April 2014 StuNews Clinical Case

Submitted by: Sorana Gabriela Pisano, Pharm.D. Candidate 2015, LECOM, in Erie, PA

Reviewed by: Maryann Scholl, Pharm.D, Clinical Pharmacist Specialist, UPMC Hamot

Case Vignette:

A 5'5", 61.4-kg, 26-year-old, sexually active woman presents to her physician's office with dysuria (painful urination), frequent urination, and mild suprapubic pain. Her symptoms started abruptly two days ago and she does not have a fever or any flank pain. She is diagnosed with a urinary tract infection (UTI).

PMH: None

Vital Signs: BP 122/84; HR 65; RR 25; Temp. 37oC

Urine Dipstick test:

+Nitrates,

+Leukocyte esterase

+Urine Bacterial count: 106 bacteria/mL

Test your knowledge:

1. What is the most likely pathogen causing her UTI?

   Escherichia *coli*

2. What are her risk factors for developing a UTI?

   Female
   Age (15-54 years old)

3. How would this UTI be classified: uncomplicated or complicated?

   Uncomplicated;
   The patient does not present with systemic signs and symptoms such fever, severe flank pain, vomiting, hematuria, or suspicion of pyelonephritis.

4. What is the primary drug therapy recommended for the treatment of her UTI?

The following antimicrobials represent the first tier: (1) nitrofurantoin at a dosage of 100 mg twice per day for five days; (2) trimethoprim/sulfamethoxazole (Bactrim, Septra) at a dosage of one double-strength tablet (160/800 mg) twice per day for three days in regions where the prevalence of resistance of community uropathogens does not exceed 20 percent; and (3) fosfomycin at a single dose of 3 g. The duration of therapy for nitrofurantoin has been reduced to five days compared with the previous IDSA guidelines of seven days, based on research showing effectiveness with a shorter duration of therapy. Fosfomycin may be less effective and is not widely available in the United States.

5. Five months later, the patient returns with a new, symptomatic UTI; however, she is in her first trimester of pregnancy. What is the most appropriate drug therapy?

   Amoxicillin 500 mg PO every 12 hours for 3-7 days, or
   Amoxicillin-clavulanate 500 mg PO every 12 hours for 3-7 days, or
   Cephalexin 500 mg PO every 12 hours for 3-7 days

6. Does the patient need a follow-up urine culture after resolution of signs and symptoms of her UTI?

   A follow-up culture for test of cure should be obtained a week after completion of therapy. Periodic screening for recurrent bacteriuria should be done throughout gestation.

References:

1. Hooton TM, and Kalpana Gupta. Urinary tract infections and asymptomatic bacteriuria in pregnancy. In: *UpToDate*, Calderwood SB (ED), UpToDate, 2013.

2. Nicolle, Lindsay et al. Infectious disease society of America guidelines for the diagnosis and treatment of asymptomatic bacteriuria in adults. *IDSA guidelines for asymptomatic bacteriuria.* 2005; 40: 643 – 654.
3. Colgan R, Williams M. Diagnosis and Treatment of Acute Uncomplicated Cystitis. Am Fam Physician. 2011 Oct 1;84(7):771-776.