

# PharmaCE™

a continuing education program for *JPT* readers

Kim Whitney, PharmaCE Manager, April Salyers, PharmaCE Assistant,  
PO Box 42696, Cincinnati, Ohio 45242-0696

## January/February CE Questions

### Educational Consultants

Nancy J Fjortoft PhD, Downers Grove, IL; Peggy G Kuehl PharmD FCCP BCPS, Lenexa, KS; David A Riley EdD, Morgantown, WV; Ginger G Scott PhD, Morgantown, WV; Michael C Shannon PhD, Nicholasville, KY; Robert B Supernaw PharmD, Wingate, NC.



### ACCREDITATION

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## MEFLOQUINE IN MALARIA CHEMOPROPHYLAXIS

(see page 32)

### Goal

To review literature highlighting controversy over mefloquine use for malaria chemoprophylaxis, providing a synopsis of the neuropsychiatric sequel events possible after mefloquine therapy, with separate emphasis on the positive aspects of mefloquine therapy and assistance in patient counseling sessions.

### Objectives

After reviewing this article, the reader should be able to:

1. describe global disease outbreak patterns for malarial illnesses;
2. list the plasmodial pathogens that act as vectors in malaria transmission;
3. explain global variations in resistance to malarial chemoprophylactic treatment;
4. explain the predisposition states or risk factor variables that heighten risks for mefloquine-provoked neuropsychiatric harm;
5. translate risk variables into counseling session discussion threads;
6. discuss how further data are necessary to firmly claim that mefloquine provokes neuropsychiatric sequel events;
7. describe hypotheses generated to explain the neuroanatomical/neurochemical underlays for mefloquine neurotoxicities;
8. evaluate viable mefloquine alternative therapies;
9. select among alternative therapies based on resistance patterns and therapeutic contraindications.

### Test Questions

1. Evidence supports a greater incidence of NAEs in specific patient groups. All of the following groups qualify as high risk *except*:

- (a) patients with Asian heritage.
- (b) patients with family histories indicating psychiatric disease.
- (c) female patients.
- (d) patients with liver dysfunction.
- (e) low-body-weight individuals.

2. Malaria:
  - (a) is a parasitic disease that develops secondary to mosquito vector transmission.
  - (b) is a disease causing approximately 1.5 million fatalities annually.
  - (c) is a disease with expanding incidence due to global travel.
  - (d) All of the above are correct.
  - (e) Both a and c are correct.
3. Nonpharmacologic prophylactic practices include:
  - (a) applying insecticide/mosquito repellent to clothing.
  - (b) using bednets if one is outdoors during overnight hours.
  - (c) wearing long sleeves and adequate footwear to obstruct the mosquito vector's access to skin.
  - (d) All of the above are correct.
  - (e) Both a and b are correct.
4. Malaria has genesis from 4 species of *Plasmodia*, with the most avidly studied organism due to resistance patterns being:
  - (a) *malaria*.
  - (b) *falciparum*.
  - (c) *vivax*.
  - (d) *ovale*.
  - (e) Both a and b are correct.
5. Chemoprophylaxis is not always justified because:
  - (a) *Plasmodium*-infected mosquito vectors may not be prevalent at the traveler's destination zone.
  - (b) the traveler may plan to spend most of the time indoors.
  - (c) Malaria is a curable disease and one that rarely produces fatalities.
  - (d) All of the above are correct.
  - (e) Both a and b are correct.
6. Because of drug- and multidrug-resistant *P. falciparum*, no single agent can successfully control the infectious potential in Africa. Africa-based caregivers should likely consider:
  - (a) doxycycline as an alternative therapy for children less than 8 years old.
  - (b) chloroquine/proguanil combination therapy in patients with a preexisting cardiac condition.
  - (c) atovaquone/proguanil in patients with a liver-based *Plasmodium* infection.
  - (d) chloroquine/proguanil combination therapy in patients with ophthalmologic disease.
  - (e) Both b and d are correct.
7. Which of the following questions is appropriate during clinical consultation with a nonimmune traveling patient who is contemplating mefloquine chemoprophylaxis?
  - (a) What activities will you undertake while traveling and do you expect to feel stressed?

Answer sheet appears on facing page.

- (b) Is there a family history of epilepsy or seizures?
  - (c) Are you currently taking any other medications?
  - (d) All of the above are correct.
  - (e) Both a and b are correct.
8. Which of the following hypotheses has been generated to explain mefloquine-provoked neurotoxicity?
- (a) Mefloquine elicits psychiatric symptoms as a secondary effect—the primary tissue influenced is the liver.
  - (b) Mefloquine causes a loss of catecholaminergic neurons in the basal ganglia brain area.
  - (c) Mefloquine enhances acetylcholinesterase enzyme activity.
  - (d) Mefloquine accelerates ionic fluxing at potassium channels.
  - (e) None of the above is correct.
9. During the last 2 decades, a global resurgence of malaria cases has been noted; statisticians predicted that \_\_\_\_\_ people would contract malaria in 2005.
- (a) 27 million
  - (b) 72 million
  - (c) 270 million
  - (d) 720 million
  - (e) 800 million
10. Which of the following environmental variables can influence a treated individual's dose–effect curve?
- (a) ambient temperature
  - (b) lighting
  - (c) environmental noise
  - (d) All of the above are correct.
  - (e) Both a and b are correct.
11. Adverse effects associated with mefloquine treatments may manifest:
- (a) in 40% of patients after 1 dose.
  - (b) in 60% of patients after 2 doses.
  - (c) in 75% of patients after 3 doses.
  - (d) Both b and c are correct.
  - (e) Both a and c are correct.
12. Which of the following statements accurately summarizes chemoprophylaxis tolerability outcomes in the study performed by Schlagenhauf et al.<sup>83</sup>
- (a) Mild-to-moderate adverse effects occurred in 33% of the chloroquine/proguanil arm.
  - (b) Mild-to-moderate adverse effects occurred in 45% of the doxycycline arm.
  - (c) Mild-to-moderate adverse effects occurred in 42% of the mefloquine arm.
  - (d) Mild-to-moderate adverse effects occurred in 36% of the atovaquone/proguanil arm.
  - (e) None of the above is correct.