to be susceptible.

- Dosing:
  - Uncomplicated: 800/160 mg po BID x 3 days
  - Complicated: Duration 7-14 days
  - Prophylaxis (trimethoprim only): 100 mg po daily, not recommended post-coital

- Administration:
  - Take with food or a full glass of water
Trimethoprim/Sulfamethoxazole

- **Adverse Effects:**
  - NVD, sun sensitivity, dizziness
  - hypersensitivity (rash, urticaria)

- **Drug Interactions:**
  - warfarin (increase bleeding risk), methotrexate, dofetilide

- **Other Pearls:**
  - Avoid in the last month of pregnancy (increased risk of kernicterus in infants)
Fosfomycin

- Used for Treatment of Uncomplicated UTI

- **Dosing:**
  - 3 grams as single dose

- **Administration:**
  - Pour and mix contents of package into 3-4 ounces of water (not hot water)
  - Administer immediately after dissolving in water
  - With or without food

- **Adverse Effects:**
  - NVD, headache, dizziness, back pain, rash
Fluoroquinolones
(ciprofloxacin/levofloxacin)

- *Used for Treatment of Uncomplicated & Complicated UTI*

- **Dosing:**
  - Uncomplicated: Ciprofloxacin or Levofloxacin x 3 days
  - Complicated: Duration 7-14 days

- **Administration:**
  - With or without food
  - Space by 2 hours before or 4-6 hours after antacids, iron, multivitamins, dairy
Fluoroquinolones
(ciprofloxacin/levofloxacin)

□ Adverse Effects:
  ▪ NVD, sun sensitivity, HA, hyper-/hypoglycemia in DM
  ▪ RARE tendonitis and tendon rupture

□ Drug Interactions:
  ▪ Warfarin (increase bleeding risk)
  ▪ Anti-arrhythmic agents

□ Other Pearls:
  ▪ Increase QTc interval (risk of torsade de pointes)
  ▪ Avoid in pregnancy
Beta-Lactams
(Amoxicillin/clavulanate, cefdinir, cefaclor, cefpodoxime)

- Used for Treatment of Uncomplicated & Complicated UTI and Pyelonephritis (generally last line)
- **Dosing:**
  - Uncomplicated: 3-7 days
  - Complicated: 7-14 days
  - Pyelonephritis: 10-14 days
    - (must give initial IV dose of long-acting ABX due to resistance rates)
Beta-Lactams

- **Administration:**
  - Augmentin: Take with food
  - Cefaclor: Take with or without food
  - Cefpodoxime: Take with food
  - Cefdinir: space by 2 hrs from antacids or iron containing supplements

- **Adverse Effects:**
  - Hypersensitivity reaction, NVD
Beta-Lactams

- **Drug Interactions:**
  - Cefpodoxime (prodrug), cefdinir, cefaclor
    - H2RA and antacids; space 2 hours
  - Probenecid inhibits renal secretion of most BL
  - Allopurinol + Amoxicillin: increase risk of rash
  - BL can reduce vitamin K production (increase bleeding risk)
General Antibiotic Tips for UTIs

- Educate patients to take antibiotics for the duration prescribed, even if symptoms go away!

- Monitor for symptomatic improvement (24-72 hours)

- Minimize GI upset/diarrhea:
  - Take medication with food
  - Eat yogurt while on the antibiotic (space if necessary)
  - Start a probiotic

- Antibiotic use for UTI in pregnancy

- ABX + OC interaction is controversial!
Behavioral Modifications

- To help prevent the development of recurrent UTIs:
  - Liberal fluid intake
  - Cranberry supplements
  - Probiotic
  - Post-coital voiding
  - Wiping front to back after toileting
  - Avoiding spermicides
Thank you for your time!

Please complete the tutorial assessment.