

Improving Clinical and Economic Outcomes in Multiple Sclerosis

Physician Credit

Accreditation Statement

This activity has been planned and implemented in accordance with the Essentials Areas and policies of the Accreditation Council for Continuing Medical Education through the joint sponsorship of the University of Cincinnati and Pharmacy Times Office of Continuing Professional Education. The University of Cincinnati is accredited by the ACCME to provide continuing medical education for physicians.

Credit Designation

The University of Cincinnati designates this journal-based CME activity for a maximum of 3.0 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Pharmacist Credit

Accreditation and Credit Designation



Pharmacy Times Office of Continuing Professional Education is accredited by the Accreditation Council for Pharmacy Education (ACPE) as a provider of continuing pharmacy education. This activity is approved for 3.0

contact hours (0.3 CEUs) under the ACPE universal activity number 0290-9999-13-109-H01-P. The activity is available for CE credit through January 15, 2014.

Instructions

After reading “Improving Clinical and Economic Outcomes in Multiple Sclerosis,” complete the program evaluation and select the single best answer to each of the posttest questions.

A statement of continuing education credit will be provided to those physicians and pharmacists who successfully complete and return the answer form and program evaluation and receive a passing grade of 70% or higher on the posttest.

Posttest Questions

Choose the best answer for each of the following:

1. The prevalence of MS in the United States is approximately
 - a. 1 in 40
 - b. 1 in 4
 - c. 200
 - d. 400,000
 - e. 2.1 million

2. Which of the following is not true regarding the prevalence of MS?
 - a. It is more common in men than women
 - b. The prevalence is low in Asia
 - c. The prevalence is low in South America
 - d. It is common in Caucasians
 - e. It is affected by genetics and the environment

3. Which of the following is false regarding the pathophysiology of MS?
 - a. It is an inflammatory disease
 - b. It involves the cell-mediated immune system
 - c. Genetics impact immune response
 - d. Chronic lesions have indistinct margins
 - e. A growing body of evidence supports a pathogenic role of B cells

4. Which of the following is the least treatable form of established MS?
 - a. Relapsing-remitting MS
 - b. Primary-progressive MS
 - c. Clinically isolated syndrome
 - d. Progressive-relapsing MS
 - e. Secondary-progressive MS

5. Which is the most common form of MS?
 - a. Relapsing-remitting MS
 - b. Primary-progressive MS
 - c. Clinically isolated syndrome
 - d. Progressive-relapsing MS
 - e. Secondary-progressive MS

6. The diagnosis of MS is based on
 - a. Clinical attacks lasting at least 24 hours
 - b. Dissemination in space on magnetic resonance imaging
 - c. Dissemination in time on magnetic resonance imaging
 - d. At least 1 episode of neurologic dysfunction consistent with inflammation and demyelination
 - e. All of the above

7. Which of the following is considered a platform therapy for MS?
 - a. Interferon beta-1a
 - b. Interferon beta-1b
 - c. Glatiramer acetate
 - d. None of the above
 - e. All of the above

8. Symptomatic therapies for MS include all of the following except
 - a. Dalfampridine
 - b. Modafinil
 - c. Mitoxantrone
 - d. Gabapentin
 - e. Baclofen

9. Cognitive dysfunction in MS includes all of the following except
 - a. Attention
 - b. Information processing
 - c. Short-term memory
 - d. Verbal intelligence
 - e. Fatigue

10. Acute MS exacerbations are best treated with
 - a. Increasing the dose of platform therapy
 - b. Switching to fingolimod therapy
 - c. A course of intravenous corticosteroids
 - d. Initiation of disease-modifying therapies
 - e. Switching to teriflunomide

11. Which of the following is a synthetic polypeptide composed of 4 amino acids?
 - a. Interferon beta-1a
 - b. Fingolimod
 - c. Glatiramer acetate
 - d. Mitoxantrone
 - e. Natalizumab

12. Which of the following is a sphingosine-1-phosphate receptor modifier?
 - a. Interferon beta-1a
 - b. Fingolimod
 - c. Glatiramer acetate
 - d. Mitoxantrone
 - e. Natalizumab

13. Which of the following is not true regarding disease-modifying therapies?
 - a. Beta interferon and glatiramer acetate are considered first-line therapies for relapsing-remitting MS
 - b. Mitoxantrone is an anthracenedione that is effective in aggressive MS
 - c. Natalizumab is a humanized monoclonal antibody indicated for relapsing forms of MS
 - d. Teriflunomide inhibits pyrimidine synthesis by binding to the enzyme dihydroorotate dehydrogenase
 - e. Fingolimod is one of the newer injectable agents available for MS

14. Which of the following is not an adverse effect of interferon beta products?
- Flu-like symptoms
 - Injection site reactions
 - Depression
 - Progressive multifocal leukoencephalopathy
 - Laboratory abnormalities
15. Which of the following appears to be more effective than interferons or glatiramer acetate?
- Alemtuzumab
 - Natalizumab
 - Fingolimod
 - Mycophenolate mofetil
 - Teriflunomide
16. Which of the following is not an investigational agent for MS?
- Alemtuzumab
 - Laquinimod
 - Daclizumab
 - Dimethyl fumarate
 - Mycophenolate mofetil
17. Direct costs of MS include all of the following except
- Lost productivity
 - Medication expense
 - Hospital expense
 - Outpatient office visits
 - Laboratory evaluation
18. The approximate cost of an MS attack is closest to which of the following?
- \$1000
 - \$5000
 - \$12,000
 - \$47,000
 - \$80,000
19. Strategies to improve adherence to medication for MS include all of the following except
- Decrease out-of-pocket expenses
 - Use medications with less frequent administration
 - Educate on the importance of medication
 - Provide a structured approach to care
 - Treat only when attacks occur
20. Methods to improve cost efficiency in MS include all of the following except
- Optimize adherence
 - Provide disease therapy management programs
 - Start therapy earlier in the disease
 - Target therapy to prevent relapse
 - Increase cost sharing to the patient

Physician Credit

Instructions for Receiving Continuing Physician Education (CME) Credit: Testing and Grading Information

1. This lesson is free online at www.ajmc.com where you will be directed to the posttest and evaluation form to receive instant grading and a downloadable CME certificate.
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Testing and Grading Directions

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2. Participants receiving a failing grade on any exam will be notified and permitted to take 1 reexamination at no cost.
3. All answers should be recorded on the answer form.
4. To receive credit, you may detach the completed CME Answer Form/Evaluation and mail or fax to: University of Cincinnati, Office of CME, ML 0556, Cincinnati, OH 45267-0556. Phone: 513-558-7277; Fax: 513-558-1708. Please print clearly to ensure receipt of CME credit. To receive credit certification electronically, please provide your e-mail address.
5. To receive credit and an immediate certificate, register at <http://ccpd.uc.edu/lms/> and complete the posttest and evaluation. If you have previously registered, click Sign-In, and enter your e-mail address and password to log in. Otherwise, click Sign-In and complete the registration process. Once you log in, click Browse Activities and do an Activity Search to locate this supplement.

Release date: January 15, 2013

Expiration date: January 15, 2014

Pharmacy Credit

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4. To receive credit certification, please detach and mail or fax the test portion of this page to:

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Plainsboro, NJ 08536

Phone: 800-597-6372; Fax: 609-257-0000

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CME and CE Posttest Answer and Evaluation Forms follow.

ACE008

Physician Credits

(PLEASE PRINT CLEARLY)

Name/Degree _____

Street _____

City _____

State/Zip _____

Daytime Phone _____

Fax _____

E-mail (required) _____

Date of Birth _____

Release Date: **January 15, 2013**

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CME Test Form
**Improving Clinical and Economic Outcomes
 in Multiple Sclerosis**

1.	a	b	c	d	e
2.	a	b	c	d	e
3.	a	b	c	d	e
4.	a	b	c	d	e
5.	a	b	c	d	e
6.	a	b	c	d	e
7.	a	b	c	d	e
8.	a	b	c	d	e
9.	a	b	c	d	e
10.	a	b	c	d	e
11.	a	b	c	d	e
12.	a	b	c	d	e
13.	a	b	c	d	e
14.	a	b	c	d	e
15.	a	b	c	d	e
16.	a	b	c	d	e
17.	a	b	c	d	e
18.	a	b	c	d	e
19.	a	b	c	d	e
20.	a	b	c	d	e

Answer Form Instructions: Testing and Grading Procedures

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- Participants receiving a failing grade on any exam will be notified and permitted to take 1 reexamination at no cost.
- All answers should be recorded on the answer form.
- To receive credit certification electronically, please provide your e-mail address. Detach and mail or fax the test portion of this page to:
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Please print clearly to ensure receipt of CME credit.
- To receive credit and an immediate certificate, register at <http://ccpd.uc.edu/lms/> and complete the posttest and evaluation. If you have previously registered, click Sign-In, and enter your e-mail address and password to log in. Otherwise, click Sign-In and complete the registration process. Once you log in, click Browse Activities and do an Activity Search to locate this supplement. ACE008

CME Activity Evaluation

How long did it take you to complete this activity?

_____ minutes

How well did this activity achieve its educational objectives?

Very well Well Somewhat Not at all

What overall grade would you assign this activity?

A B C D

Did this activity exhibit promotional bias for any pharmaceutical agents?

Yes No

Will you make changes in your practice as a result of information presented in this lesson?

Yes No

CE Answer Form and Evaluation

Please print clearly.

CE Answer Form: JANUARY 15, 2013 • IMPROVING CLINICAL AND ECONOMIC OUTCOMES IN MULTIPLE SCLEROSIS				
ACTIVITY 0290-9999-13-109-H01-P (TEST VALID THROUGH JANUARY 15, 2014. NO CREDIT WILL BE GIVEN AFTER THIS DATE.)				
1. a b c d e	5. a b c d e	9. a b c d e	13. a b c d e	17. a b c d e
2. a b c d e	6. a b c d e	10. a b c d e	14. a b c d e	18. a b c d e
3. a b c d e	7. a b c d e	11. a b c d e	15. a b c d e	19. a b c d e
4. a b c d e	8. a b c d e	12. a b c d e	16. a b c d e	20. a b c d e
<input type="checkbox"/> Presently Enrolled in CE Program		<input type="checkbox"/> Nonsubscriber Participant Pharmacist		
Name:		E-mail:		
Address:				
City:		Zip:		Daytime Phone:
Specialty: <input type="checkbox"/> Pharmacist <input type="checkbox"/> Pharmacy Technician <input type="checkbox"/> Other (Specify)				
NABP e-Profile Number:			Date of Birth (MM/DD Format):	

CE Evaluation Form: JANUARY 15, 2013 • IMPROVING CLINICAL AND ECONOMIC OUTCOMES IN MULTIPLE SCLEROSIS					
Please rate the effectiveness of this activity. Your input and comments are encouraged and appreciated.					
	Poor		Average		Excellent
1. Overall, how would you rate this activity?	1	2	3	4	5
2. Overall, how would you rate the work of the instructor(s)?	1	2	3	4	5
3. How would you rate the quality of the instructional materials?	1	2	3	4	5
4. Were the learning objectives of this activity met?	Not at all		Partially		Completely
(Objective 1)	1	2	3	4	5
(Objective 2)	1	2	3	4	5
(Objective 3)	1	2	3	4	5
(Objective 4)	1	2	3	4	5
(Objective 5)	1	2	3	4	5
5. Was the activity useful and relevant to your practice?	1	2	3	4	5
6. Do you believe the subject matter was presented objectively? Yes No If no, please explain: _____					
<p>7. Do you intend to make any changes to your practice based on learnings from this program?</p> <p>a. Yes b. No</p> <p>If yes, which of the following changes do you intend to implement? (<i>Please select all that apply</i>)</p> <p>a. Provide more in-depth counseling to patients b. Proactively talk to patients with this disease/problem/issue c. Educate staff to better help patients d. Seek more resources to provide to patients e. Implement disease management program f. Improve monitoring for adherence/persistence g. Other _____ h. None</p>	<p>8. Do you anticipate any barriers in trying to implement changes in your practice?</p> <p>a. Yes b. No c. Don't know</p> <p>If yes, what barriers do you anticipate? (<i>Please select all that apply</i>)</p> <p>a. Lack of time b. Lack of resources c. Lack of pharmacy technician help d. Corporate focus is elsewhere e. Legal issues f. Insurance issues/restrictions g. Patients don't want this service or have no time h. Other _____ i. None</p>	<p>9. Based on the learning from this activity, overall how confident are you in your ability to counsel/educate/manage the disease/condition/problem (<i>1 being NOT confident and 5 being VERY confident</i>)?</p> <p>a. 1 (Not confident) b. 2 c. 3 (Somewhat confident) d. 4 e. 5 (Very confident)</p> <p>10. What other topics related to this topic would you like to explore in future CE activities?</p> <p>_____</p> <p>_____</p> <p>_____</p>			

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