

USMLE Step 3 prep: Accurately managing allergic rhinitis

JUN 21, 2021

Staff News Writer

If you're preparing for the United States Medical Licensing Examination[®] (USMLE[®]) Step 3 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.

The AMA selected Kaplan as a preferred provider to support you in reaching your goal of passing the USMLE[®] or COMLEX-USA[®]. AMA members can save 30% on access to additional study resources, such as Kaplan's Qbank and High-yield courses. [Learn more.](#)

This month's stumper

A 22-year-old man presents to the office for management of his allergic rhinitis. He has been told by various physicians over the years that he suffers from this disorder, but no medications have ever been prescribed. He has been instructed instead to avoid certain environmental exposures. He reports that each spring and early summer he suffers from sneezing, nasal discharge and pruritus, as well as itching and watering eyes.

The symptoms often abate in the fall and winter, though he occasionally has symptoms during that time. A survey of his environmental exposures reveals no workplace toxic irritants, perfumes, or colognes which seem to trigger the symptoms. However, cat hair does exacerbate his symptoms. He works approximately an hour from his home and commutes by car.

Which of the following is the most accurate management of this patient?

- A.** Advise him to have his home cleaned weekly to decrease the number of triggers.
- B.** Initiate chlorpheniramine.

- C. Prescribe a diphenhydramine.
- D. Prescribe a mometasone.
- E. Prescribe pseudoephedrine.

The correct answer is D.

Kaplan Medical explains why

This patient has allergic rhinitis (AR). AR may be seasonal or perennial with significant overlap. For seasonal AR there are well-identified triggers in spring and summer. Perennial AR is characterized by more chronic symptoms with occasional flares. Diagnosis is based solely upon the history and physical examination.

For this patient who appears to have a significant overlap between the two types of AR and has no clear allergen identified, medical treatment is indicated. Medical therapy has been shown to improve symptoms and is associated with an overall improved quality of life. Topical intranasal steroids such as mometasone are superior to prescription nonsedating antihistamines for overall symptom control and fewer side effects. For this reason, topical intranasal steroids are now considered first-line pharmacotherapy for AR.

Why the other answers are wrong

Choice A: Since the patient has no clearly identifiable allergen, weekly home cleaning will be of little benefit. For patients with such triggers identified, this course of action often improves symptoms dramatically.

Choice B: Over-the-counter antihistamine therapy such as chlorpheniramine consists of so-called “sedating” or “traditional” antihistamines. These are not good agents for this patient because of his need to drive each day. In fact, studies have documented that the driving performance of patients on these drugs is similar to that of drivers with alcohol intoxication.

Choice C: Oral antihistamines such as diphenhydramine are associated with drowsiness formulations. These are inferior to second-generation agents such as loratadine, cetirizine, and fexofenadine. Intranasal steroids are more efficacious and should be tried first. The intranasal antihistamine formulations offer no added benefit when compared to oral formulations and are therefore not recommended.

Choice E: Alpha-adrenergic agonists such as pseudoephedrine stimulate vasoconstriction by activating alpha-adrenergic receptors of the respiratory mucosa. They are used alone or in combination with antihistamines and are primarily used as nasal decongestants. These are not first-line treatment for patients with AR.

Tip to remember

Topical intranasal steroids are far superior to antihistamines and are the first-line treatment for treating patients with allergic rhinitis.

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