If you’re preparing for the United States Medical Licensing Examination® (USMLE®) Step 2 exam, you might want to know which questions are most often missed by test-prep takers. Check out this example from Kaplan Medical, and read an expert explanation of the answer. Also check out all posts in this series.

This month’s stumper

A 72-year-old man with a known history of chronic obstructive pulmonary disease (COPD) comes to the clinic complaining of a worsening cough. He states that he often gets bronchitis and thinks he is coming down with a case of it now. His cough is productive of copious amounts of green-tinged sputum and is associated with some mild chest pain. Aside from the increased cough and sputum production over the last three days, he has been in his usual state of health. He denies fever or chills.

In addition to his COPD, he has a past medical history significant for rate-controlled atrial fibrillation, hypertension, gout, and depression. His current medications include warfarin, atenolol, hydrochlorothiazide (HCTZ), colchicine and fluoxetine. Vital signs are temperature 37.0°C (98.6°F), blood pressure 142/98 mm Hg, pulse 74/min, and respirations 22/min. Chest examination reveals diffusely diminished breath sounds, scattered end-expiratory wheezes and rare rhonchi. Chest radiograph shows flattened diaphragms, no consolidation, effusion or masses seen. He is given a prescription for clarithromycin to treat the COPD exacerbation.

Which of the following is an appropriate course of action to minimize harmful drug interactions?

A. Check electrolytes, adjust HCTZ appropriately.

B. Decrease atenolol, monitor pulse and blood pressure.

C. Decrease warfarin, monitor INR.
D. Hold fluoxetine until after antibiotics are completed.

E. Replace colchicine with allopurinol.

The correct answer is C.

Kaplan Medical explains why

Polypharmacy is a major cause of morbidity and mortality in elderly patients. Warfarin is notorious for interactions with many commonly prescribed medications, including those used to treat lung disease (i.e., most of the quinolones and macrolides). A good rule of thumb is to assume warfarin will interact with a medication and check before prescribing it. Fluconazole, amiodarone, metronidazole, erythromycin, and trimethoprim/sulfamethoxazole are among the most common culprits of warfarin toxicity. Frequent monitoring of the PT/INR and appropriate dose adjustments should be done to avoid it.

Why the other answers are wrong

Choice A: When adding a new diuretic or a nephrotoxic agent, it may be appropriate to check
electrolytes and adjust the HCTZ dose. A short course of clarithromycin does not require an adjustment of the HCTZ dose.

**Choice B:** Atenolol, a cardio-selective blocker used for pulse and blood pressure control in this patient, will not be affected by a short course of clarithromycin. Calcium-channel blockers, which can be used for a similar purpose, do interact with clarithromycin, in which case pulse and blood pressure would have to be monitored closely.

**Choice D:** Fluoxetine and the other SSRIs have few drug interactions. Rarely, serotonin syndrome may occur when used with a serotonergic agonist (such as a triptan) or with a monoamine oxidase (MAO) inhibitor.

**Choice E:** Colchicine has few drug interactions, but does have serious adverse reactions (such as bone marrow suppression) that warrant caution when prescribing for elderly patients.

**Tips to remember**

- Warfarin interacts with many drugs and must be considered when initiating a new medication.
- INR must be carefully followed for the effects of drug interaction (decreased or increased metabolism) and the dose titrated to maintain in therapeutic range.

For more prep questions on USMLE Steps 1, 2 and 3, view other posts in this series.

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