

StuNews 2011 Fall/Winter Issue Clinical Case

Submitted by Kristina Rokas, Member 2011-2012 National StuNet Advisory Committee

Reviewed by Brandon Bookstaver, Pharm.D., BCPS (AQ-ID)

A 21 year old woman presents to her physician with difficulty breathing, productive cough, and shaking chills. Patient has a fever of 39°C, WBC 14,000/mm³, and chest radiograph suspicious for pneumonia. She receives a diagnosis of community-acquired bacterial pneumonia (CABP).

PMH:

Tonsillectomy in 2005

Sinusitis one month prior and treated with azithromycin

Current Medications: Yaz® (drospirenone/ethinyl estradiol), one tablet daily; multivitamin daily

Allergies: Shellfish, penicillin (urticaria)

Test your clinical knowledge:

1. What is the most common bacterial cause of CABP?
2. What other bacterial pathogens are commonly responsible for CABP?
3. The patient does not require hospital admission. What is the recommended empiric therapy?
4. What is an important counseling point with oral contraceptives and concomitant antibiotics?

Answers:

1. The number one cause of CABP is *Streptococcus pneumoniae*.
2. Other causes of CABP include *Haemophilus influenzae*, *Moraxella catarrhalis*, and the atypical pathogens (*Chlamydia pneumoniae*, *Mycoplasma pneumoniae*, *Legionella pneumophila*).
3. The Infectious Disease Society of America and American Thoracic Society recommend an antibiotic from an alternative class in patients who have used antimicrobials within the previous 3 months. This patient received azithromycin one-month prior, and therefore the most appropriate regimen for her would be a respiratory fluoroquinolone such as moxifloxacin or levofloxacin (Level I evidence).
4. There is controversy regarding antimicrobials and oral contraceptives when used concomitantly. The mechanism, if any, is not clear. Theoretically, antibiotics such as penicillin and tetracycline can reduce bacteria in the intestine that are involved in the enterohepatic circulation of estrogens, leading to a reduction in estrogen serum concentration. Other mechanisms include enzyme induction following rifampin, griseofulvin, nafcillin, and dicloxacillin, or malabsorption of contraceptive hormones due to antibiotic-induced diarrhea or vomiting.⁴ Due to the potential interaction between antimicrobials and oral contraceptives, a cautious approach is advised. Counsel women to use backup contraception during the cycle in which they take both an oral contraceptive and antibiotic.

References:

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